

Out-of-the-box IT Automation

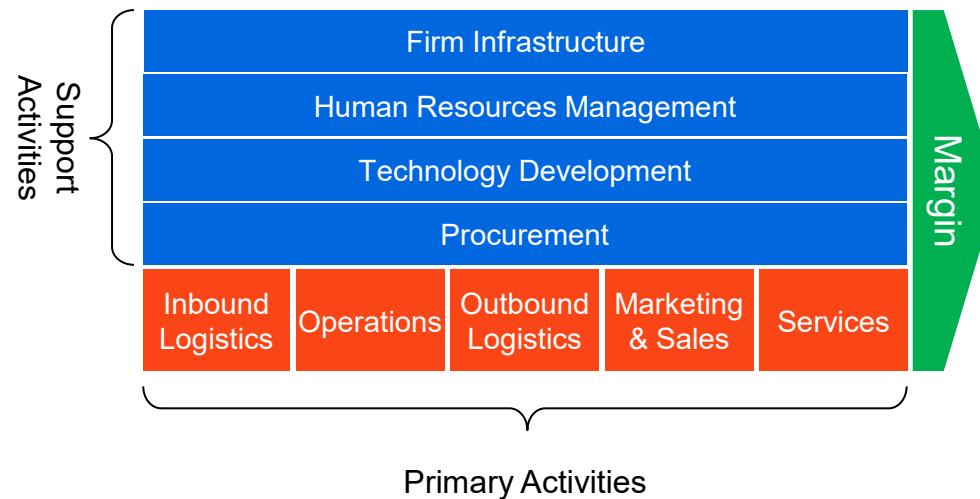
Andrei Oros



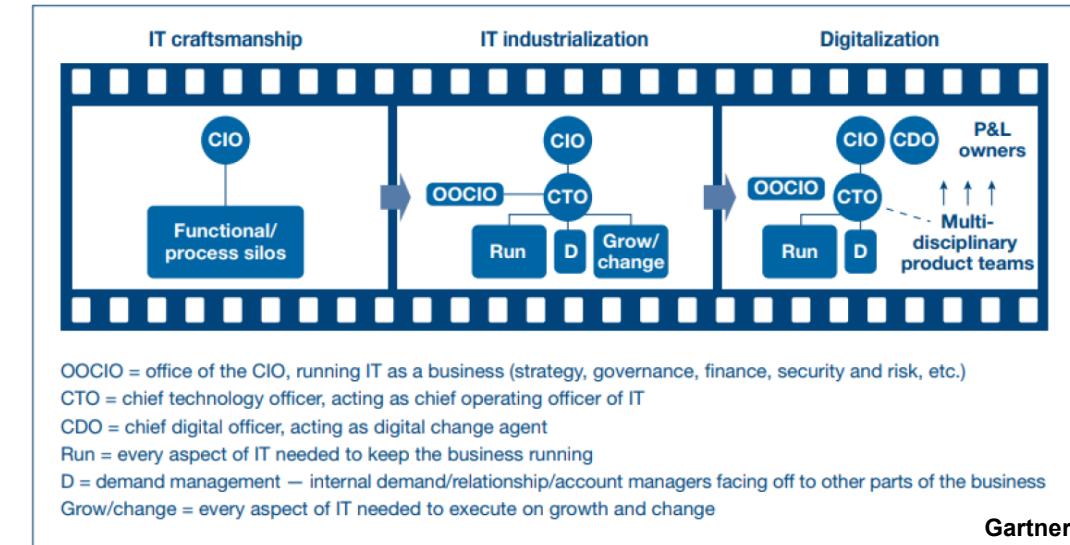
IT Automation Digital Transformation



Michael Porter – org. value chain

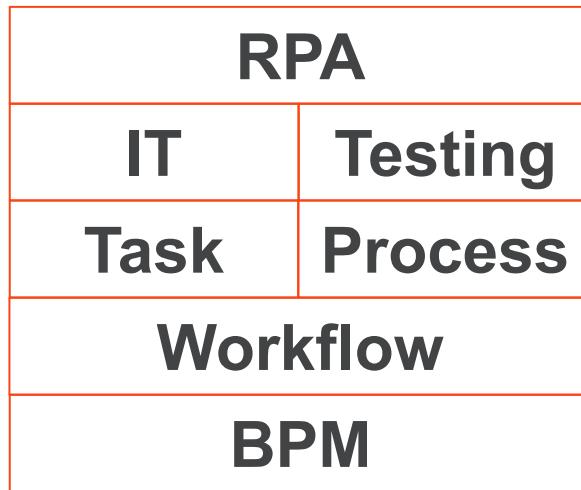


IT evolution & integration

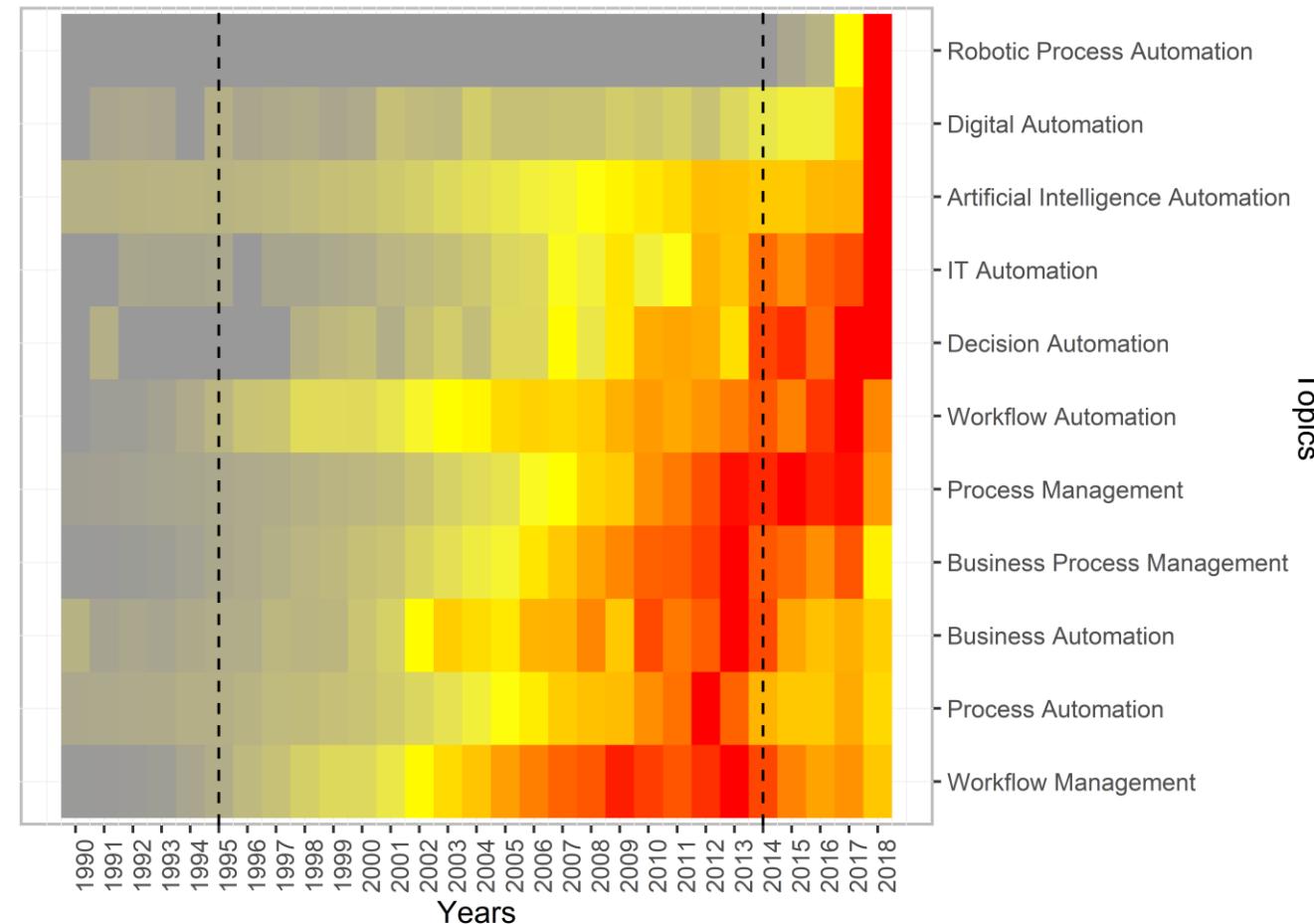


Digital Transformation

IT Automation Holistic Vision



Trends Generations (academia phd research, Andrei Oros)



Attended
Unattended

Long Running
Approval Persistence

Cognitive
AI integration

Challenges facing IT leaders



Technology and process optimization



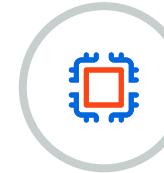
Growth



Security and Privacy



Compliance and regulation



Technical debt and legacy systems



Outsourcing



Governance vs Self-service



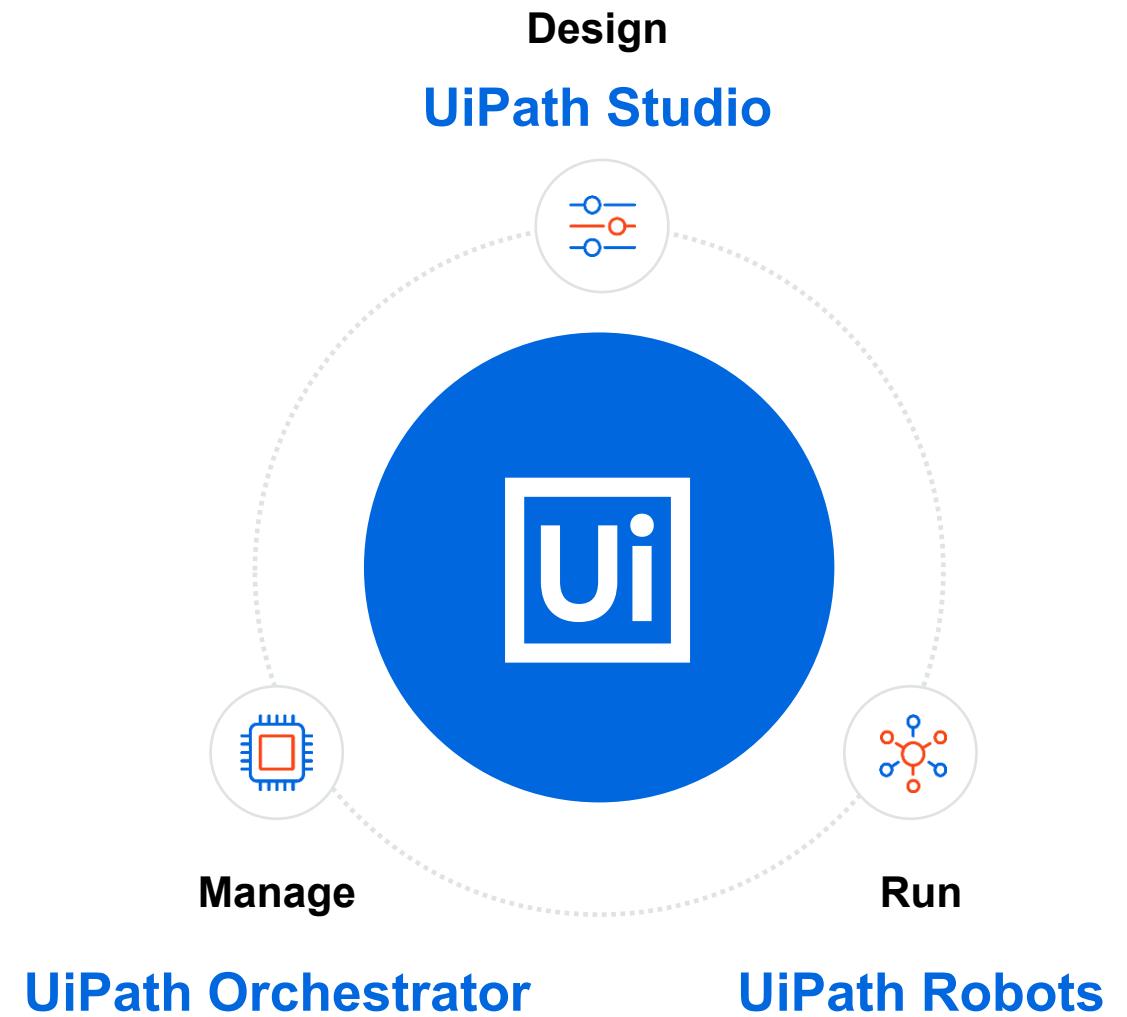
Ever tightening SLAs and Performance Metrics

The UiPath Enterprise RPA Platform

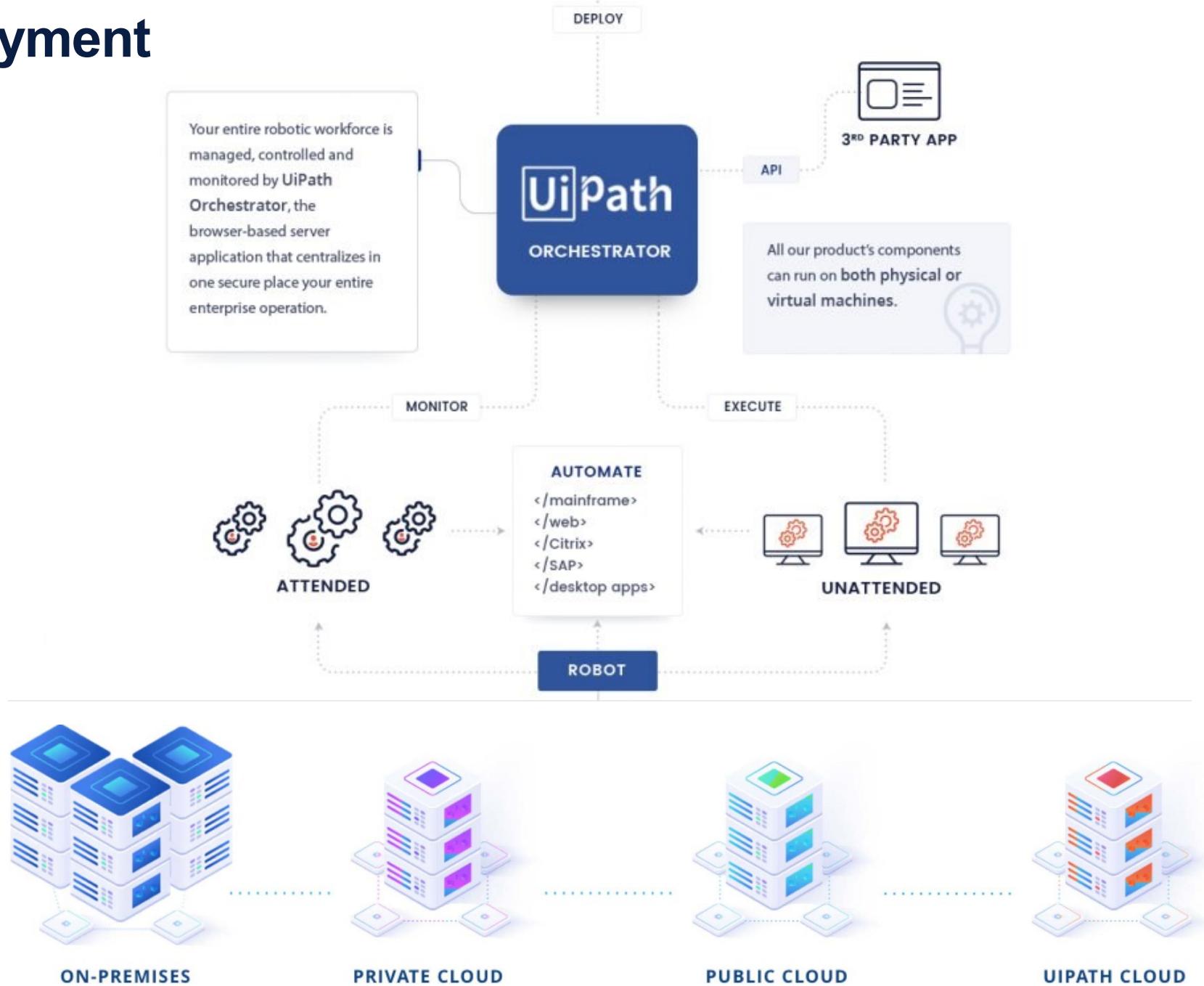




**Loved by Users,
Valued by Business,
Trusted by IT**



Deployment



Get fast Results



Empowering Businesses

Use the power of IT Automation to optimize your business

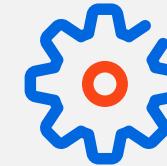
- low barrier to entry
- reduced setup time
- rapid ROI



Seamless Integration

Integrates with your existing Systems & Applications

- no additional implementation costs
- blends into your existing partner ecosystem



IT Process Automation

IT Infrastructure & Services provisioning, management, configuration capabilities

- higher productivity of IT teams
- increased agility: fast response to changes, requests
- cost savings

IT integrated with the business. Evolve the role of IT



Orchestration

Orchestrator app for Jobs start / schedule / trigger / integration (with 3rd party systems, via API)

- on-demand job start from the web app for a *datacenter shutdown* job (controlled power-off for maintenance)
- automatically trigger a user *password reset* job based on a new ITSM ticket request
- nightly trigger a *server power-off* job to stop un-used compute and save costs



Mobility

Orchestrator mobile app or via VPN access to web application

- start workflow jobs from mobile devices
- access execution logs and reports on the go
- reply to Long Running Workflows approval requests from the road
- react to critical requests a.s.a.p. (e.g. a critical server reboot task done with a workflow job)



Empower Scripts

Empower existing scripts by simply adding them in workflows. Advantages:

- increase security: passwords can be connected to secure credentials (Orchestrator assets, secure vaults, ..)
- access control: delegate workflow executions
- mobility: run them on the go
- integrated approval / persistence / LRW
- out-of-the-box support for Audit / ISO certifications

Empower RPA Workflows with out-of-the-box IT Automation Activities



Implementation

Background running activities built on top of the official SDKs from *Microsoft, Amazon, Citrix, VMware, ..*



Security and Compliance

Developed by UiPath

Published on the official feed (LTS)

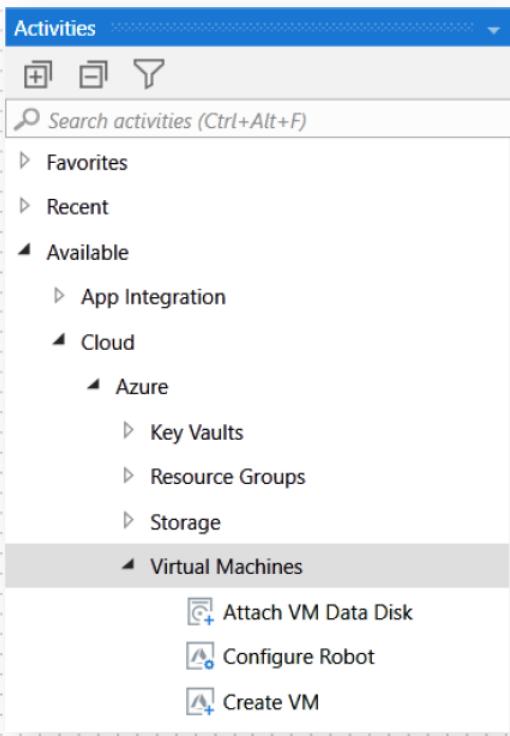
A screenshot of the UiPath Studio interface. The top navigation bar shows "Activities". Below it is a toolbar with icons for creating new items. A search bar labeled "Search activities" is present. The main pane displays a hierarchical list of activities under the "Virtual Machines" category. The list includes: Snapshots, Configure Robot, Convert Template to VM, Convert VM to Template, Create VM From Template, Customize VM, Delete VM, Deploy OVF Template, Export OVF Template, Get Template List, Get VM, Get VM List, Migrate VM, Move VM to Folder, and Power Off VM. At the bottom of the interface, there are tabs for "Project", "Activities" (which is selected), "Snippets", and "Output".

- Activities
- + - =
- Search activities
- Virtual Machines
 - Snapshots
 - Configure Robot
 - Convert Template to VM
 - Convert VM to Template
 - Create VM From Template
 - Customize VM
 - Delete VM
 - Deploy OVF Template
 - Export OVF Template
 - Get Template List
 - Get VM
 - Get VM List
 - Migrate VM
 - Move VM to Folder
 - Power Off VM
- Project Activities Snippets Output

Integrations

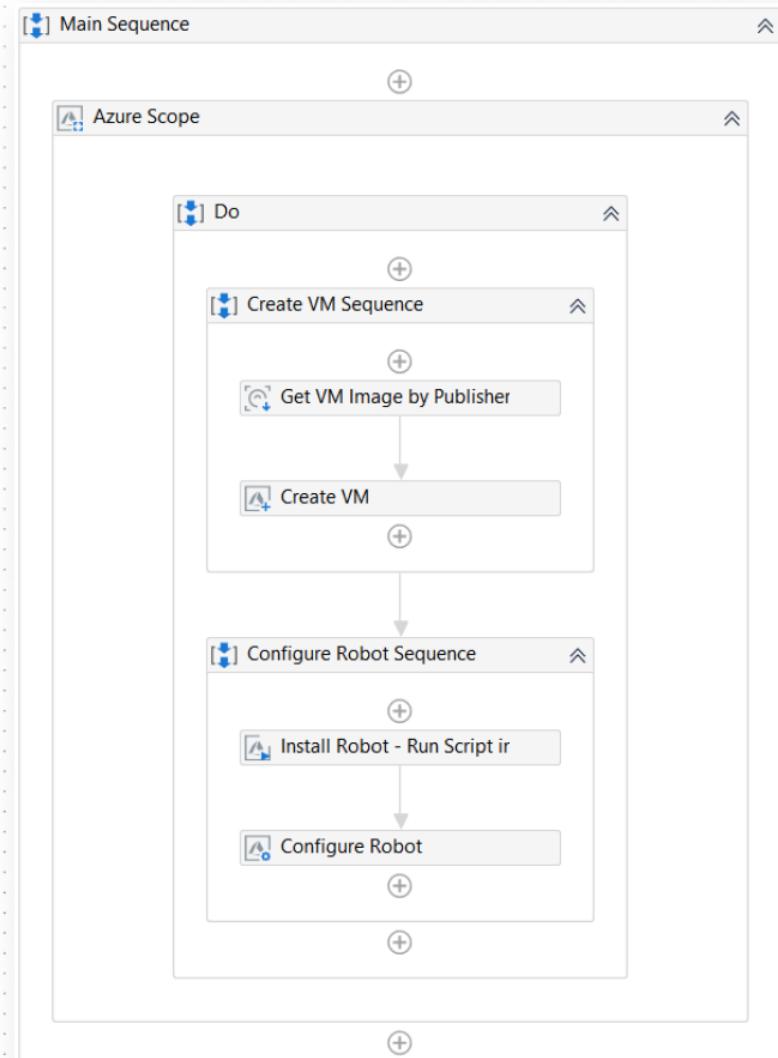
Azure
Amazon Web Services
Active Directory
Azure Active Directory
Exchange Server
VMware ESXi vCenter
Citrix Hypervisor
Hyper-V
System Center

ServiceNow
Office 365
Workday
Atlassian Jira
Scripting (PS, Python, Bash, ..)
APIs (Rest, SOAP, ..)
... and more



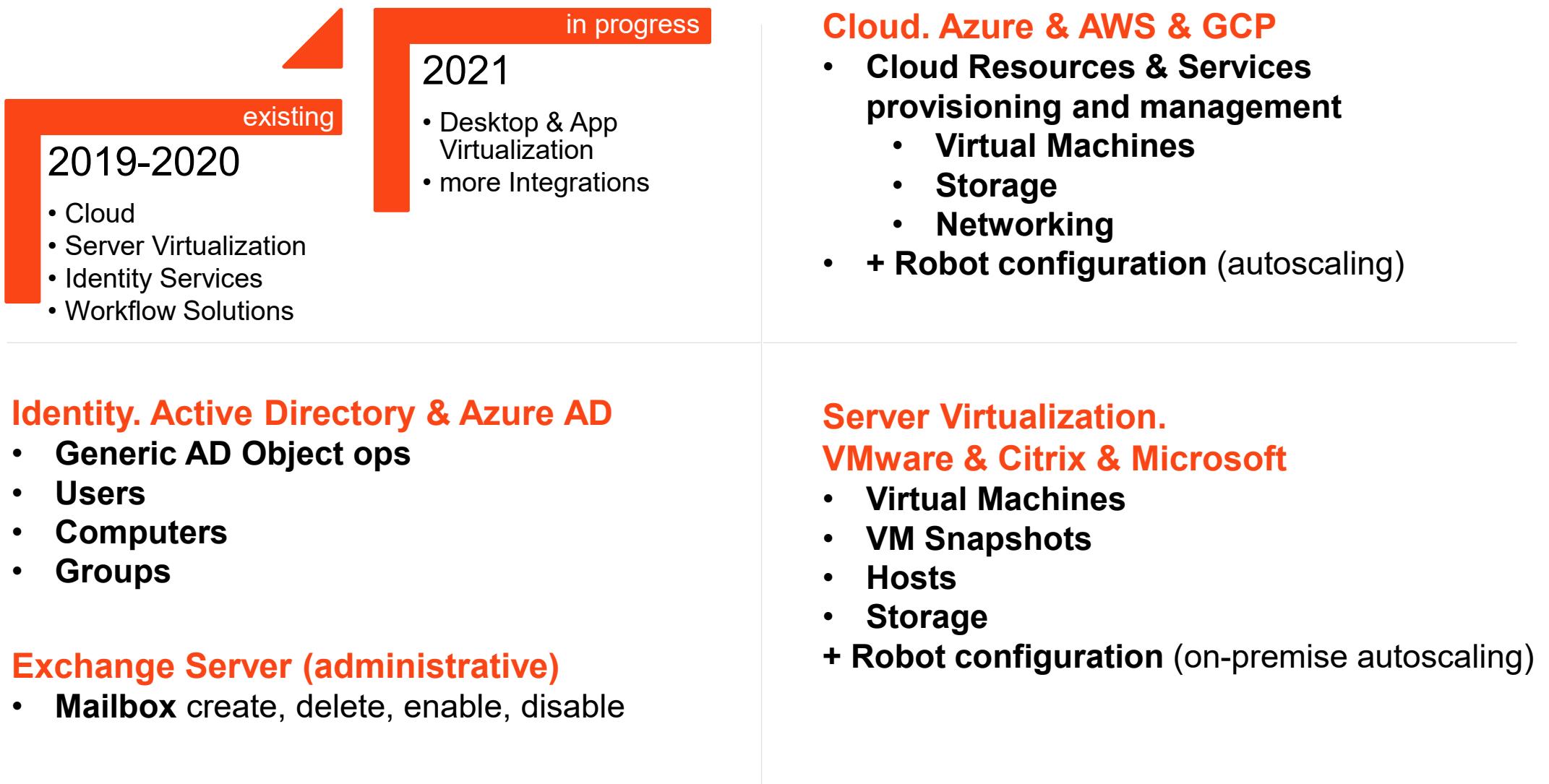
500+ IT activities

easy to use with drag & drop
background running via APIs
secure Veracode certified
official LTS by UiPath



Simple. Elegant
powerful workflow automation for IT Tasks

Roadmap



IT integrations landscape

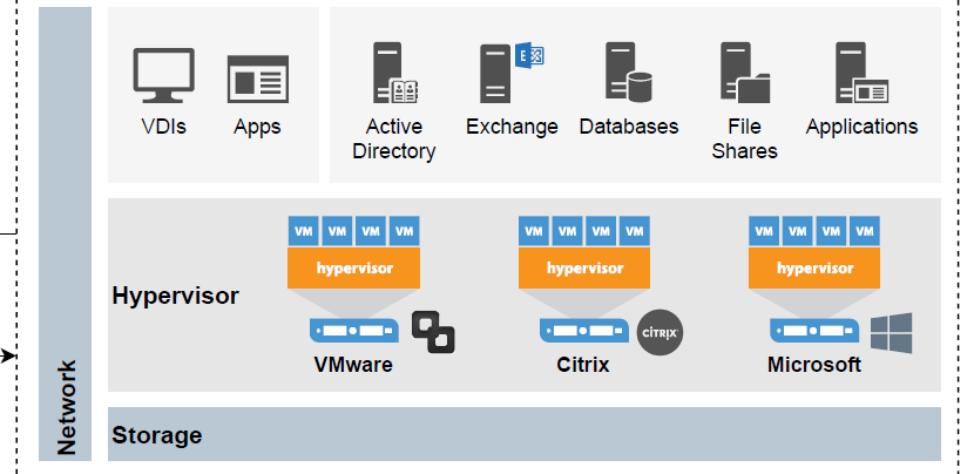
Public Cloud



Internet

API req.

Datacenter



Activities

Azure
Amazon AWS
Azure AD & Office 365
Active Directory
Exchange Server
Hyper-V
VMware (vCenter ESX)
Citrix (XenServer)
...

Processes

Deploy Server (cloud)
Deploy Server (onprem.)
AD - Create User
AD - Reset User Password
VMware export VM to OVF
...

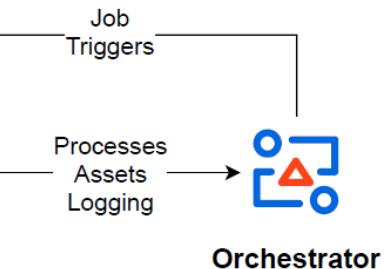
Runtime

Process Instance



Windows Workflow Foundation

.Net Framework 4.6.1



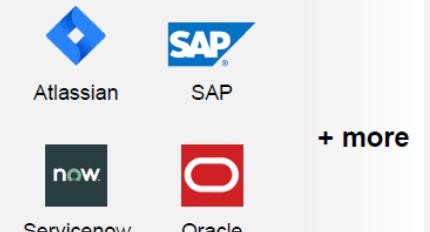
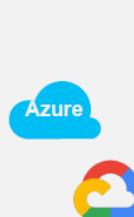
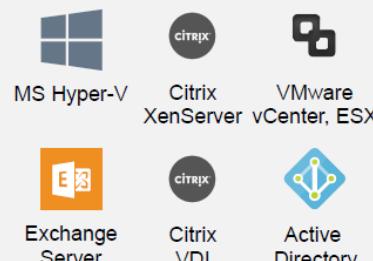
Job Triggers

Processes Assets Logging



Orchestrator

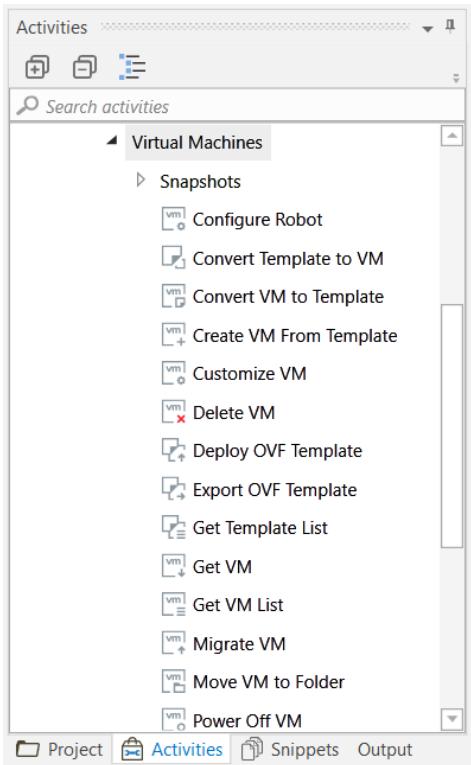
ref. SDKs UI drivers



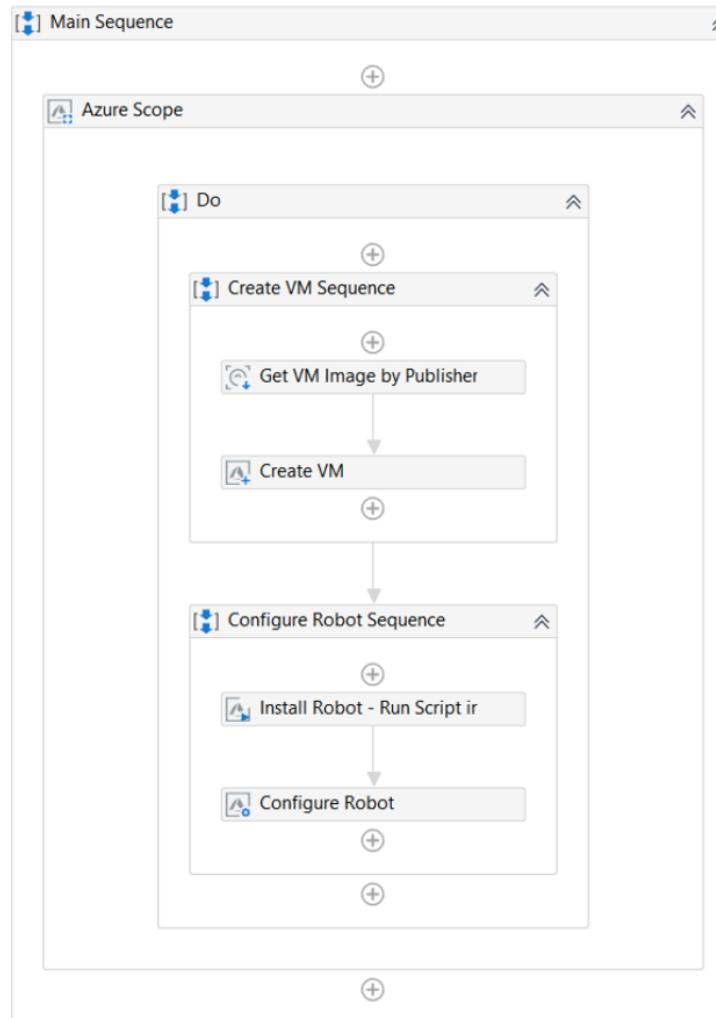
+ more

UiPath™

DevOps. Infrastructure as Workflow / Diagram



Free from Official Feed (LTS)
Background Running (via SDKs)



Easy

create automations with out-of-the-box drag & drop official UiPath IT Automation activities

Vendor agnostic

Azure, AWS, Google Cloud
VMware, Citrix, Hyper-V

Transparent

easy to understand & inspect business logic



Easy to get started

<https://www.uipath.com/developers/community-edition>



Let's automate!

UiPath Community Edition is free for individual developers, open source projects, academic research, education, and small professional teams. The Community Edition software does not come with phone or email support. You can always check our [Video Tutorials, Guides and Resources](#) or check out our [Community Forum](#). Read the licensing terms [here](#).

Ui Academy

<https://www.uipath.com/rpa/academy>



<https://docs.uipath.com/activities/docs>

Ui Forum

<https://forum.uipath.com/c/dev/it-automation/>

Case Studies

IT Automation. Case Studies



Identity Services and User Management

IT Infrastructure and Services Management (including Green computing)

Cloud Security Orchestration

Cloud Management



McKinsey⁵: “In spite of complexity of IT, more than 70% of enterprise IT spend can be targeted with automation”

Metrics from UiPath Customers

80%

AHT reduced for User Unblocking

92%

AHT reduced for Server Migration

10500+

Attacks processed automatically (4M)¹

\$0.9 M

Yearly Savings / 1000 VMs

IT Automation Integrations via SDKs / APIs / Connectors / Ui drivers



¹ RO Bank, ; ² Indian Bank; ³ UiPath Internal Usage; ⁴ Considering Azure Pricing- D2V3 VM & 12h/ day saved on each Cloud VM deallocated²); ⁵ McKinsey- Driving impact at scale from automation and AI

Case Study User Management

User Management. Unlocking a locked User Account

**Large
European
Bank**

Implementation
time:

< 4 weeks

6-month ROI

Significantly improved SLAs

Increased employee satisfaction

100%

Automated

80%

AHT reduced

0%

Error rates

The challenge

1600 requests/month AHT 3 min/transaction

The automation was designed to take over the entire process from request initiation to unlocking and updating the ticket application.

User Management in Banking – frequent scenarios

Business scenarios

On-boarding Give access to systems for new employee according to its role

Temporary change of Branch, keeping same position or **Change of position** (covering vacations periods, medical urgencies)

Reset Passwords to all systems (Security req. to protect wrong use of access)

Block/ un-block access to users upon request and reset password

Off- boarding

Frequency & Volumes

Monthly & Medium
(increased fluctuation of personnel)

Daily & High
(decreased no of Branches and their structure)

Monthly & High
(Security request)

Daily and High

Monthly & Medium

User Management scenario

 **Create New User & Attach it to the specific Role**

 **Change of Role for the user**

 **Bulk Reset of Passwords**

 **Block/un-block user and reset password**

 **Detach user from the roles and close user**

Case Study Server Migration

Infrastructure Management. Server Migration

Large Indian Bank

Large Scale Migration of servers and data from Windows Server 2008 to Windows Server 2012

Time / Migration Reduced from **2h** to under **10min**

~10 servers migrated / hour

10 Robots working in parallel
only 1-2 people monitoring the process

Challenge

The bank has thousands of Windows Server 2008 that need to be migrated to Windows Server 2012 in only 2 months. This complex and time-consuming process takes ~2h / migration and the bank was looking for a more efficient and less error prone method for the task.

Infrastructure Management. Server Migration

Large Indian Bank

Large Scale Migration of servers and data from Windows Server 2008 to Windows Server 2012

~10 servers migrated / hour

10 Robots working in parallel

only 1-2 people monitoring the process

Time / Migration Reduced from 2h to under 10min

Solution

Automated process: 22 high level steps

- Read Domain Credentials from Windows Server 2008
- Read VM Configuration and Credentials
- Export SQL databases from Windows 2008 Servers
- Import SQL databases in the Windows 2012 Servers
- Import certificates and run Agents
- Add Users to Groups, Join Computer to Domains
- Run Services after the data and all files are validated
- Restart the Servers

UiPath capabilities used in the automation:

- IT Automation official activities
- Scripting (PowerShell, Batch, Python WMI framework)

Case Study Infrastructure Auto Scaling

unattended robots

RPA Autoscaling Customer Story

Business Problem. Client is a leading Tax provider that faces dynamic workload related to customer workload during busy tax seasons. This resulted in excess spending on infrastructure and personnel.

Challenge

- Deadline events cause 500-1000% workload demand increases on a daily cycle
- Tax busy seasons, specifically tax end requests, caused spikes in RPA Jobs (dynamic workload)
- Very inefficient while done manually: increased costs with IT Infrastructure and administration
- Scaling needs increase from 10 machines to 300 machines dynamically, each with 10-20 high density robots (avg 1500 robots during the day and 150 robots at night) running 24 / 7
- Incurred high maintenance costs, high administration costs to accommodate dynamic workload in real-time
- Higher Risk from missed SLAs - client potential liability for millions of dollars towards customers and legal commitments

Solution

UiPath provided an autoscaling solution that ..

- Responds in real-time to dynamic workloads by allocating / deallocating robot machines to meet the incoming RPA Jobs requests
- Works with all types of infrastructures (cloud, on-premises, hybrid)
- Empowers the client to easily and on the fly adjust the autoscaling strategy to balance *Cost Savings* vs *Highly-Available Job Execution*

Expected Outcomes



Optimized RPA & Business Operations
reduced costs with IT Infrastructure & labor



Flexible deployment
support for custom RPA setup
(high density robots, environments,
Azure cloud + VMware on-premises)



Green Computing
energy savings with compute from
running a more efficient RPA operation



SLAs risk management
help meet customer & contractual SLAs
in a highly regulated tax environment

Anticipated Savings

62% average expected reduction in annual infrastructure costs

73% average expected reduction in annual labor costs

64% average expected overall reduction in total costs

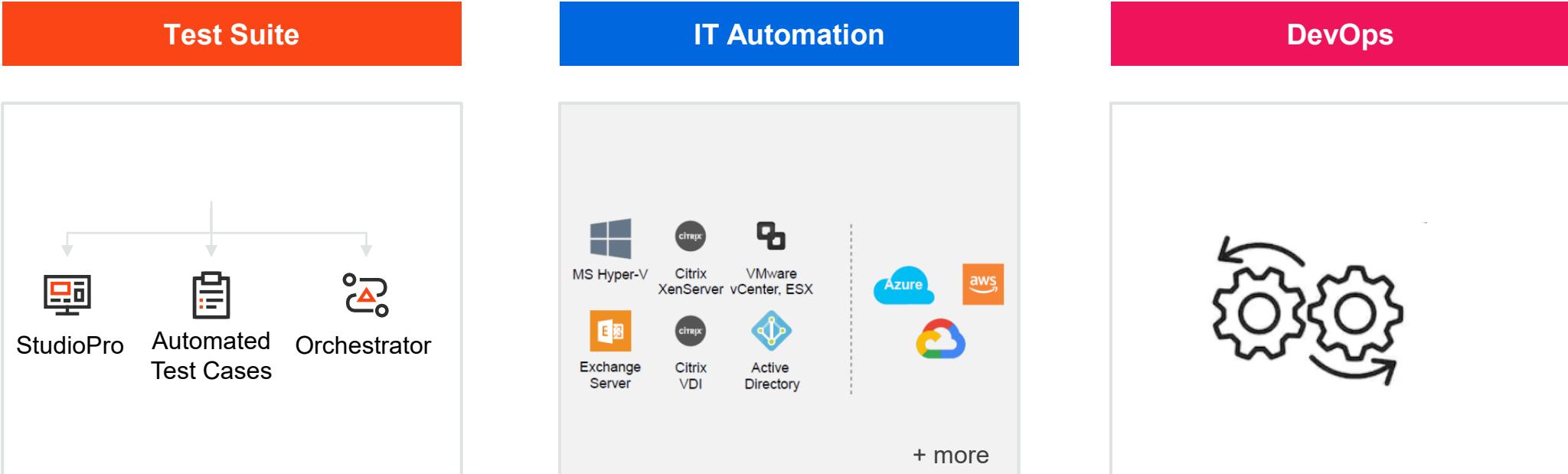
Case Study

IT Automation for DevOps

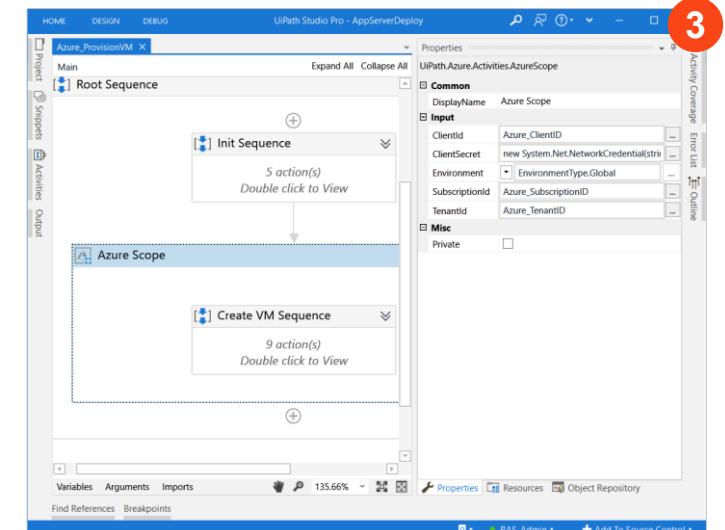
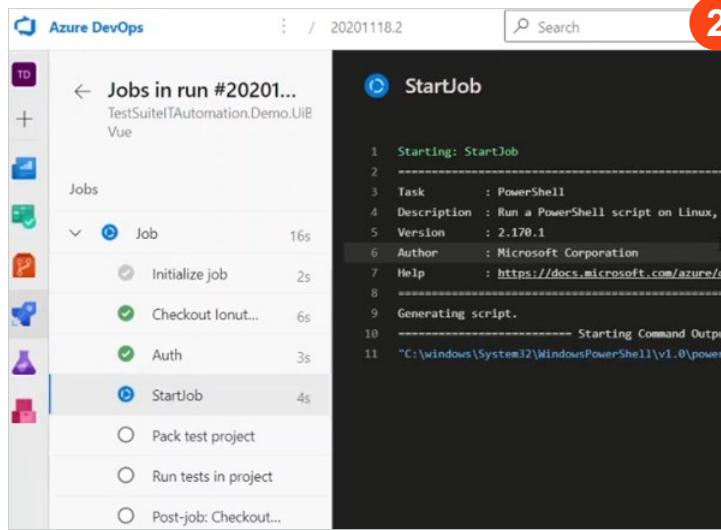
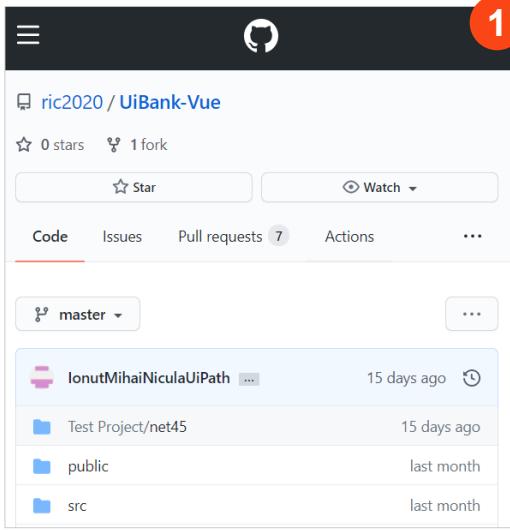
CI / CD and Continuous Testing



Test Suite. IT Automation. DevOps



CI / CD for Continuous Testing



Robot Auto Scaling deallocation

ROBOT	STATE
TS-ITA-R1	Stopped (deallocated)
TS-ITA-R10	Deallocating
TS-ITA-R2	Deallocating
TS-ITA-R3	Deallocating
TS-ITA-R4	Deallocating
TS-ITA-R5	Deallocating
TS-ITA-R6	Stopped (deallocated)
TS-ITA-R7	Stopped (deallocated)
TS-ITA-R8	Deallocating
TS-ITA-R9	Running

A red circle with the number 7 is in the top right corner.

Robot Auto Scaling allocation

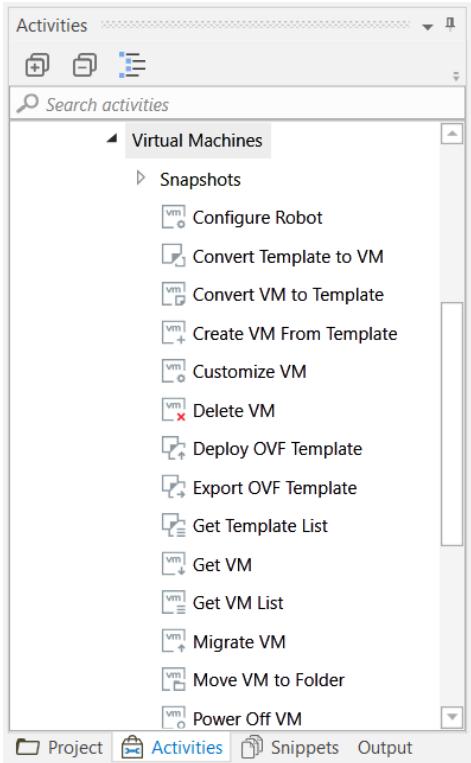
ROBOT	STATE
TS-ITA-R1	Running
TS-ITA-R10	Stopped (deallocated)
TS-ITA-R2	Running
TS-ITA-R3	Starting
TS-ITA-R4	Starting
TS-ITA-R5	Updating
TS-ITA-R6	Stopped (deallocated)
TS-ITA-R7	Stopped (deallocated)
TS-ITA-R8	Stopped (deallocated)

Robot Auto Scaling allocation

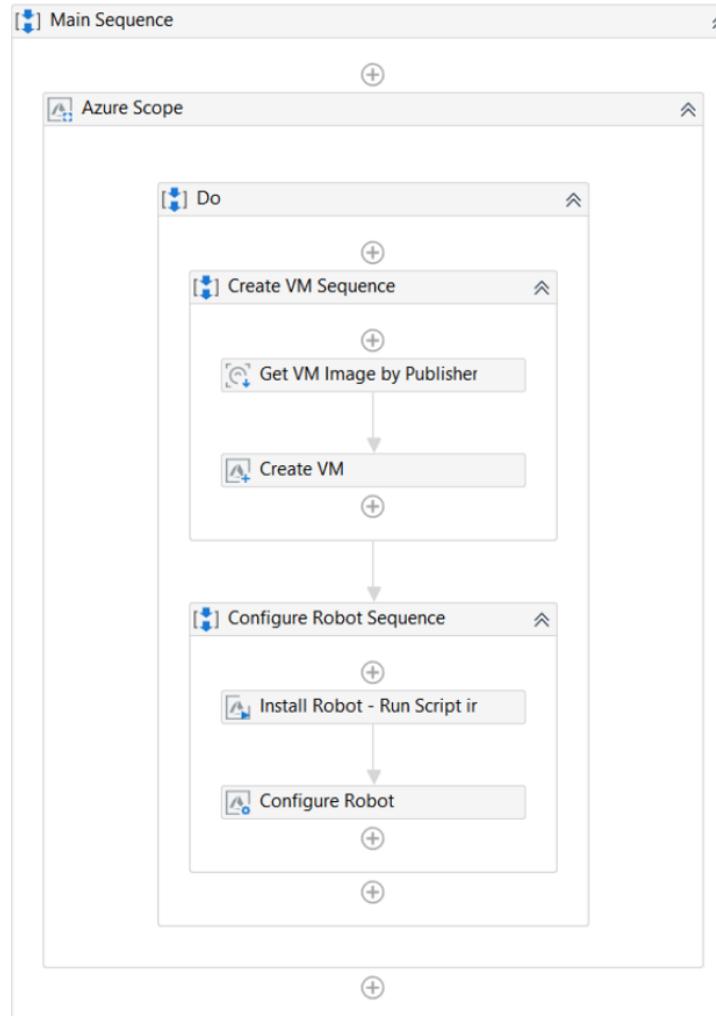
ROBOT	STATE
TS-ITA-R1	Running
TS-ITA-R10	Stopped (deallocated)
TS-ITA-R2	Running
TS-ITA-R3	Starting
TS-ITA-R4	Starting
TS-ITA-R5	Updating
TS-ITA-R6	Stopped (deallocated)
TS-ITA-R7	Stopped (deallocated)
TS-ITA-R8	Stopped (deallocated)

A screenshot of the UiPath Studio Pro interface showing the 'Jobs' tab. It lists several processes and their status. A red circle with the number 4 is in the top right corner.

DevOps. Infrastructure as Workflow / Diagram



Free from Official Feed (LTS)
Background Running (via SDKs)



Easy

create automations with out-of-the-box drag & drop official UiPath IT Automation activities

Vendor agnostic

Azure, AWS, Google Cloud
VMware, Citrix, Hyper-V

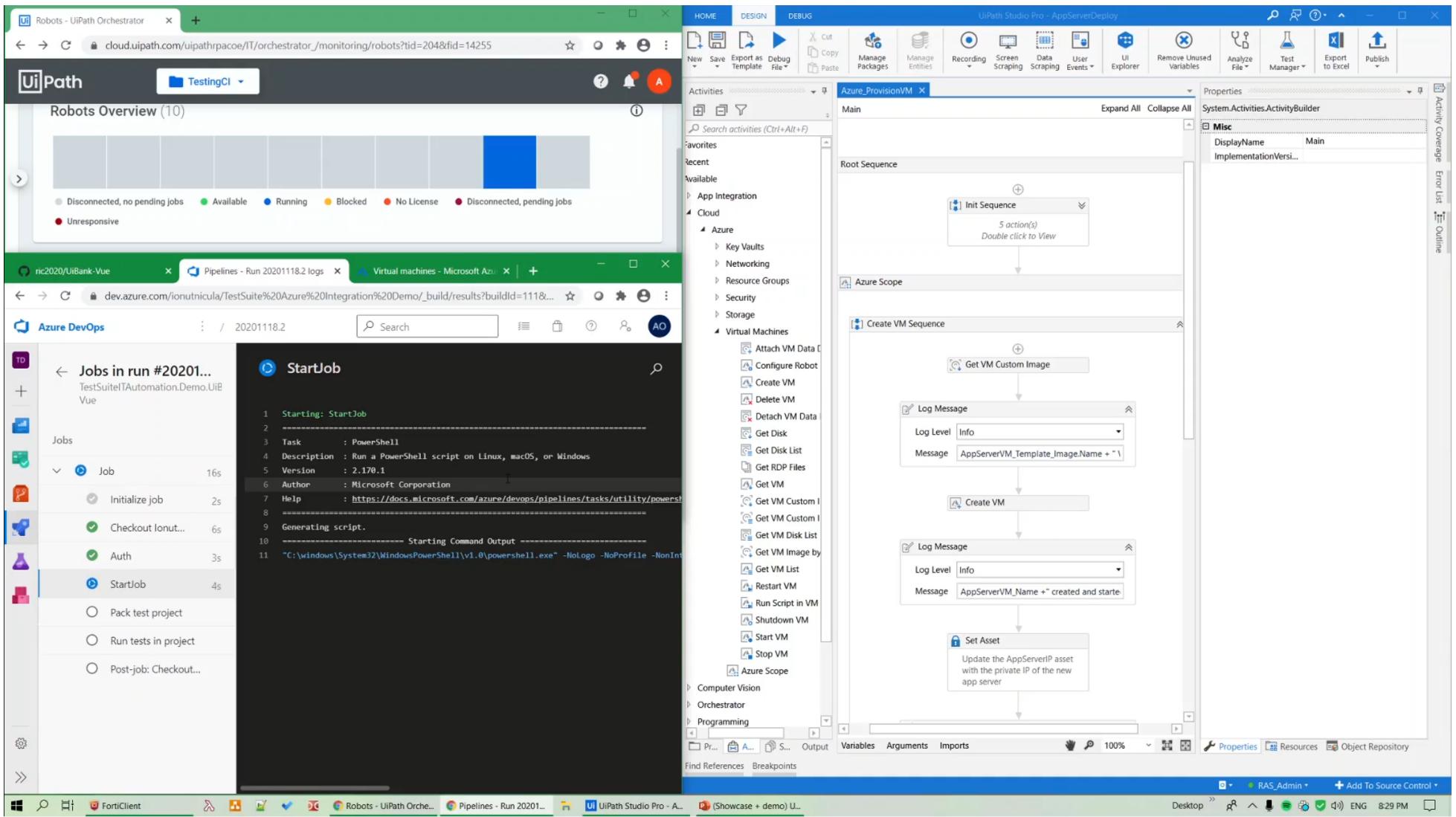
Transparent

easy to understand & inspect business logic



CI / CD and Continuous Testing

<https://www.youtube.com/watch?v=eOHF89tSxTk&feature=youtu.be>



Case Study UiPath





Companies use the out-of-the-box IT Automation RPA capabilities for infrastructure resources provisioning and management, service desk tasks, user on & off boarding, UiPath Robot on-prem and cloud auto scaling.

UiPath // internal use

Cost Control

- VMs policy-based availability (cloud & on-prem)
 - Nightly Power Off
 - Daily Power On
 - On-demand (at h. level)

Security Orchestration

- VM attacker IPs blocking in Azure Network Security Groups
 - ITSM integration for Audit
 - Automated end to end

ITSM

- Office 365 distribution lists user membership management
- Employee On & Off-boarding
- Office 365 User mailbox config
 - Shared + forwarding

Workflow Solutions

Workflow Solutions



Workflows samples & snippets that enable organizations from all industries to accelerate the automation of their IT ecosystem in the areas of *Cloud, Server Virtualization, User Management, Security, Storage, Networking and more.*

Identity Services and User Management

IT Infrastructure and Services Management

Cloud Security Orchestration

Cloud Migration

IT Automation Integrations via SDKs / APIs / Connectors / Ui drivers



Powershell,
Terminal



C#, VB,
Java



Python



MS Hyper-V



Citrix
XenServer



VMware
vCenter, ESX



Azure



Virtual
Machines



Identity
Services



Networking



Storage



Databases



Security



Atlassian



SAP

+ more



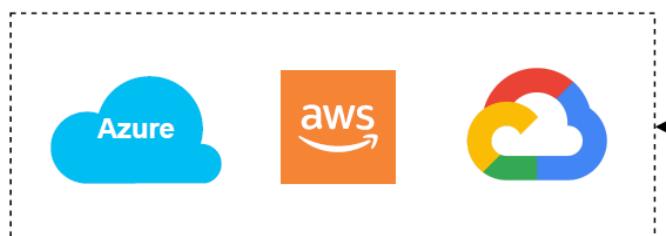
ServiceNow



Oracle

Infrastructure Management

Public Cloud

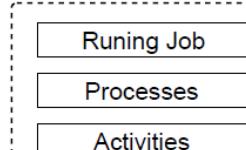
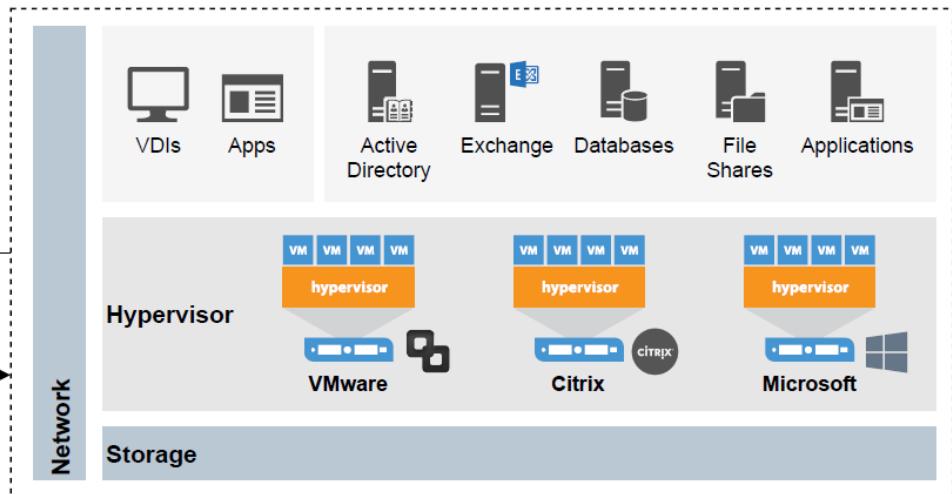


Internet

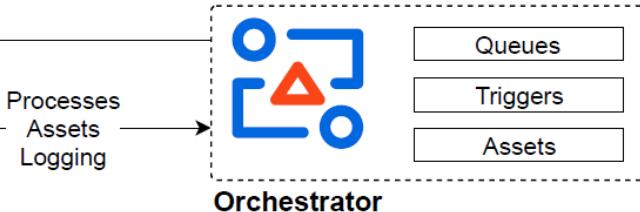
API req.

API req.

Datacenter



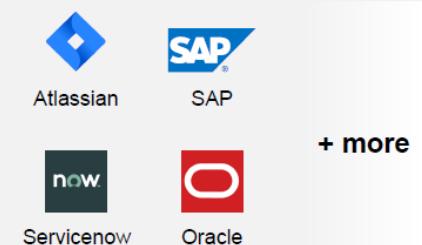
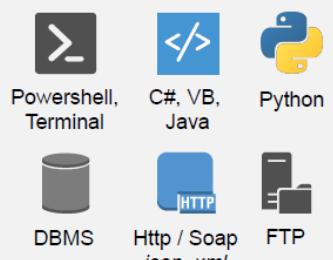
Robot



Orchestrator

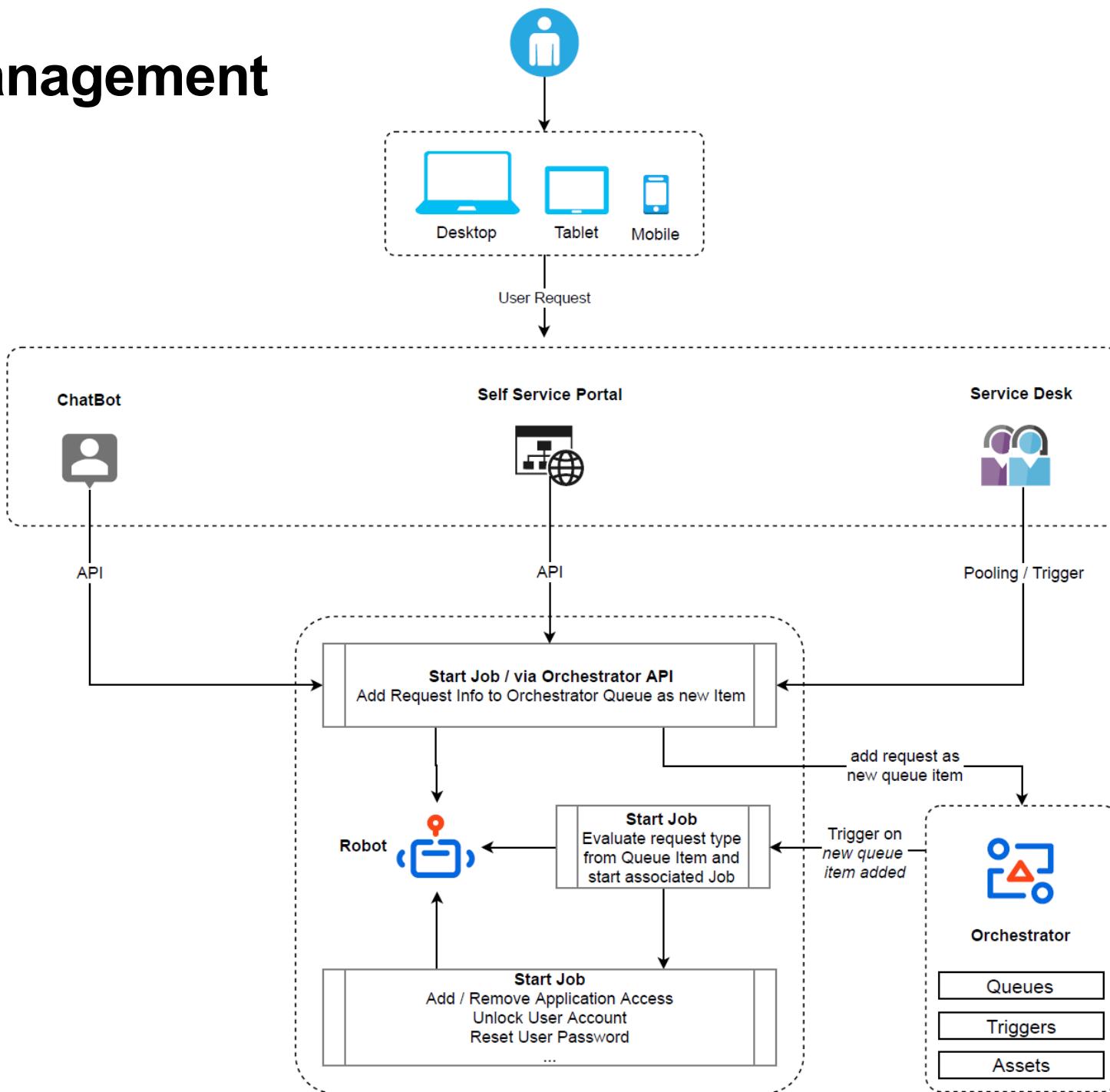
out-of-the-box IT Automation Integrations

Activities / Connectors / APIs / Ui drivers

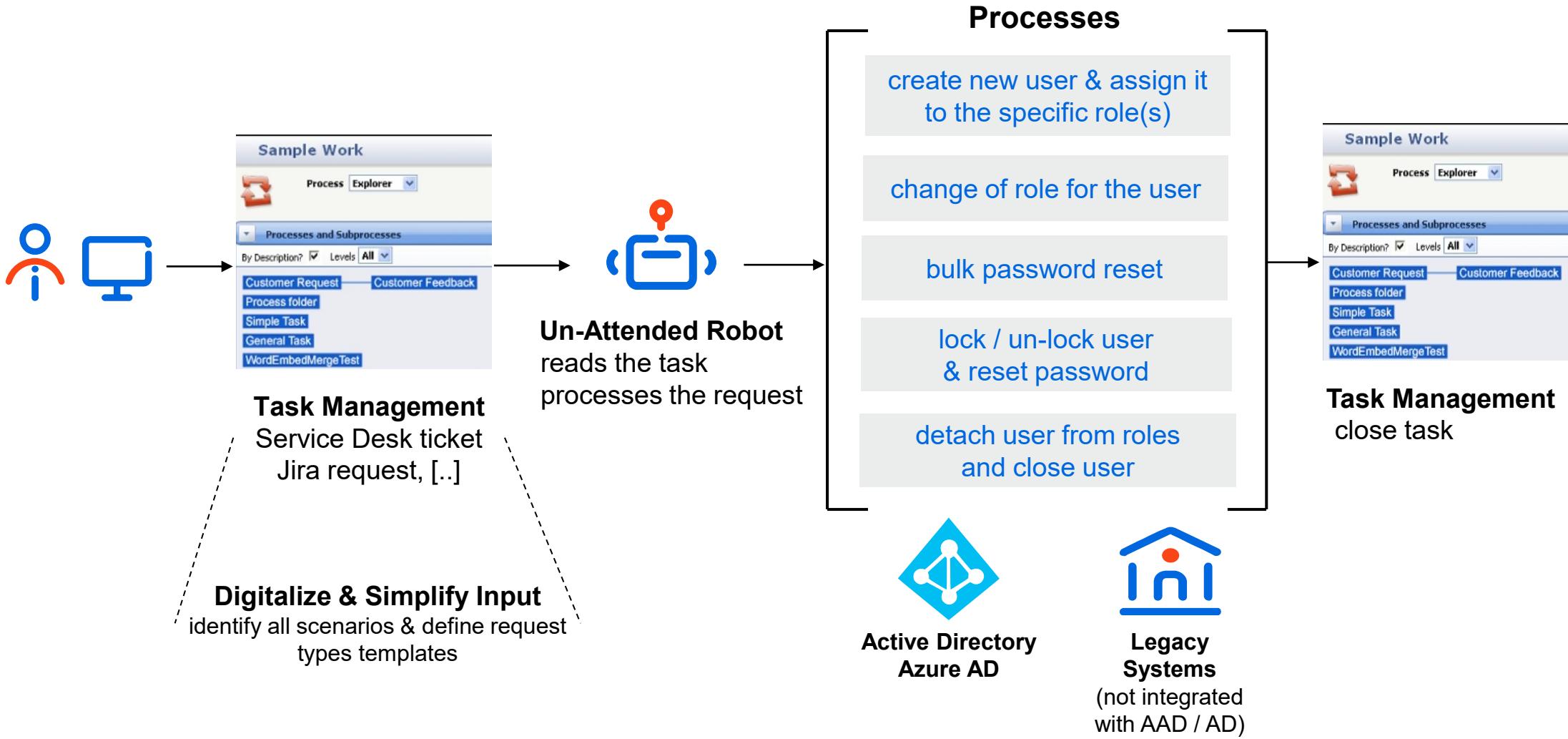


+ more

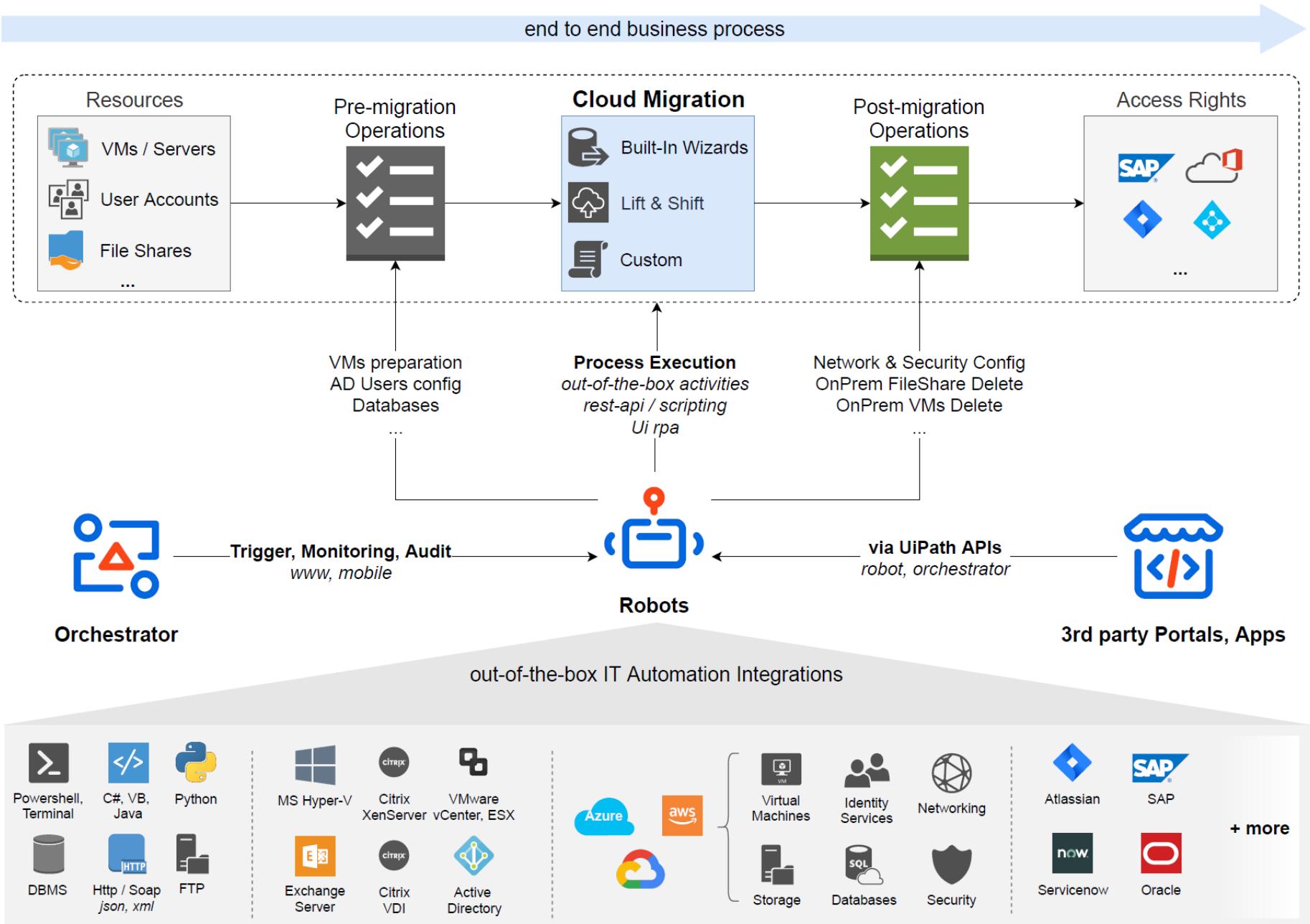
User Management



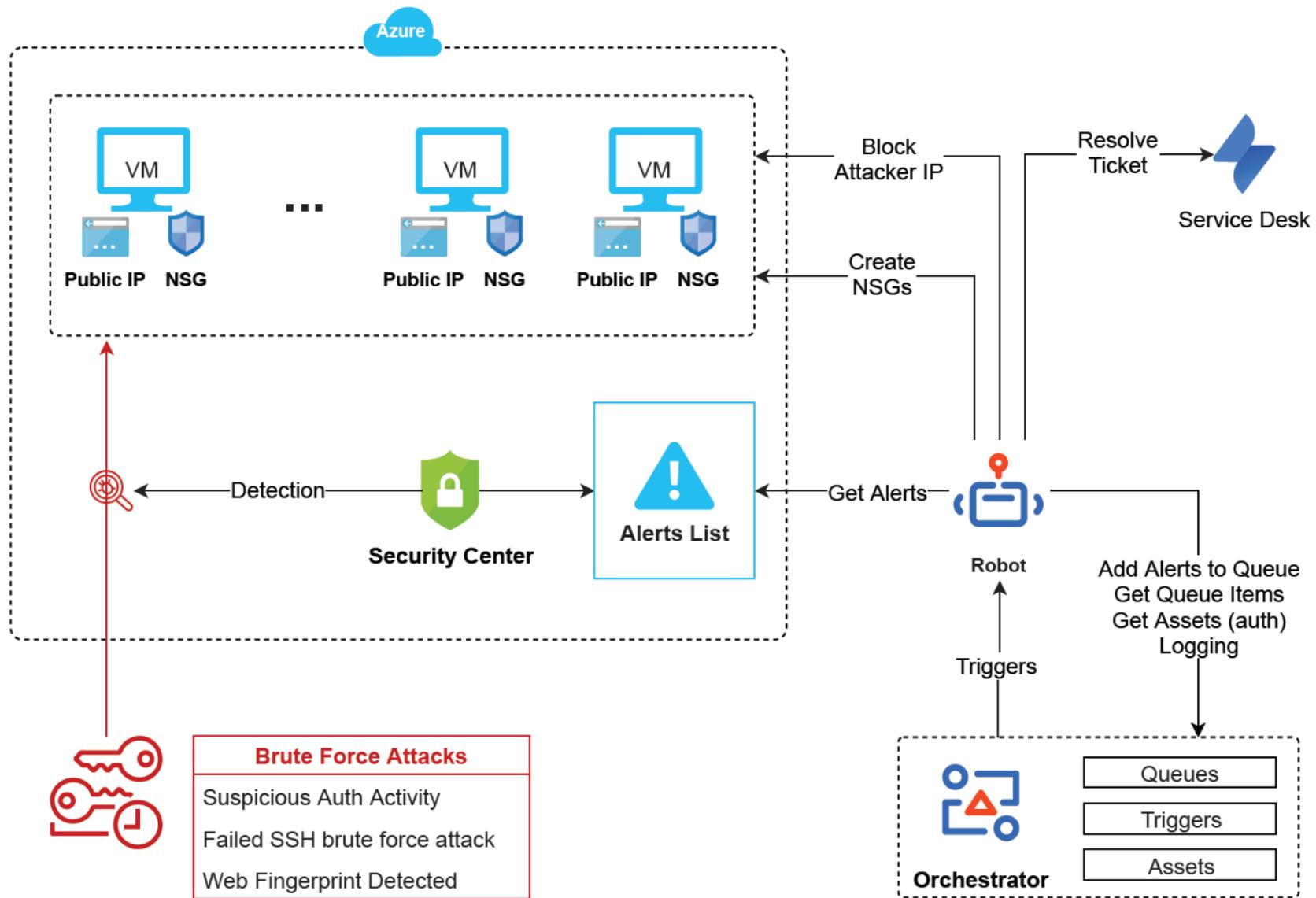
User Management. Unattended



Multi-Cloud Management & Migration



Security Orchestration (SOAR)



IT Automation for Public, Private & Hybrid Clouds



Community Academy Marketplace



Connect Home > Marketplace > Components > IT Automation for Public, Private & Hybrid Clouds



★★★★★

Version: 1.0 (View History)

Published: March 27th, 2020

Downloads: 3

Industry: Cross-Industry

Process:
Information Technology

Tags: active-directory,
Amazon AWS,
Azure Active Directory, citrix,
cloud, Datacenter,
Exchange Server, IT,
microsoft, Microsoft Azure,
Server Virtualization,
User Management, VMware

Download

Bookmark

Community
Support

Report A Bug

IT Automation for Public, Private & Hybrid Clouds

Solution

Description

Media (6)

Reviews

Questions

Summary: Workflows that enable organizations from all industries to accelerate the automation of their IT ecosystem in the areas of Cloud, Server Virtualization, User Management, Security, Networking and more.

UiPath's vision for the "Automation First" era has led to the addition in its market-leading Enterprise RPA Platform of dedicated official out-of-the-box IT Automation capabilities that empower all companies to take their Digital Transformation to the next level. Official activities packs:

- Active Directory
- Azure Active Directory
- Microsoft Azure
- Amazon Web Services (AWS)
- VMware vCenter ESXi
- Citrix Hypervisor (XenServer)
- Exchange Server

The IT Automation focused solution comprises four components:

1. Identity and User Management
2. IT Infrastructure and Services Management
3. Cloud Security Orchestration
4. Cloud Migration

..that offer a strong value proposition to all levels:

Details

Producers



Andrei Oros

Product Management & Strategy,
Engineering at [UiPath](#)

UiPath UiPath



Benefits

The solution can accelerate your IT Automation projects with out-of-the-box ready to use workflow samples and snippets.

Compatibility

UiPath Studio 19.10+

Dependencies

UiPath.Azure.Activities >= 1.1
UiPath.AmazonWebServices.Activities >= 1.0
UiPath.VMWare.Activities >= 1.0
UiPath.Citrix.Activities >= 1.0
UiPath.ActiveDirectoryDomainServices.Activities >=



Get it from
Connect



Get it from
**Microsoft Azure
Marketplace**



Get it from
**Microsoft
AppSource**

<https://connect.uipath.com/marketplace/components/it-automation-for-public-private-and-hybrid-clouds>

UiPath™

Use cases

demo

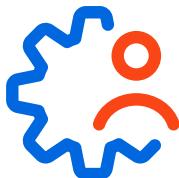
IT Automation common use-cases

(demo)



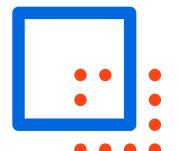
Cloud

- Cost Control: VMs nightly power-off / daily power-on / on-demand availability
- On Demand server management & deployment
- Security Orchestration



User Management

- Employee Onboarding & Application Access configuration
- User management: Password Reset / Unlock User Account
- Employee Offboarding: Delete or Disable User



Server Management

- Green Computing
 - VMs nightly power-off / daily power-on / on-demand availability
- On Demand server deployment (new / from template) + management
 - *IT Automation + Testing Automation = ❤️*

About UiPath



A Leader in the 2020 Gartner Magic Quadrant for Robotic Process Automation

For the second consecutive year, UiPath is placed highest for its ability to execute

*"In the second year of this Magic Quadrant, the bar has been raised for market viability, relevance, growth, revenue and how vendors set the vision for their RPA offerings in a fluid market."**

* Source: Gartner, "Magic Quadrant for Robotic Process Automation," Saikat Ray, Arthur Villa, Cathy Tornbohm, Naved Rashid, Melanie Alexander, July 27, 2020

Magic Quadrant for Robotic Process Automation



Source: Gartner (July 2020)

This graphic was published by Gartner, Inc. as part of a larger research document and should be evaluated in the context of the entire document. The Gartner document is available upon request from UiPath. Gartner does not endorse any vendor, product or service depicted in its research publications, and does not advise technology users to select only those vendors with the highest ratings or other designation. Gartner research publications consist of the opinions of Gartner's research organization and should not be construed as statements of fact. Gartner disclaims all warranties, expressed or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose.

A Forrester Wave Leader

Highest Scores in Current Offering, and Highest Possible Scores in Strategy and Market Presence

“References report that UiPath will go the extra mile to meet a client's need and cite the transparent and innovation culture as a plus.

They also applaud the low cost of getting started, the well-organized partner channel, overall product stability, and strong security.”

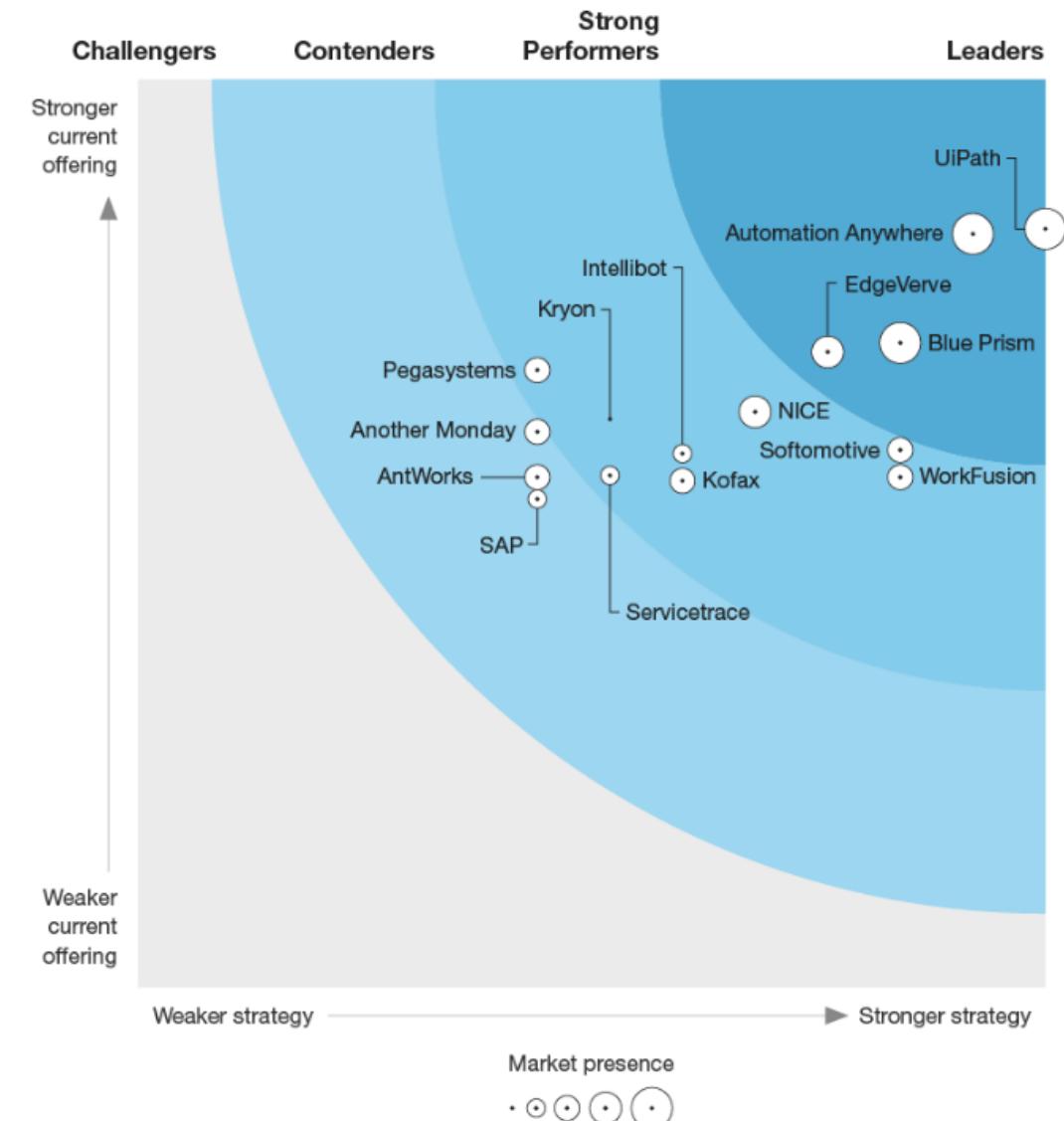
Source: ForresterWave™:RoboticProcessAutomation,Q42019

FIGURE 1 Forrester Wave™: Robotic Process Automation, Q4 2019

THE FORRESTER WAVE™

Robotic Process Automation

Q4 2019

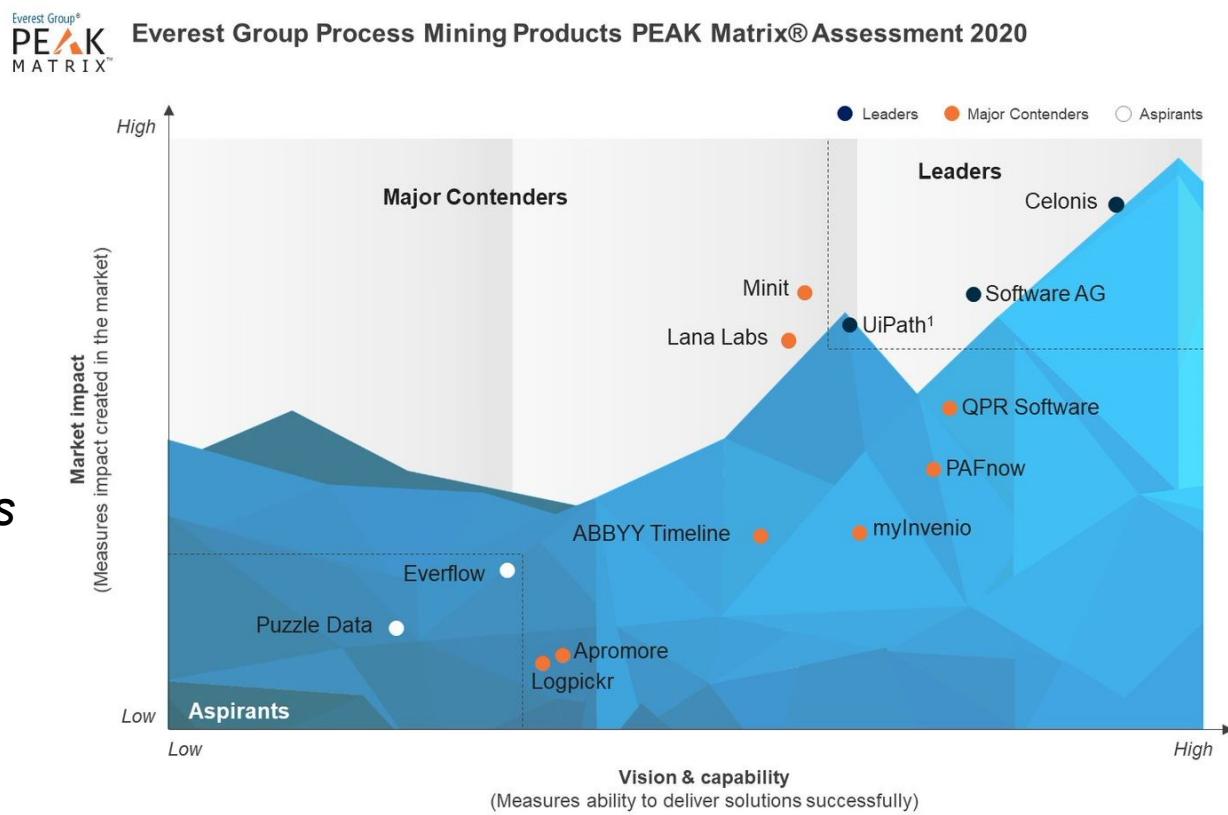


A Process Mining Leader

Everest Group PEAK Matrix® for
Process Mining Technology
Vendors 2020



[...] its product development strategy is now more focused toward helping enterprises discover automation use cases and accelerate their automation journeys."



¹ UiPath Process Mining (formerly ProcessGold)

Business Partner Ecosystem Spans Globally and Locally

Global



Cognizant



Deloitte



KPMG

Americas



Japan



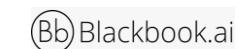
EMEA



India



Asia Pacific



600+ business partners that help with the implementation of RPA

Thank you

andrei.oros@uipath.com

