Out-of-the-box IT Automation

Andrei Oros
Michael Porter – org. value chain

Support Activities
- Firm Infrastructure
- Human Resources Management
- Technology Development
- Procurement
  - Inbound Logistics
  - Operations
  - Outbound Logistics
  - Marketing & Sales
  - Services

Primary Activities
- Operations
- Marketing & Sales
- Services
- Inbound Logistics
- Outbound Logistics

IT evolution & integration

Digital Transformation

Gartner
IT Automation
Holistic Vision

RPA
IT Testing
Task Process
Workflow
BPM

Attended Unattended
Long Running Approval Persistence
Cognitive AI integration

Trends Generations (academia phd research, Andrei Oros)
Challenges facing IT leaders

- Technology and process optimization
- Technical debt and legacy systems
- Growth
- Outsourcing
- Security and Privacy
- Governance vs Self-service
- Compliance and regulation
- Ever tightening SLAs and Performance Metrics
The UiPath Enterprise RPA Platform
Loved by Users, Valued by Business, Trusted by IT
Deployment

Your entire robotic workforce is managed, controlled and monitored by UiPath Orchestrator, the browser-based server application that centralizes in one secure place your entire enterprise operation.

All our product’s components can run on both physical or virtual machines.

ON-PREMISES
PRIVATE CLOUD
PUBLIC CLOUD
UIPATH CLOUD
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)
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

2019-2020
• Cloud
• Server Virtualization
• Identity Services
• Workflow Solutions

2021
• Desktop & App Virtualization
• more Integrations

Cloud. Azure & AWS & GCP
• Cloud Resources & Services provisioning and management
  • Virtual Machines
  • Storage
  • Networking
  • + Robot configuration (autoscaling)

Identity. Active Directory & Azure AD
• Generic AD Object ops
• Users
• Computers
• Groups

Exchange Server (administrative)
• Mailbox create, delete, enable, disable

Server Virtualization. VMware & Citrix & Microsoft
• Virtual Machines
• VM Snapshots
• Hosts
• Storage
+ Robot configuration (on-premise autoscaling)
DevOps. **Infrastructure as Workflow / Diagram**

- **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

Free from Official Feed (LTS)

Background Running (via SDKs)
Easy to get started


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.

Documentation

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

UiPath Academy

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

UiPath Forum

https://forum.uipath.com/c/dev/it-automation/
IT Automation Integrations via SDKs / APIs / Connectors / Ui drivers

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

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

<table>
<thead>
<tr>
<th>100%</th>
<th>80%</th>
<th>0%</th>
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<tbody>
<tr>
<td>Automated</td>
<td>AHT reduced</td>
<td>Error rates</td>
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</table>

**The challenge**

- 1600 requests/month
- AHT 3 min/transaction

6-month ROI

- Significantly improved SLAs
- Increased employee satisfaction

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
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.
Large Indian Bank

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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

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

1. GitHub repository for a Vue project.
2. Azure DevOps interface showing a job run.
3. Azure DevOps interface showing Start Job details.
4. UiPath interface showing processes and tasks.
5. Robot Auto Scaling deallocation with statuses.
7. Robot Auto Scaling deallocation with statuses.
DevOps. Infrastructure as Workflow / Diagram

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VMware, Citrix, Hyper-V

**Transparent**
easy to understand & inspect business logic
CI / CD and Continuous Testing

https://www.youtube.com/watch?v=eO HF89tSxTk&feature=youtu.be
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.

**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.

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

Identity Services and User Management

IT Infrastructure and Services Management

Cloud Security Orchestration

Cloud Migration
User Management. **Unattended**

**Processes**
- create new user & assign it to the specific role(s)
- change of role for the user
- bulk password reset
- lock / un-lock user & reset password
- detach user from roles and close user

**Task Management**
Service Desk ticket
Jira request, [..]

**Digitalize & Simplify Input**
identify all scenarios & define request types templates

**Active Directory**
Azure AD

**Legacy Systems**
(not integrated with AAD / AD)
Security Orchestration (SOAR)

- Detection
- Security Center
- Alerts List
- VM
- Public IP
- NSG
- Block Attacker IP
- Create NSGs
- Resolve Ticket
- Service Desk
- Add Alerts to Queue
- Get Queue Items
- Get Assets (auth) Logging
- Robot
- Triggers
- Queues
- Triggers
- Assets

Brute Force Attacks
- Suspicious Auth Activity
- Failed SSH brute force attack
- Web Fingerprint Detected
IT Automation for Public, Private & Hybrid Clouds

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 pack:

- Active Directory
- Azure Active Directory
- Microsoft Azure
- Amazon Web Services (AWS)
- VMware vCenter E5i
- 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:

Use cases
demo
IT Automation common use-cases

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
  - \textit{IT Automation} + \textit{Testing Automation} = \textbf{❤️}
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.”*

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

**Business Partner Ecosystem Spans Globally and Locally**

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<tr>
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<th>Americas</th>
<th>Japan</th>
<th>EMEA</th>
<th>India</th>
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<td>RPA Tech</td>
<td>Tech Mahindra</td>
<td>ncs</td>
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**600+ business partners** that help with the implementation of RPA
Thank you

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