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Robotic Process Automation

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What is RPA?

- Robotic Process Automation is…
  - A software which mimics human execution of desktop applications, usually for repetitive processes. It is controlled by business users (user friendly configuration), and governed by IT.
  - It is a new alternative to improve productivity, unlocking higher ROI than ERP implementations and shared services centers (offshoring) implementation
  - It is the fist step, and necessary foundation in the enterprise digital operation journey, before implementing cognitive, chatbots and artificial intelligence
  - Robotic Process Automation is not… A physical robot sitting at a desk performing tasks

What is RPA?

A subset of Business Process Service Delivery Automation (BPSDA). It refers to automation that interacts with a computer-centric process through the software's User Interface supporting the process.

By configuring software that will automate the activities or tasks previously performed by human beings.

Robotic automation aims to use a computer (a.k.a. robot) to manipulate existing application software (CRMs, ERPs, Help Desk and Claim applications) in the exact same way that a person works with those systems. This is the reason why RPA is commonly referred to as non-invasive integration.

RPA aims to ***replace*** *repetitive* and *no value* adding clerical tasks performed by humans, with a **virtual workforce of robotic FTEs**, transforming the human workforce into "**Uber Administrators,**" whose role is to make judgmental calls, handle exceptions and provide a valuable oversight, much more than they did before, while directly administering the services.

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Key objectives for implementing RPA

- Cost savings
- Improved customer experience
- Improved control (compliance)
- Rapid ROI
- Non-invasive technology
- Enhance Processes - Enhances process quality, compliance, security and continuity. RPA expedites processes, leading to an increase in throughput and a boost in overall productivity.
- Enhanced Activity Logging - RPA provides in-depth logging and reporting capabilities. All activities performed by robots can be logged and interpreted through customized reporting tools.

Expected Benefits

Accuracy
The right result, decision or calculation the first time)

Consistency
Identical process and tasks reducing the output variation

Audit trail
Fully maintained logs essential for compliance

Productivity
Freeing up manual resources for more value-added tasks

Elasticity / Flexibility
Instant ramp up/down to deal with spikes and troughs in demand

Staff retention
Allows focus shift towards more stimulating tasks

Reliability
24/7, all year around, full availability

“Right shoring”
Geographical independence allows “right shoring” – a viable alternative to offshoring

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RPA delivers substantial financial benefits, with organizations seeing up to 90%

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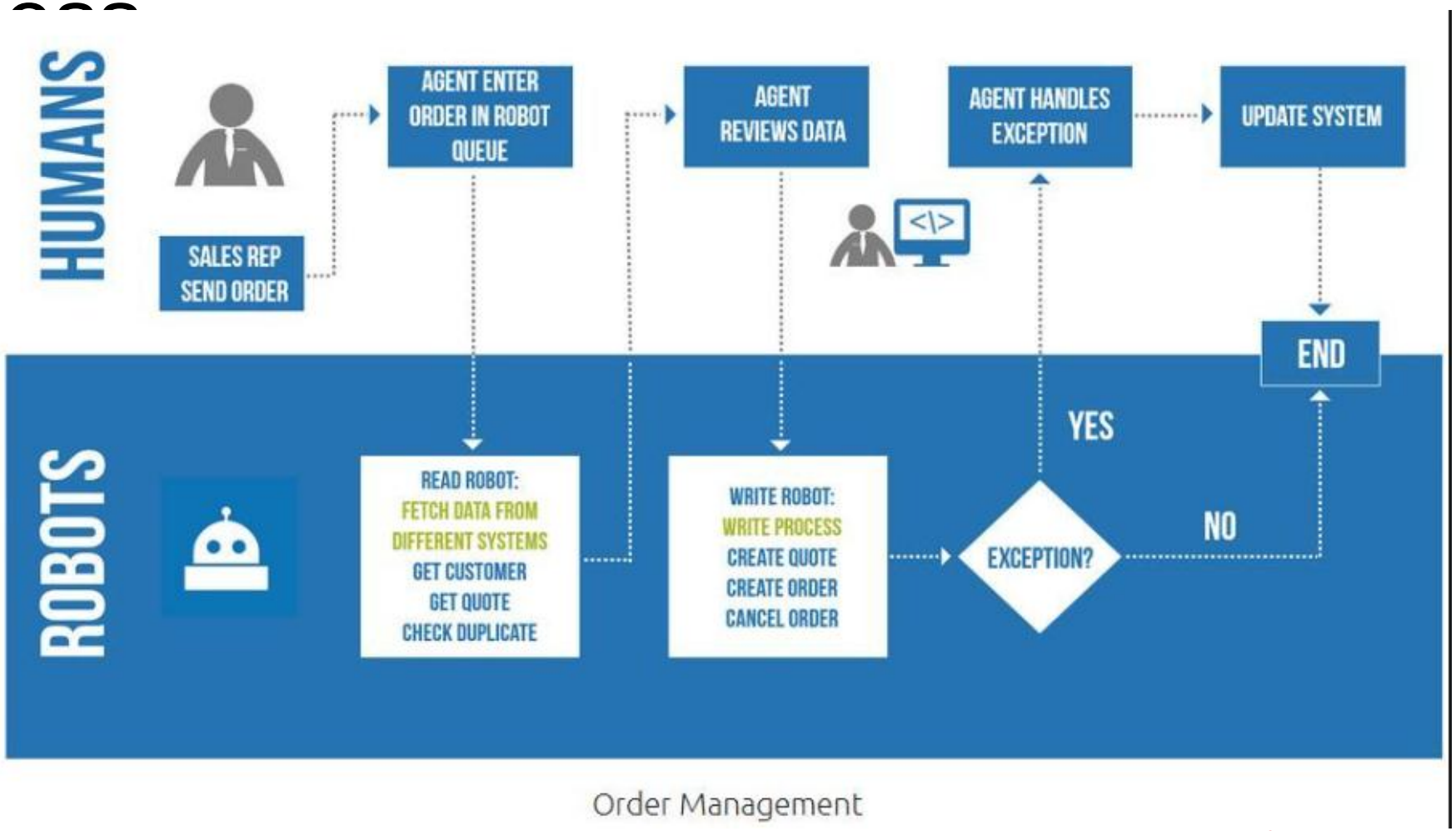
RPA frees your human resources from low value activities to focus on building the busin



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Why RPA and why now?

RPA rate of job transformation

Forecasts indicate RPA will transform up to 60% of work tasks in the sectors of management, business and finance, 48% in the professional sector and up to 41% in sales by the year of 2020 (Forester research 2015)

	2015	2016	2017	2018	2019	2020
Manual business and financial	9%	19%	29%	40%	51%	64%
Professional and related	8%	17%	27%	37%	48%	60%
Sales and related	7%	14%	23%	32%	41%	52%
Office and admin support	7%	15%	23%	32%	42%	52%

Activities suitable for RPA

The higher the transaction volume, the higher the ROI potential of RPA.

In some cases, low-volume tasks can also be a good fit if there are needs for reducing human error to improve compliance and to manage risks.

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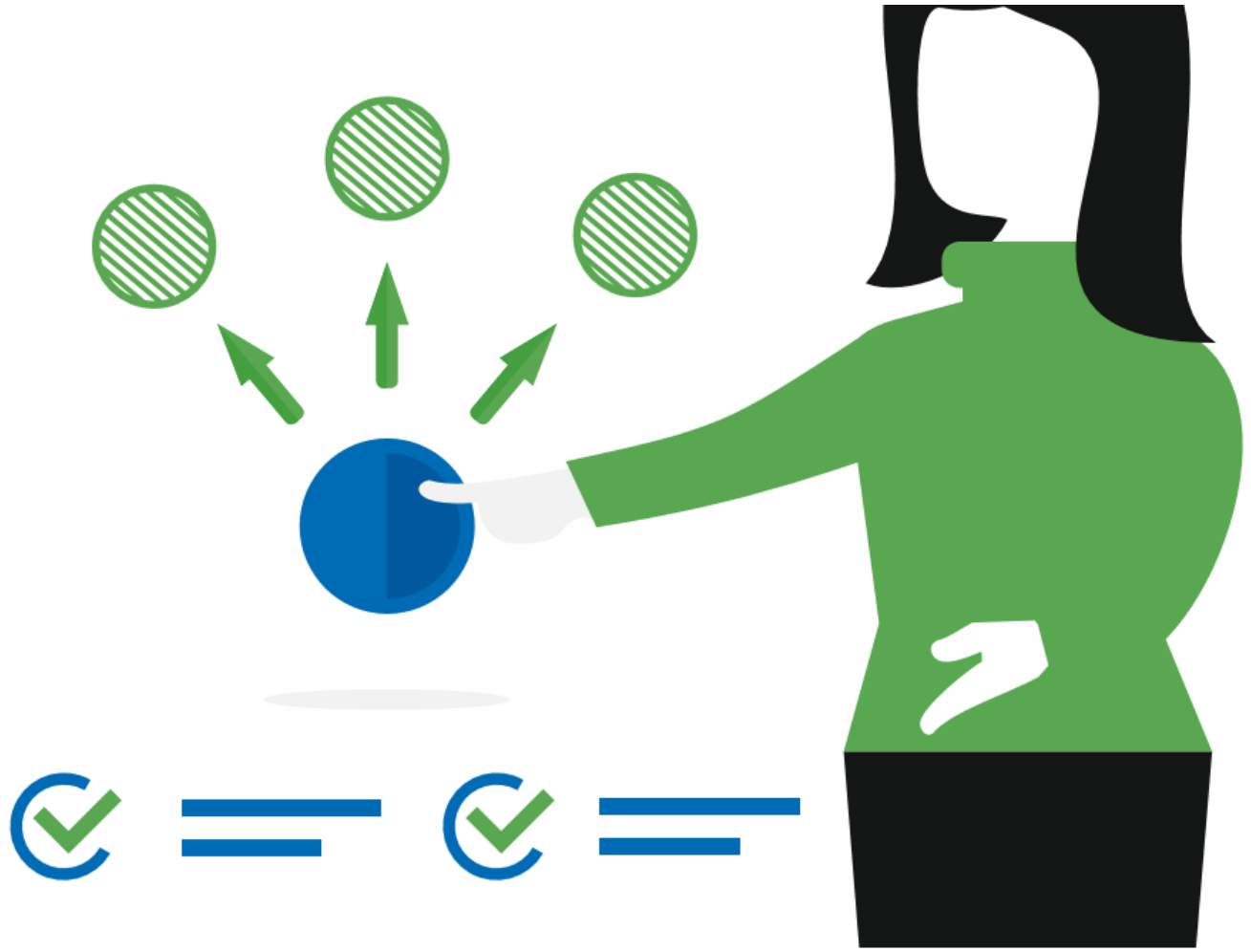
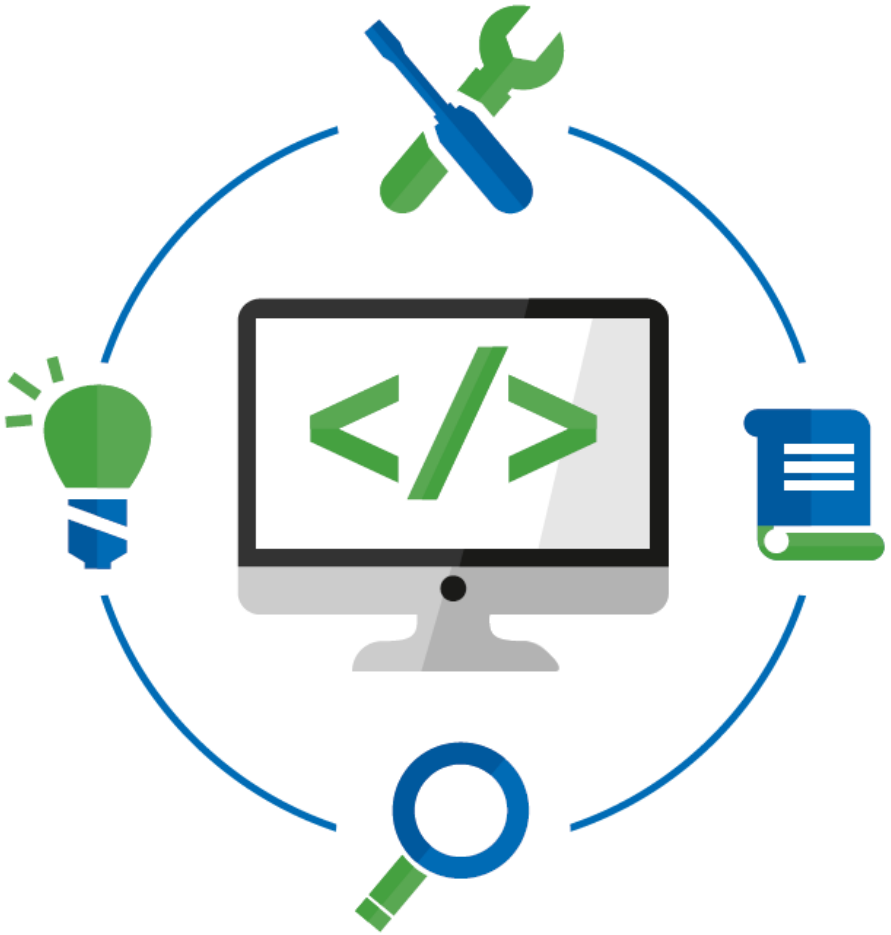
Limited Variations

Tasks with limited variations and fewer exceptions are a great fit.

Consider case management or enterprise workflow solutions for more dynamic processes.



Stable and well defined process



Tasks that are mature and stay relatively unchanged are a good fit.

Processes that change often result in extra overhead and defeat the purpose of automation.

Low system change

Processes that require limited or no changes to existing systems are a good fit.

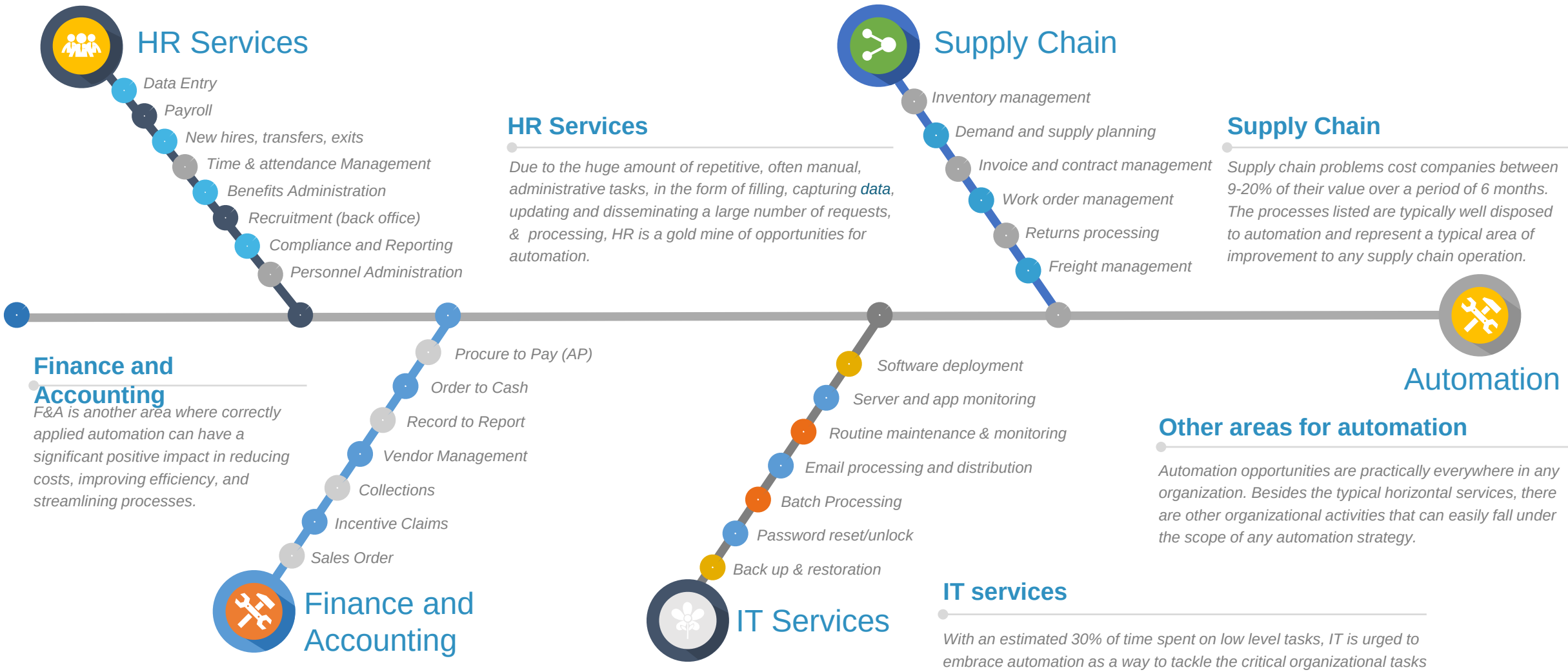
If the underlying system needs change then it defeats the purpose of RPA as a non-invasive technology.

Structured DATA

Tasks that require working with structured data and readable electronic inputs (Excel, Word, PDFs, etc.) are a good fit.

Consider adding optical character recognition (OCR) and other AI technologies to the mix if the data is unstructured or in a format that is not readable (like images).

Processes every company should automate



HR Services

Due to the huge amount of repetitive, often manual, administrative tasks, in the form of filling, capturing data, updating and disseminating a large number of requests, & processing, HR is a gold mine of opportunities for automation.

Supply Chain

Supply chain problems cost companies between 9-20% of their value over a period of 6 months. The processes listed are typically well disposed to automation and represent a typical area of improvement to any supply chain operation.

Finance and Accounting

F&A is another area where correctly applied automation can have a significant positive impact in reducing costs, improving efficiency, and streamlining processes.

Other areas for automation

Automation opportunities are practically everywhere in any organization. Besides the typical horizontal services, there are other organizational activities that can easily fall under the scope of any automation strategy.

IT services

With an estimated 30% of time spent on low level tasks, IT is urged to embrace automation as a way to tackle the critical organizational tasks currently consuming most of their time, thus being able to focus on the initiatives that require innovative thinking.

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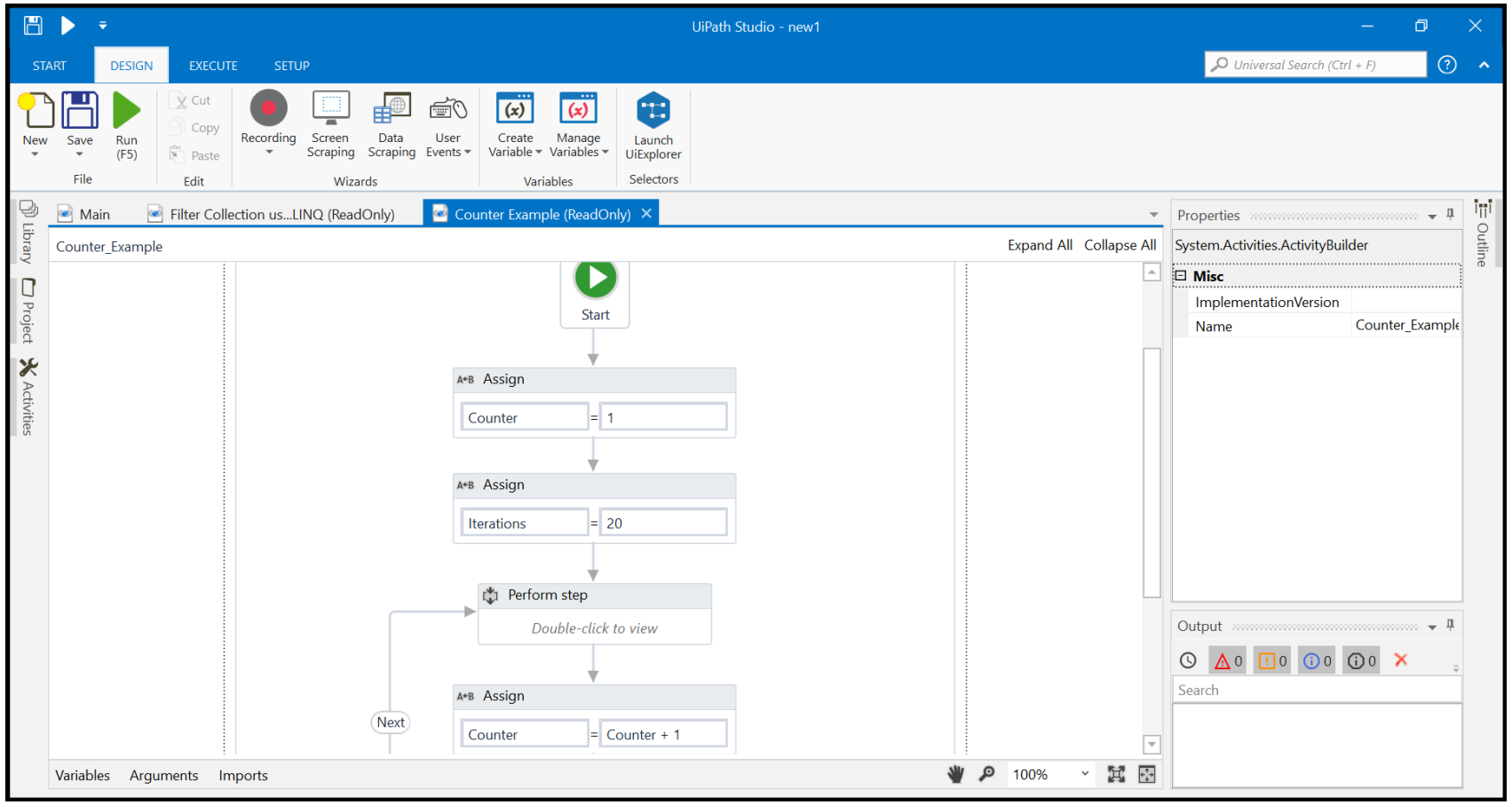
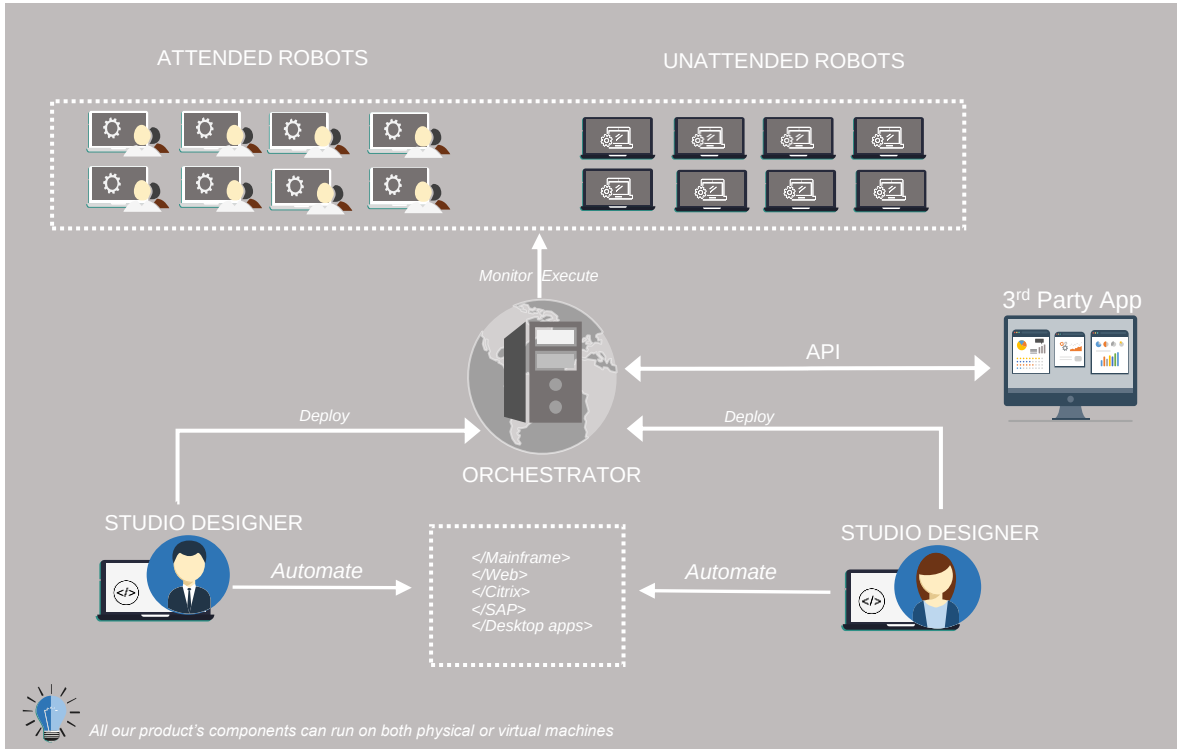
UiPath RPA Suite



UiPath RPA Suite



1. The Attended Robot: Delivers lower costs and higher performance with front office agent-supporting automation features.

2. The Unattended Robot: These robots utilize unattended automation to run high back office transaction volumes in batch mode.

3. UiPath Orchestrator: An enterprise architecture server platform supporting process management, centralized logging, reporting, auditing & monitoring tools, remote control, centralized scheduling, queue/robot workload management, and asset management.

4. UiPath Studio: Enables users to automate with highly intuitive tools (not code) with process recorders, drag & drop widgets, & best practice templates.

UiPath Features

Secure Processing

- UiPath supports integration with the SSO mechanism & PKI certificates, smart cards, and soft tokens through our Attended Robots where a robot can be programmed to stop and ask for user input.
- The robots will always use the user's Windows account to execute all actions – allowing for full traceability of all robot activities.
- It can fully integrate with AD and support controlled access to different AD groups.
- It can group processes and assign different rights to specific people.
- We fully support SSL/HTTPS. We use AES-256 for encrypting data at rest and HTTPS to secure data in transit.

UiPath is natively capable of:

1. Logging onto web/enterprise applications
2. Receiving/Opening/Sending emails and attachments
3. Processing requests into applications
4. Moving files and folders
5. Scraping data from the screen/web
6. Word or Excel based automation
7. Connecting to system APIs
8. Following "if/then" decisions and rules; performing simple or complex decisions
9. Merging data from multiple places
10. Making calculations; performing complex algorithms
11. Copying and pasting data
12. Filling in forms
13. Reading and writing to databases
14. Using structured, repeatable, computer-based tasks
15. Searching, collating or updating information
16. Accessing one or more systems to complete a process
17. Optionally, allowing advanced data processing by leveraging using scripting/programming languages
18. Creating and exposing web services back to BPM/ERP
19. Extracting and reformatting data into reports or dashboards
20. Extracting structured data from documents

Credential Management

- The credentials are stored encrypted in the server database. They are sent through an HTTPS channel.
- When the Robot receives the start notification (command), it goes to the assets web service, authenticates with the Robot ID and asks for the login credential, used to open up a Windows session on the client computer.
- The other credentials, necessary to authenticate to automated applications, can be requested by the workflow through dedicated activities like "Get Robot Credential." When executing the activity "Get Robot Credential," the Robot authenticates to the configuration service with its Robot ID and requests the credential by name.
- The Configuration service authorizes the Robot using the Robot ID and authenticates the Robot using the user name (the workflow is run under a username, and the HTTPS call contains the user's identity as well - hence it can be authenticated through the active directory).
- When a credential is requested by a robot, the configuration service searches the database for the credential whose name was requested and, if found, decrypts the credential and sends the required information to the Robot. The credential is a 2-field structure: a string representing the username, and a SecureString representing the password. The SecureString is of a special .NET Framework type, which is encrypted within the framework. It is sent encrypted to the Robot. The Robot will access its unencrypted form by using special functions defined in .NET to access its contents.

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Other Features

Application Interfaces

UiPath supports UI Automation interactions with Windows Forms, WPF, Web, Java, Delphi, Win32, FoxPro, Adobe Reader & Acrobat, Green screen, SAP, Oracle apps, Silverlight, or any web application on IE and Chrome browsers. UiPath comes with connections to these apps, thus being able to automate them as a normal Windows application.

Besides UI Automation interfaces, application integration interfaces for Excel, CSV, PDF, Databases, Web Services, Email (Gmail, Outlook, Exchange), PowerShell, XPS, FTP, SNMP are available. Reading and writing from Office documents is fully supported.

UiPath speaks .NET natively. The internal type system is .NET. A user can call a UiPath workflow from their .Net app and simply pass the .NET objects as variables to our workflow.
SAP, mainframes, legacy and particularly Citrix (as a transport layer) are huge use cases for UiPath.

UiPath comes with connectors (bridges) for Terminal Emulators (We automate Terminal Emulators 3270 and 5250 standards), Email (through POP3, IMAP, SMTP and Exchange), Silverlight and *Database Connectivity.

Maintenance

The Orchestrator (server) comes with pre-defined and customizable roles to allow the monitoring, review and management of robots.
On the server side, there are several pre-defined roles:

- The administrator can change the settings, add or delete robots, and assign or update packages to robots (a package is an automation process represented by a set of workflow files - a project).
- The reviewer can add/update/delete assets, manage robot groups, assign or un-assign processes to robot groups and manage the queues. He can also do what the Monitor is able to do: check process status and robot's logs.

Essentially you can combine different permissions into custom roles. Each role can be customized to have a different set of permissions. Roles can be defined and customized by the Orchestrator Administrator.

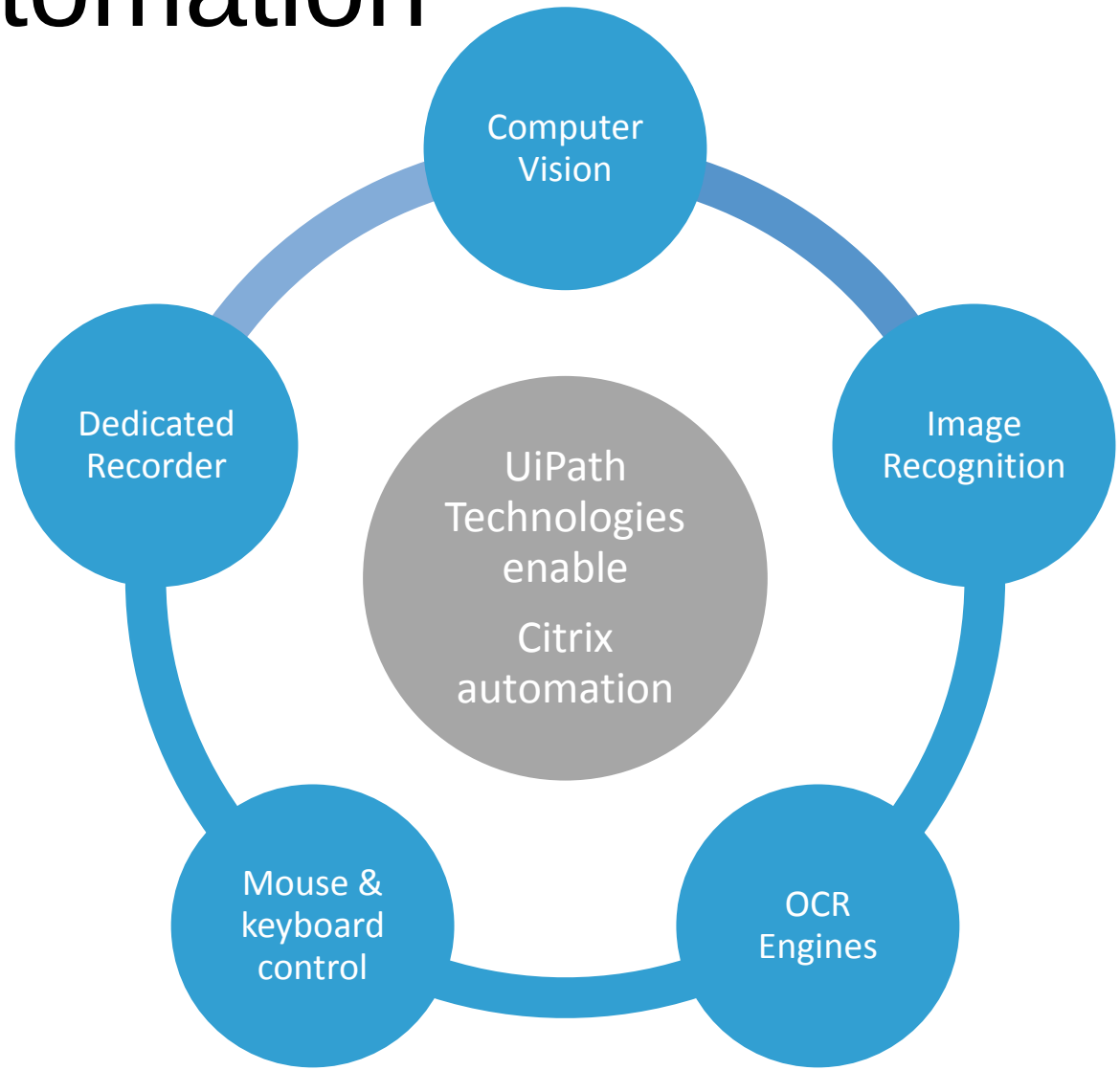
In addition to integration via API (if web service or other integration type is possible) we automate third party UI. UiPath identifies logical UI elements by gathering all relevant attributes of the element and its containers in a single string dubbed as the “selector.”

*Database access is supported natively through Microsoft OLEDB Connection, but the connection driver supplied by the database manufacturer must be independently installed.

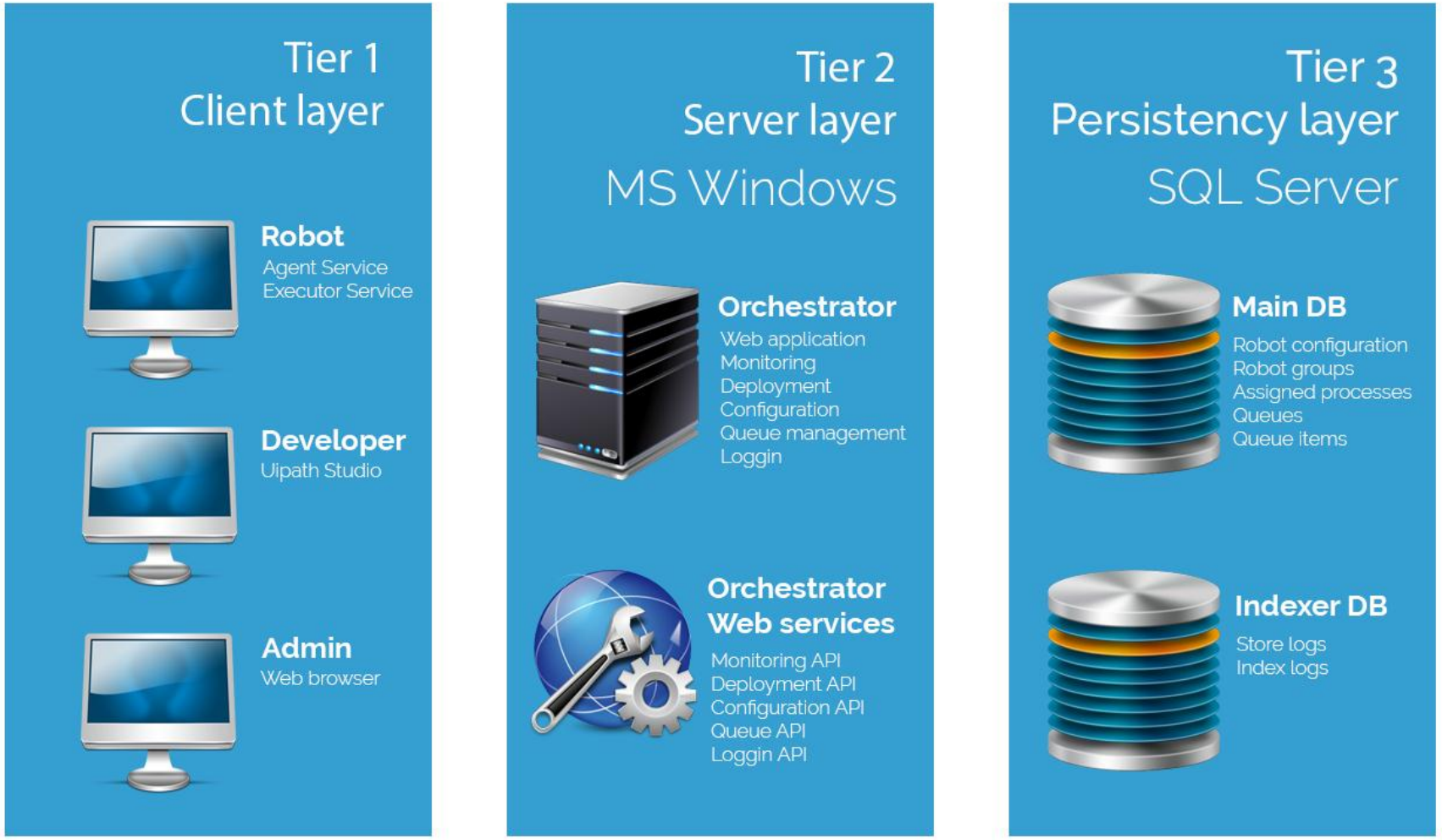
Remote Desktop Automation

UiPath went to great lengths to make Citrix automation possible.

- Computer Vision: used in Citrix the technology is most valuable as it allows to identify elements with ease on Citrix UI and anchor fields on them while having superior accuracy.
- Image Recognition: UiPath features a powerful engine that is optimized to find images on screen in under 100 milliseconds.
- OCR (optical character recognition) for text recognition
- Use of mouse, keyboard, hotkeys and clipboard
- Dedicated integrated recorder enables easy & user friendly automation on Citrix



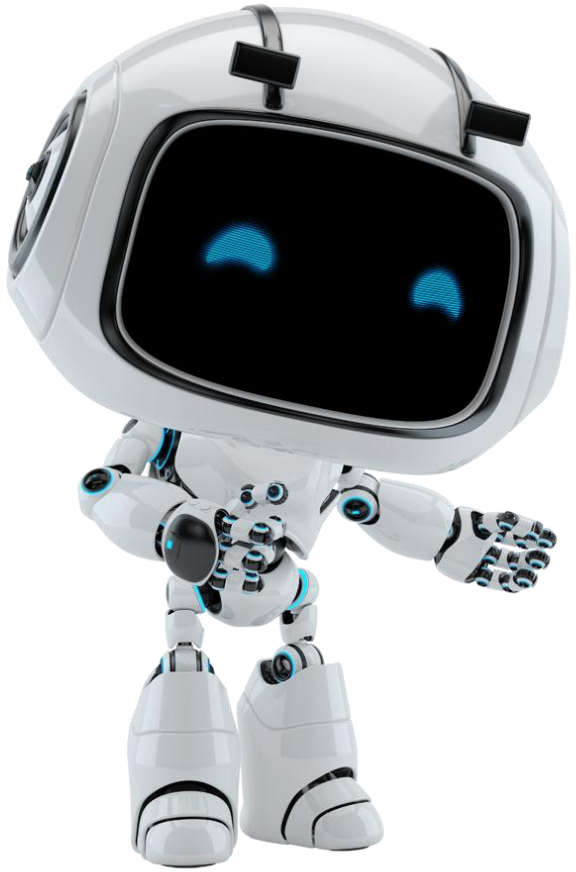
UiPath Server Architecture



RPA Workshop (afternoon session)

- Application Expense Report (Demo)
- Data scraping currency rate from WEB (Demo)
- UCB Policy Rules Management (demo)
- UCB Policy Rule Management (POC Recording)
- Phone Assistant (Demo) – part of case exchange andtools automation
- Lufthansa Technik Work hours (POC Recording)
- Data Entry Quality Assurance (POC Recording)

UiPath Customers



Thank you!

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