EXECUTIVE AUTOMATS

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1. Introduction

Executive Automats (EA) is a tool developed by XPLUS SA, a Microsoft Gold ERP Implementation Partner and Microsoft Inner Circle Member (which represents the top 1% of Microsoft Dynamics partners in terms of sales performance).
We developed Executive Automats to help us provide faster, more predictable Implementations, Rollouts, Upgrades, and New Releases for Dynamics 2012 (and now D365 for Finance and Operations).

After 2 years of using EA as a competitive advantage, our clients began asking about it. After several successful cases we decided to bring it to the market. Nowadays customers around the globe are using EA to improve and speed up code developments and security permission creation, assignment, and optimization. Executive Automats automates functional and regression testing, performance testing, security permission set-up and optimization, as well as the generation of process documentation.

Companies around the world are benefiting from Executive Automats!

2. Why Executive Automats

Rollouts, new releases, implementations, updates, and code developments all require a large amount of testing. Unfortunately, manual testing requires too much time and too many resources to properly and thoroughly test all new releases, rollouts, updates, upgrades, and code developments that occur over the course of an ERP system's lifetime.

The overall idea and effect of Executive Automats is to increase the quality of code development, decrease the time and resources needed for rollouts, new releases, implementations, and updates, and give you important information that will help you optimize crucial areas of your business.

2.1. Testing takes too much time

- With EA anyone that knows a process can record it and create a script. No coding skills needed, but if you are a developer you can do even more with EA.
- Once you record a process just 1 time, you can use it over and over again for many different purposes.

2.2. Maintaining test scripts is difficult

- Once you've recorded your business process, you can easily edit the script to add/remove/change steps or extend it with Number Sequences, Variables, Excel Sheets, and Expressions.

2.3. Test scripts need to be recorded over and over again

- The reusability of scripts with EA is great, because it significantly reduces the time required for script maintainace. You don't need to record a new script every time something changes in the process.

2.4. Users have too much/little system access and security roles are a mess

- With EA you are able to generate EXACT roles, duties, and privileges and see the absolute lowest level of license needed to perform an action in a process.
- Your users have just the right security access they need and it's easy to keep it this way

2.5. Running performance tests is difficult and requires a lot of resources

- With EA performance testing is easy and it mirrors real user actions
- You can schedule individual scripts or batches of scripts to run automatically whenever you need i.e. at night and *simulate 1000's of simultaneous users stressing your system*

Find out how your system performs under stress, before the stress

Set-up precise security permissions 4x faster

VSTS Integratation (Azure DevOps)

65% time savings on automated testing

3. Scripting

The time and resources needed to simply create and maintain scripts using traditional testing techniques is a common problem in today's ERP environment. Constantly starting from scratch even if you just need to add 1 step to a process.

Our idea was to make everything about scripts as easy as possible. Anyone can record a process. Any recorded process can easily be changed, extended, updated, and re-used (no developers needed, but developer skills can, of course, allow you to do more with EA). Need to add an extra step to a process? With EA it is no problem.

One recorded process can be used stand alone for all of EA's features (See "Features") or be linked to other processes to form complete, end-to-end test scenarios

3.1. Creating Scripts

- No developers are needed to create scripts with EA. All you need is someone that knows the process to hit record before they perform the process.

- The steps of this recorded process are displayed to you, and you can easily adjust them. See "Modifying scripts".

- Once you have the script ready, you simply compile it (creation of script name and execution of the process) and run it with whichever Execution Mode you wish.
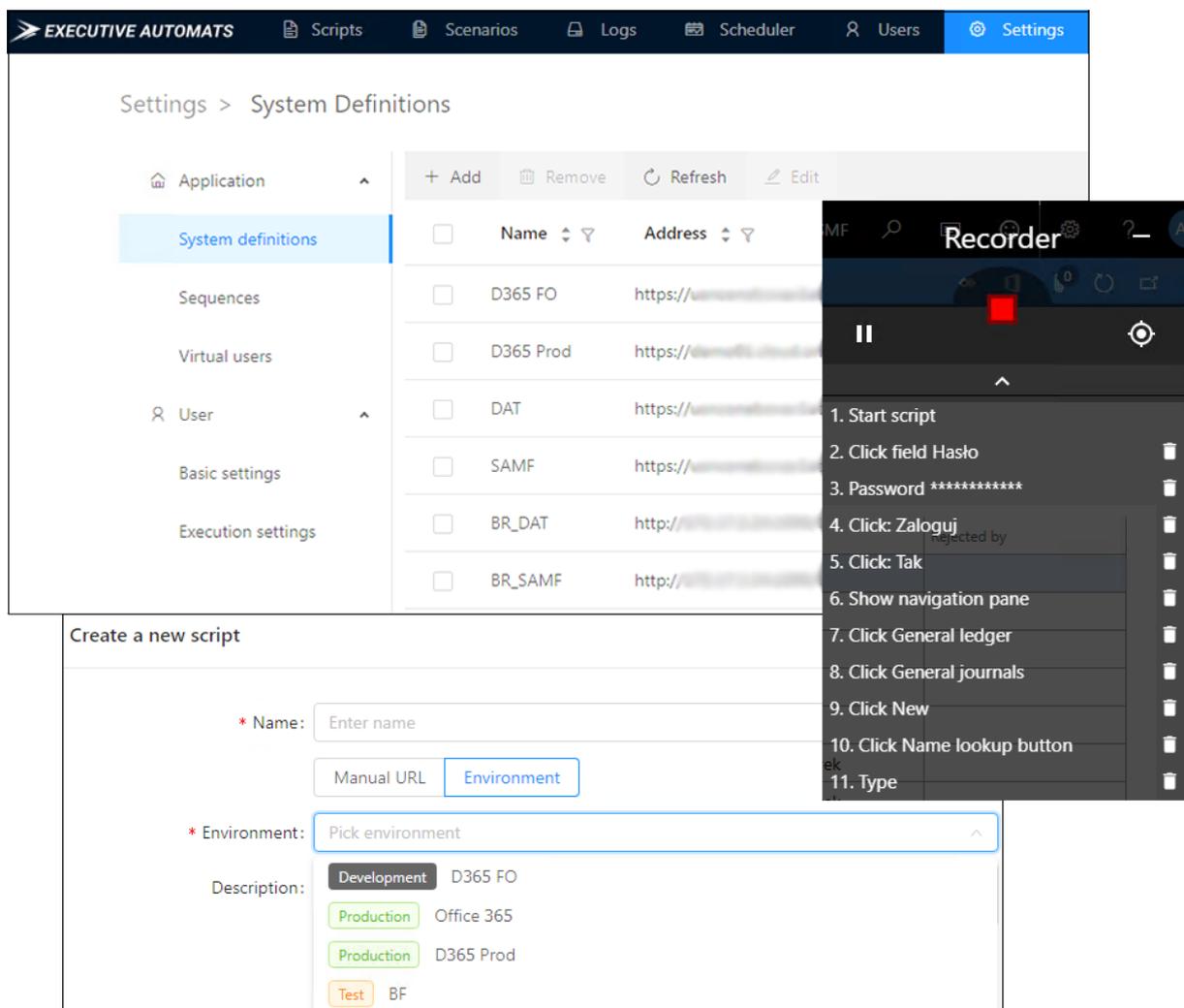
3.2. Modifying scripts

As every Dynamics professional out there knows, starting from scratch with a script every time you need to make any adjustment is a pain. We decided we could save a lot of time and resources by solving this problem.

Ways to modify your scripts with EA:

a. *Re-work/re-order – you can move steps around just by clicking and dragging.*

b. *Deactivate or Mark steps as optional*

- Accidentally click somewhere? No need to start over, just deactivate that step by clicking a check box.
- Sometimes you have a step that occasionally has a pop up window, marking as optional takes care of that

c. *Add/subtract/duplicate/loop steps*

- Add - Miss a step or have a new step to add to the process. Just click re-work script, go to the place where the step needs to be and record it.
- Subtract – remove an unnecessary step with the click of a check box
- Duplicate – 1 click to duplicate a step in a script.
- Loop steps – create a loop to repeat steps without having to re-record.

d. *Change information in editable fields*

- All editable fields can be adjusted. If you want to add a specific product type or account number, just click on the step. You will see the fields on the right. Click on them and add what you need.

Maintaining and Re-using Scripts

a. *Traditionally, it is very difficult to keep scripts updated well enough to use them in the future and too much work to try to use them across environments.*

b. *Using the above capabilities you can*

quickly and easily update or adjust any script without having to completely redo the whole script.

c. *You can also easily duplicate the script and use that on another environment or copy and paste steps between from one script to another.*

d. *Additionally, you can import and export excel sheets to help speed up script management.*

Enhancing and extending Scripts

You can easily scale your tests. Instead of running one test, stopping, changing some info, and then re-starting. You can have EA do it for you automatically with:

a. *Number Sequences*

b. *Variables*

c. *Excel sheets*

d. *Expressions*

3.3. Conclusion

The speed, ease of creation, and flexibility Executive Automats gives to the user allows them to spend less time on scripts and focus more of their time on analyzing the results and creating solutions.
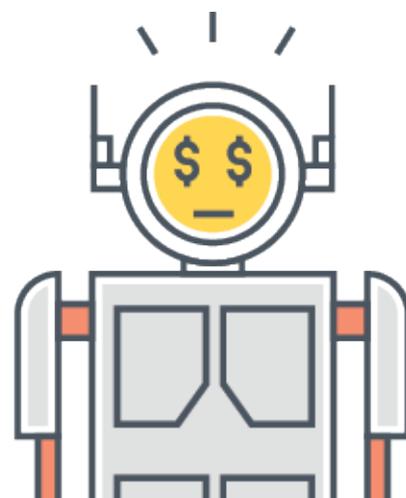
4. Modules

There are 4 main areas that we found to be overly time consuming and tedious when implementing, managing, and maintaining Dynamics AX/D365. For these areas we created modules for Executive Automats: Automated Testing, Performance Testing, Security Permissions Set-up and Optimization, and Process Documentation.

Once you have recorded scripts, you can execute them in any of the different modes.

4.1. Scenarios

This functionality allows you to combine individual processes into larger scenarios to test end-to-end business processes.

Cross-platform testing

In the D365 version (EA365) you can perform cross-platform testing and any web-based platform can be tested i.e. SAP Hybris, SharePoint, Outlook, Google etc.

4.2. Scheduler

This feature runs processes in the background at a predefined time. This allows you to run regression tests at any time to check if your new code release will go smoothly. For example, scheduling your tests overnight and having the results when you come into the office first thing in the morning.

VSTS integration

You can run EA tests from Azure DevOps (VSTS) and have their results flow back to VSTS as data.

4.3. Automated Testing

Functional

a. *Record the script and compile it.*

b. *EA will execute the process and report back to you with logs.*

c. *These logs tell you if the script succeeded or failed and on which step the execution failed as well as why there was an error.*

d. *These logs also tell you the amount of time it took each step to execute.*

• *This can be used to compare performance across many different scenarios and to identify process step bottlenecks that could potentially be improved.*

Regression

a. *Every time you make a change in code, it can affect other parts of the process and/or other processes.*

b. *Once you make your code change, record the process for that new change. Then run the automated script and check the log to see whether the process ran smoothly or there were some errors or warnings.*

c. *This allows you to closely monitor whether the changes you're making are affecting any other parts of the process and know exactly what's affected if errors occur.*

Statistics

Execution status

614

256

124

2491

■ ERROR ■ TERMINATED ■ SUCCESS ■ WARNING
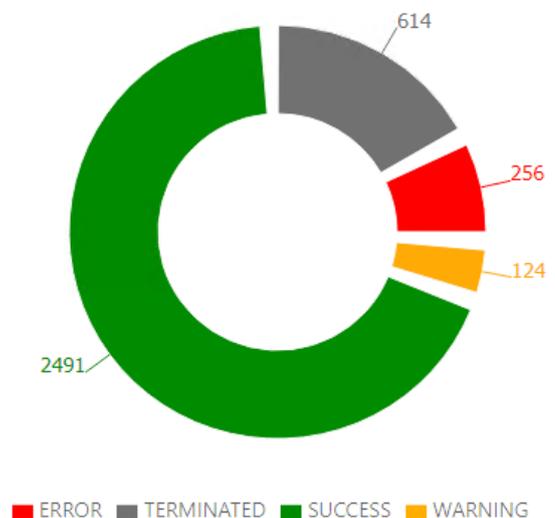
Performance Testing

a. *Without EA, in order to know how your system and hardware will handle stress, you have to wait for real stress to your system or use overcomplicated tools.*

b. *EA allows you to simulate the stress before peak hours arrive by using Batch Jobs/Runtime Groups.*

c. *Batch Jobs/Runtime Groups functionality allows you to scale tests as well as conduct system performance tests by setting up queues of scripts to be run automatically.*

- *With this you can simulate 1000's of simultaneous users to stress your system and make sure your hardware can handle peak hours.*

- *The only limitation to the number of users you can simulate is the Microsoft Terminal Server which can only handle 75 sessions on each terminal. All that is needed is to open more servers.*

- *Once you have opened your sessions you can open SQL monitor, task manager, etc to see how the system is handling the stress.*

- *From the batch jobs functionality, you can easily see the results of your test suites in a chart to see how many tests succeeded or failed.*

4.4. Security Permissions

When it comes to security, it is not easy to know what access a standard system role gives you resulting in too much access and higher than necessary licensing costs.

Most environments also have many customized roles and traditional approaches to security permissions of this type, leaves you with a lot of manual work that can create headaches for security permissions teams.

- Executive Automats not only allows you to see how much access a role gives you, and the licensing level associated with that role, but also allows you to create roles, duties, and privileges based exactly on the access needed to perform a particular process. Once created you can easily assign it to the appropriate employee.

- Of course you can also just use the information to select a role already in the system that meets process execution requirements and has the most minimal amount of access and licensing costs.

- There is a very good case study and reference for this example. EA was recently used to set up completely optimized security for an entire entity in Ireland (847 processes) in just under 3 months.

4.5. Documentation

Another time consuming aspect that EA tackles is process documentation. We all know the normal process. Screenshot, add comments, move to next step. Screenshot, add comments, move to next step. Etc..

With EA you just select the documentation mode to execute a recorded process script, add any comments you need to any step, and generate the documentation in Word doc format in about a minute.

Keeping the script means keeping the process documentation always up-to-date so that it's always ready right when you need it i.e. for staff training.

4.6. Installation/Technical

Installation of Executive Automats takes about 1.5 hours and can be done remotely by our developers or by your team.

EA uses external objects so there is no code adjustments needed on your environment for installation.

EA365 is written in JavaScript and EA2012 is written in X++.

EA365 is fully compatible with 3rd party web-browser clients.

EA365 is integrated with VSTS (Azure DevOps).

For a personal demo, references, or a Proof of Concept, you can find us at www.executiveautomats.com or you can reach us via email at Jacob.davis@xplus.pl or Bartosz.szpiech@xplus.pl

EXECUTIVE AUTOMATS

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