

Automating Build Installs Using Autolt

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SAFE NEVER SLEEPS™

- I want to automate something but I don't know where to start and I don't have a Computer Science Degree
 - This is my story of looking for QA inefficiencies and building tools that would be beneficial
 - What do I do on a regular basis with high repetition?
 - What (free) tools are currently available?

Milestones

Date	Milestone
December 2007	Autolt automated installer script delivered for Build Verification Test
December 2009	Cluster batch file completed for environment setup
February 2012	Install Tool project start
March 2, 2012	Install Tool Proof of Concept delivered
March 13, 2012	Install Tool Version 0.5 delivered
March 28, 2012	Install Tool Version 1.0 delivered
April 12, 2012	Install Tool Version 1.1 delivered
May 21, 2012	Install Tool Version 1.3 delivered

PROBLEM

- Automated BVT for our McAfee product
 - We didn't have a good way to automate our install
- What did I need to accomplish?
 - Have the script automatically walk through the installer from start to finish
 - Have the script configurable to allow different settings within the installer

SOLUTION

- Autolt Record & Playback - <http://www.autoitscript.com>
 - Allowed me to see how Autolt inserted code into the Script (BASIC-like)
 - Manipulated the code to do exactly what I wanted
 - Converted script to an executable
- Need to support different install configurations
 - Autolt allows configuration files to be used
 - Different parts of the installer could be executed

DRAWBACKS

- Many timing issues
 - Lots of manual pauses needed
- Object ID's changing during development
 - Autolt script hangs if it couldn't find the Object ID
- Lots of overhead to keep it running smoothly

PROBLEM

- Building a Clustered environment with physical systems is very daunting

Task	Duration (Minutes)
Configure at least 2 systems for active and passive nodes	30-45 per node
Configure storage for the application and cluster data	60
Configure a remote SQL Server	60
Configure Cluster Service	30
Install our product	30

4 HOURS!!!

SOLUTION

- Batch files to the rescue
 - The majority of the tasks could be executed via a command line
 1. Allow user to specify a build, package, and build type
 2. Have script revert VM snapshots & power on
 3. Have script configure the cluster
 4. Have script find the build specified and copy it to the test system(s)
 5. Have script unzip & install the build

45 MINUTES!!!

DRAWBACKS

- Too much initial setup
 - Users required to build all of their systems initially with everything in place
- Not user friendly (No User Interface)
 - Batch files are not the most intuitive thing to use

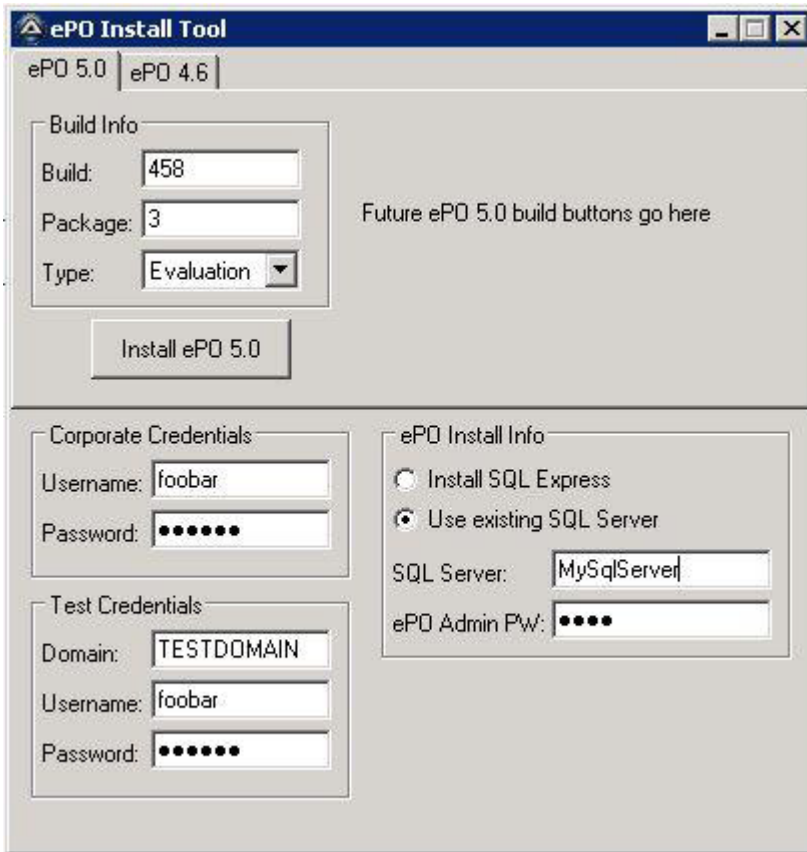
PROBLEM

- Q1 2012 Corporate-mandated “Innovation” idea
 - Utilize my experience with Autolt & Batch files to build a user-friendly interface
- Proof of Concept
 1. Allow user to specify
 - Build to install
 - Credentials needed
 - Local or remote SQL
 - Admin password
 2. Mask password data
 3. Allow install only if all required fields specified
 4. Automate process of grabbing build, installing, etc.

SOLUTION

- Build an easy to use User Interface
 - Research the API to see how to create it
- KISS principle
 - Each product version had their own tab
 - Display generic info consistent across tabs
 - Auto-populate as much as I could


Install Tool (Proof of Concept)



The screenshot shows the 'ePO Install Tool' window with the 'ePO 5.0' tab selected. It contains several input fields and buttons:

- Build Info:**
 - Build: 458
 - Package: 3
 - Type: Evaluation (dropdown)
 - Install ePO 5.0 button
- Corporate Credentials:**
 - Username: foobar
 - Password: masked
- Test Credentials:**
 - Domain: TESTDOMAIN
 - Username: foobar
 - Password: masked
- ePO Install Info:**
 - ☐ Install SQL Express
 - ☒ Use existing SQL Server
 - SQL Server: MySqlServer
 - ePO Admin PW: masked

Text: Future ePO 5.0 build buttons go here



The screenshot shows the 'ePO Install Tool' window with the 'ePO 4.6' tab selected. It contains three buttons:

- Install ePO 4.6 RTW
- Install ePO 4.6.1
- Install ePO 4.6.2

Sent to select individuals for feedback

DRAWBACKS

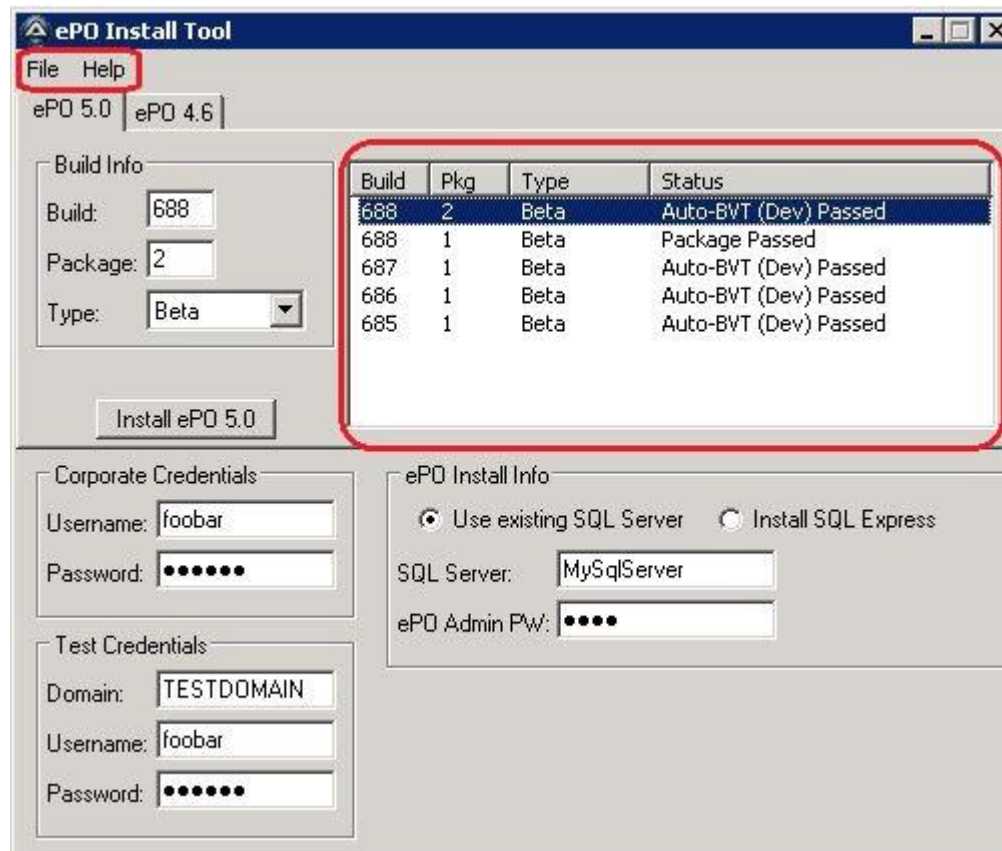
- Good start, but could be better
- One of the main requests was to provide available builds instead of needing to know what build to use

And So It Begins...

UPDATES

- Provide a list of builds to install, but how?
 - SQL
 - McAfee Configuration Management DB (eCM)
 - Autolt SQL Connect Function
- Menu System
 - File > Exit
 - Help > Help or About

Install Tool (Version 0.5)



Build	Pkg	Type	Status
688	2	Beta	Auto-BVT (Dev) Passed
688	1	Beta	Package Passed
687	1	Beta	Auto-BVT (Dev) Passed
686	1	Beta	Auto-BVT (Dev) Passed
685	1	Beta	Auto-BVT (Dev) Passed

Sent to QA, Development, & Technical Publications

UPDATES

- Other requests...
 - Display more than the last 5 builds
 - Install an Agent Handler too
 - Install builds with more product versions
 - Specify port info for my SQL connection
 - Specify the administrator name
 - Enter a license key
 - Specify the install path
 - Display Install Tool Version # in title

Install Tool (Version 1.0)

ePO Install Tool V1.0

File Help

ePO 5.0 | **ePO 4.6.3** | ePO 4.6.x RTW

Build Info

Build: 688

Package: 2

Type: Beta

Build	Pkg	Type	Status
688	2	Beta	Smoke-test Passed
688	2	Beta	Auto-BVT (Dev) Passed
688	1	Beta	Package Passed
687	1	Beta	Smoke-test Passed
687	1	Beta	Auto-BVT (Dev) Passed
686	1	Beta	Smoke-test Passed
686	1	Beta	Auto-BVT (Dev) Passed
685	1	Beta	Smoke-test Passed

Install ePO | **Install AH**

Corporate Credentials

Username: foobar

Password:

SQL Server Credentials

☒ NT Authentication

☐ SQL Authentication

Domain: TESTDOMAIN

Username: foobar

Password:

ePO Install Info

☒ Use existing SQL Server ☐ Install SQL Express

SQL Server: MySQLServer SQL Port: 3849

SQL Instance: MySQLInstance

ePO Admin Name: foobar ePO Admin PW:

License Key: aaa-bbb-ccc-ddd-eee

Install Path: C:\Program Files\McAfee\ePO

AH Install Info

ePO Server: MyEP0Server ePO Admin Name: foobar ePO Admin PW:

ePO Install Tool V1.0

File Help

ePO 5.0 | ePO 4.6.3 | ePO 4.6.x RTW

Build Info

Build: 190

Package: 1

Type: Evaluation

Build	Pkg	Type	Status
197	1	Evaluation	BVT In-Progress
196	1	Evaluation	BVT In-Progress
195	1	Evaluation	Package Passed
193	1	Evaluation	Auto-BVT Passed
191	1	Evaluation	Package Passed
190	1	Evaluation	BVT Passed
189	1	Evaluation	Auto-BVT Passed
188	1	Evaluation	Package Passed

Install ePO | **Install AH**

ePO Install Tool V1.0

File Help

ePO 5.0 | ePO 4.6.3 | ePO 4.6.x RTW

Install ePO 4.6.0 RTW | Install AH 4.6.0 RTW

Install ePO 4.6.1 RTW | Install AH 4.6.1 RTW

Install ePO 4.6.2 RTW | Install AH 4.6.2 RTW

UPDATES

- More requests...
 - Specify every port for my product install
 - Be notified if there is a port conflict
 - More feedback when an install is happening
 - Launch the tool and click “Install”
 - Logging for debugging purposes
 - Save & Load Configuration files

Install Tool (Version 1.1)

ePO Install Tool V1.1

File Help

ePO 5.0 | ePO 4.6.3 | ePO 4.6.x RTW

Build Info

Build:
Package:
Type:

Build	Pkg	Type	Status
699	1	Beta	Package Passed
698	1	Beta	Smoke-test: In-Progress
696	1	Beta	Package Passed
688	2	Beta	Smoke-test Passed
688	2	Beta	Auto-BVT (Dev) Passed
688	1	Beta	Package Passed
687	1	Beta	Smoke-test Passed
687	1	Beta	Auto-BVT (Dev) Passed

Corporate Credentials

Username:
Password:

SQL Server Credentials

☒ NT Authentication
☐ SQL Authentication

Domain:
Username:
Password:

ePO Install Info

☒ Use existing SQL Server ☐ Install SQL Express

SQL Server: SQL Port:
SQL Instance:
ePO Admin Name: ePO Admin PW:
License Key:
Install Path:

AH Install Info

ePO Admin Name:
ePO Server: ePO Admin PW:

ePO Port Info

Agent-to-server com. port:	<input type="text" value="45"/>	Agent broadcast com. port:	<input type="text" value="4765"/>
Agent-to-server com. secure port:	<input type="text" value="654"/>	Console-to-application server com. port:	<input type="text" value="9830"/>
Agent wake-up com. port:	<input type="text" value="4578"/>	Client-to-server authenticated com. port:	<input type="text" value="2930"/>

Specify your settings and click Install

UPDATES

- Help from a colleague with a CS Degree
 - Increase efficiency within the code
- Remove “Corporate Credentials”
- Support Silent Install

Install Tool (Version 1.3)

ePO Install Tool V1.3

File Help

ePO 5.0 | ePO 4.6.3 | ePO 4.6.x RTW

Build Info

Build:
Package:
Type:

Build	Pkg	Type	Status
699	1	Beta	Package Passed
698	1	Beta	Smoke-test: In-Progress
696	1	Beta	Package Passed
688	2	Beta	Smoke-test Passed
688	2	Beta	Auto-BVT (Dev) Passed
688	1	Beta	Package Passed
687	1	Beta	Smoke-test Passed
687	1	Beta	Auto-BVT (Dev) Passed
686	1	Beta	Smoke-test Passed

SQL Server Credentials

☒ NT Authentication
☐ SQL Authentication

Domain:
Username:
Password:

ePO Install Info

☒ Use existing SQL Server ☐ Install SQL Express

SQL Server: SQL Port:
SQL Instance:
ePO Admin Name: ePO Admin PW:
License Key:
Install Path:

AH Install Info

ePO Server: ePO Admin Name: ePO Admin PW:

ePO Port Info

Agent-to-server comm port: Agent broadcast comm port:
Agent-to-server comm secure port: Console-to-application server comm port:
Agent wake-up comm port: Client-to-server authenticated comm port:

Specify your settings and click Install

Future Updates

- Run the install on a remote system
- Use the tool to perform an upgrade
- Check for an existing DB before installing
- More options and other product installs
- Etc...

Summary

- Installing builds can be daunting
- Automation can save a lot of time
- Lots of really cool (free) tools available (Autolt)
- It doesn't take a Computer Science Degree
- Increase Efficiency & reduce overall cost

