

One Click OpenVMS x86

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Disclaimer

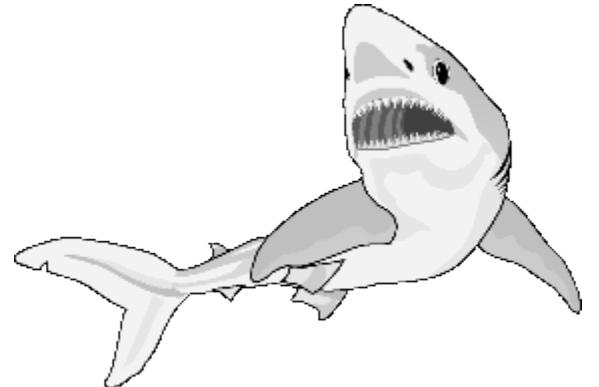
- Not a hack, not a product
- Created at our Hackathon
- ONLY x86!
- We only install the latest versions
- In early stages, feedback is appreciated!
- Let's get started!

Introduction

- Unattended full install of OpenVMS in KVM
 - Auto install “apps” chosen by the user
 - Auto apply licenses paid for
 - We really do it for you!
 - In the cloud
 - Takes 10 to 15 minutes, instead of 5+ hours...
 - You just come and download the final product
- Multi output files:
 - qcows
 - vmdk
- We do not overload our services on the way (caching)
- Ninite for a 40 y.o. OS

Why?

- ▶ Removing the barrier of entry to x86
- ▶ Removing the barrier of entry to newcomers
 - Anyone with a computer can do it!
- ▶ Single click OpenVMS
 - *wget openvmslegitdownload.com/giveMeTheShark*



Vernon

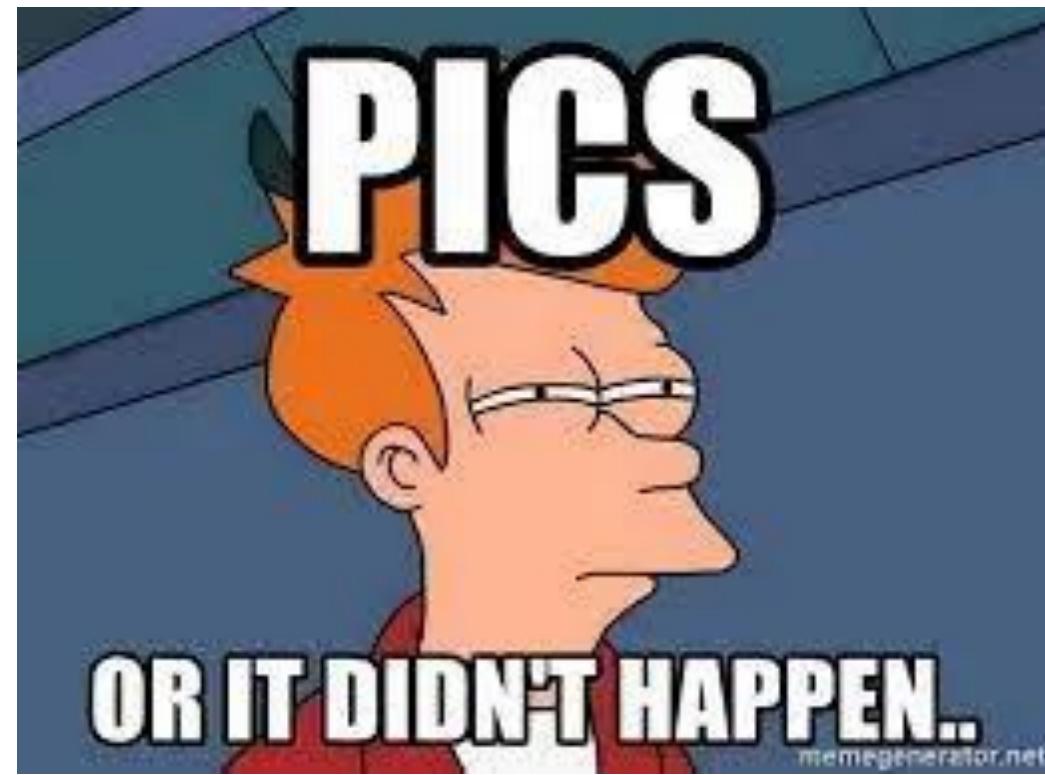
What does it actually?

- Downloads all x86 packages/kits
- Caches the downloaded files
- Figures out the dependencies
- Automatically installs OpenVMS as KVM guests
- Precrashes
- "Nicely" shuts it down
- Downloads all licenses a user has access to
- Installs all packages selected inside the VM
- Installs licenses
- Generates .VMDK files (compatible with VMware, VirtualBox)
- Packs the storage files and compresses them, ready for delivery

... so, a bunch of stuff

Cron job

- Downloads all x86 packages/kits
- md5sum check downloads
- Caches the downloaded files
- Figures out the dependencies (excludes base OS dependencies)



What does it do – Quick VMS install

- Automatically installs OpenVMS as KVM guests
 - Installs all packages selected inside the VM
 - Nicely shuts it down
 - ⚠ Generates .VMDK files (compatible with VMware, VirtualBox)
 - ⚠ Packs the storage files and compresses them, ready for delivery
-
- Up to 60 concurrent installations at once!

Dependencies

- OS updates are ignored, since we are using always the latest version
- There are really no real multi-level dependencies
- Service portal currently is pretty bad at mentioning dependencies
- Small list of **proper** inter package dependencies registered on SP

What does it do - Licenses

- Downloads all licenses
- ⚠️ Downloads all packages/kits the user has a license for
- ⚠️ Applies downloaded licenses inside VMS

What do you need to do as a user?

1. Login to the service
2. Select the needed products / versions. Submit
3. Wait for the email with a download link
4. Download the custom generated zip onto your Linux host
5. Unzip and run the attached bash script: `./unpack_and_install.sh`:
provided single click non-sudo wget downloadable deploy script
6. Enjoy your new OpenVMS VM!

Don't forget to change the system password!

What's next?

- Customizable default settings for VM
- Customizable default settings for base OS and each kit
- Integration with the Service Portal (frontend)
- Caching of pre-made images (tree caching)
- Preemptive generation
- More than .vmdk: full ESXi appliance
- Optimizing server usage
- De-hackathonizing

Technologies used

What?	Why?
KVM	Easy to automate Parallelizing multiple runs
Virsh / virt	Needed for easily managing VM
Qemu-img	Thin / thick provisioning Conversion to ESXi
Bash scripts	Accessible
Expect scripts	Nearly de facto standard on scripting automation
DCL scripts	Sometimes it was easier to just run a DCL instead of writing a full “expect”
OCI	Burstable, cheap and perfect with sudden heavy loads

Why OCI?

- The server is burstable. We technically pay for only 12.5% of 127 cores.
- Cheap to run
- Capable of taking heavy loads when needed
- OCI costs for 1 week: USD150,00

Frontend. Think of...

1. Pick the apps you want

Web Browsers	Messaging	Media	.NET	Java	Imaging	Documents
<input type="checkbox"/> Chrome	<input type="checkbox"/> Zoom	<input type="checkbox"/> iTunes	<input type="checkbox"/> .NET 4.8.1	<input type="checkbox"/> Java (AdoptOpenJDK) x64 8	<input type="checkbox"/> Krita	<input type="checkbox"/> Foxit Reader
<input type="checkbox"/> Opera	<input type="checkbox"/> Discord	<input type="checkbox"/> VLC	<input type="checkbox"/> .NET Desktop Runtime x64 8	<input type="checkbox"/> Java (AdoptOpenJDK) 8	<input type="checkbox"/> Blender	<input type="checkbox"/> LibreOffice
<input type="checkbox"/> Firefox	<input type="checkbox"/> Skype	<input type="checkbox"/> AIMP	<input type="checkbox"/> .NET Desktop Runtime ar...	<input type="checkbox"/> Java (AdoptOpenJDK) x64...	<input type="checkbox"/> Paint.NET	<input type="checkbox"/> SumatraPDF
<input type="checkbox"/> Edge	<input type="checkbox"/> Pidgin	<input type="checkbox"/> foobar2000	<input type="checkbox"/> .NET Desktop Runtime 8	<input type="checkbox"/> Java (AdoptOpenJDK) x64...	<input type="checkbox"/> GIMP	<input type="checkbox"/> CutePDF
<input type="checkbox"/> Brave	<input type="checkbox"/> Thunderbird	<input type="checkbox"/> Winamp	<input type="checkbox"/> .NET Desktop Runtime x64 9	<input type="checkbox"/> Java (AdoptOpenJDK) x64...	<input type="checkbox"/> IrfanView	<input type="checkbox"/> OpenOffice
	<input type="checkbox"/> Trillian	<input type="checkbox"/> MusicBee	<input type="checkbox"/> .NET Desktop Runtime ar...	<input type="checkbox"/> JDK (AdoptOpenJDK) x64 8	<input type="checkbox"/> XnView	
		<input type="checkbox"/> Audacity	<input type="checkbox"/> .NET Desktop Runtime 9	<input type="checkbox"/> JDK (AdoptOpenJDK) 8	<input type="checkbox"/> Inkscape	
		<input type="checkbox"/> K-Lite Codecs		<input type="checkbox"/> JDK (AdoptOpenJDK) x64 11	<input type="checkbox"/> FastStone	
		<input type="checkbox"/> GOM		<input type="checkbox"/> Greenshot		
		<input type="checkbox"/> Spotify		<input type="checkbox"/> ShareX		
		<input type="checkbox"/> OneDrive		<input type="checkbox"/> JDK (Amazon Corretto) x6...		
		<input type="checkbox"/> SugarSync		<input type="checkbox"/> JDK (Amazon Corretto) 8	<input type="checkbox"/> Compression	
		<input type="checkbox"/> MediaMonkey		<input type="checkbox"/> JDK (Amazon Corretto) x6...	<input type="checkbox"/> 7-Zip	
		<input type="checkbox"/> HandBrake		<input type="checkbox"/> JDK (Amazon Corretto) x6...	<input type="checkbox"/> PeaZip	
				<input type="checkbox"/> JDK (Amazon Corretto) x6...	<input type="checkbox"/> WinRAR	
Developer Tools			Other			Utilities
			<input type="checkbox"/> Evernote			<input type="checkbox"/> AnyDesk
			<input type="checkbox"/> Google Earth			<input type="checkbox"/> TeamViewer 15
			<input type="checkbox"/> Steam			<input type="checkbox"/> ImgBurn
			<input type="checkbox"/> KeePass 2			<input type="checkbox"/> RealVNC Server
			<input type="checkbox"/> Everything			<input type="checkbox"/> RealVNC Viewer
			<input type="checkbox"/> NV Access			<input type="checkbox"/> TeraCopy
						<input type="checkbox"/> CDBurnerXP
						<input type="checkbox"/> Revo
						<input type="checkbox"/> Launchy
						<input type="checkbox"/> WinDirStat
						<input type="checkbox"/> WizTree
						<input type="checkbox"/> Glary
						<input type="checkbox"/> InfraRecorder
						<input type="checkbox"/> Open-Shell
						<input type="checkbox"/> CCleaner

Issues, puzzles we had to solve

- Debugging TCL/expect
- Creating DCL scripts in Linux (CRLF)
- Nested dependencies, filtering
- ISO filename size limitation (packages, licenses etc...)

We are here to hear you!

- What else would you like in this tool?
- More requirements, features?
- Other feedback
- Is this useful at all?

Stats

- Hours spent: 97,5
- Lines of code: 2266
- Lines of code/h: 23,24
- Commits: 44
- Estimated sprint ratio: ~15x
- MVP (self-assessed): 80%

Thanks to:

- **Brett Cameron** : for planting the idea seed in the first place (13/11/2024)
... create something (a web app) that customers could use to build the appliance they want ... select what products they want included in the image, subscription term, and so forth, and we generate an appliance that includes all of those bits and pieces (including the necessary PAKs) that they can download, and we send them the bill. If all of this could be automated, it would be a mutual win-win.
- **Aigul Zhulmukhametova**: for the nicely done SP API.
- **Rodion Sokolov**: for helping with the SP API in the corner cases, and for ping-ponging ideas for package management

How is the demo going?

- Watch until the qcows come home



Get in touch with Professional Services!

- We are a mixed team, with lots of years of VMS experience and well versed in many contemporary IT tools
- We are here to help, get in touch!
- Save your time! Tools, scripting, automation
- Learn from our mistakes! Processes, best practices
- Leverage our attention to details: Performance Testing, Fine Tuning
- Delegate your responsibilities: Full system migration, updates and upgrades, plus 24/7 managed services
- And much more! Contact your account manager for details.

Questions and Suggestions Please!

- ▶ Linux
- ▶ KVM
- ▶ VMS

