Example API Reporting with PowerBi v1

Summary

Automox is the easiest-to-use, most-recommended, most efficient cloud-native solution for endpoint hardening – anywhere, in an instant. Being a cloud-native platform, Automox makes it possible to manage Windows, macOS, and Linux devices with one solution without purchasing physical hardware or installing a management application.

As companies move to internet-based modern solutions, some of the challenges of legacy solutions are immediately solved, while others remain. The purpose of this document is to present the most common challenges and provide guidance on how to utilize native technologies while working to preserve the intent of a cloud-first, infrastructure-less solution.

You can read more about BI here at the Automox blog.
[Using Automox with Business Intelligence Solutions](#)

Overview

Did you know a Business Intelligence solution combined with the Automox Console API can improve cybersecurity by providing improved stakeholder visibility?

In this example, we leverage PowerBI and Powershell to enable Automox users to get your data and present it in a familiar way that everyone can understand.

Using the current API and some of the many already available API calls found on the Automox community site, we can pull our data into PowerBi and display this into a report model.

You can find more API scripts and tricks in our Automox Developer Portal & API Guide:
[Automox Developer Portal & API Guide](#)

Challenges

- Console Reporting is limited to a few reports
- Limited experience with API
- Requests limits aka Pagination
- Nested JSON within JSON within JSON
- No easy way to get device details for all devices, especially if you have more than 5000 devices

Disclaimer

- This isn't a replacement for Automox reporting but an example of using a business intelligence tool with the Automox API.

Instructions

Prerequisites

- API Key from your organization
- Org ID
- Powershell ISE
- Windows 10 or Server 2016+
- PowerBi Desktop
- Directory path of C:\temp\
- Powershell API script (GrabAXAPIData.ps1 from Github repository)
- Reports Demo v1 PowerBi template (Automox_Reports_Example_v1_wAPI.pbit from Github repository)

Configuration

1. Create a new folder on your C: drive called temp.
2. Download and save the PowerShell API script to C:\temp
3. Download and save the Automox_Reports_Example_v1_wAPI.pbit to C:\temp
4. Open the script to edit and enter your API & your ORG ID and save it.

```
1   # Update these variables with your API Key, orgID & save directory/filename
2   # This script expects the C:\temp\ path to already exist and will overwrite an existing file
3   ################################################################################################
4
5   $apiKey = '<YOUR_KEY_HERE>'
6   $orgID = '<YOUR_ORG_HERE>'
7
8   ################################################################################################
9
10
```

5. Click the Run script button to execute the script. This will generate the required files for the PowerBi reports. The data file are saved in C:\temp\

AUTOMOX

Name	Date modified	Type	Size
GrabAXAPIData.ps1	4/4/2021 12:03 PM	Windows PowerS...	7 KB
health.csv	4/4/2021 11:31 AM	Microsoft Excel C...	5 KB
packages.csv	4/4/2021 11:32 AM	Microsoft Excel C...	64 KB
PackagesWaiting.json	4/4/2021 11:32 AM	JSON Source File	135 KB
Policies.json	4/4/2021 11:32 AM	JSON Source File	299 KB
PolicyStats.json	4/4/2021 11:32 AM	JSON Source File	15 KB
PrePatch.json	4/4/2021 11:32 AM	JSON Source File	3 KB
ServerGroups.json	4/4/2021 11:32 AM	JSON Source File	11 KB
Servers.json	4/4/2021 11:32 AM	JSON Source File	136 KB
SoftwareInv.csv	4/4/2021 11:32 AM	Microsoft Excel C...	136 KB

6. Double click to open Automox_Reports_Example_v1_wAPI.pbit from C:\temp\. The template will open and load the data files from step 5.
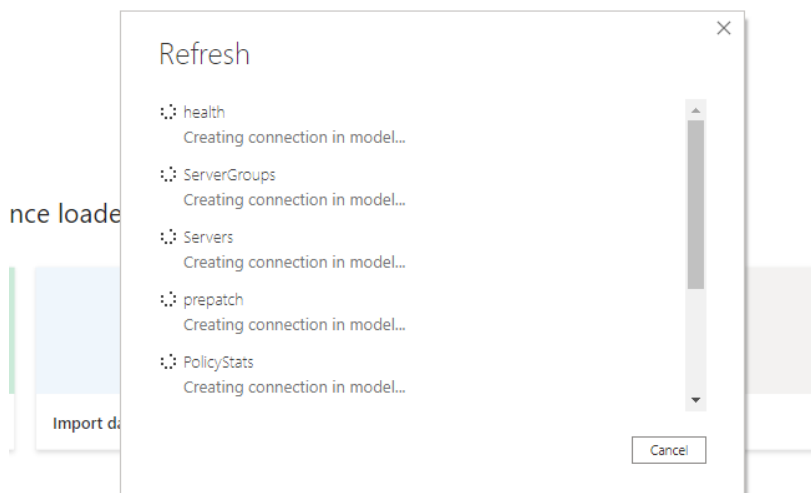
7. Once the data loads and you see the pre-defined reports, save the file as a PowerBi file with the .pbix extension.

8. When you want to refresh your report data, just execute the PowerShell script, then click the refresh button in PowerBi.

Reporting Examples

Organization overview displays information about all your devices in the Automox console.

One glance, and you can see device agent versions, devices online, devices needing a reboot, devices by an operating system, and many more.

Device details display essential information about all your devices.
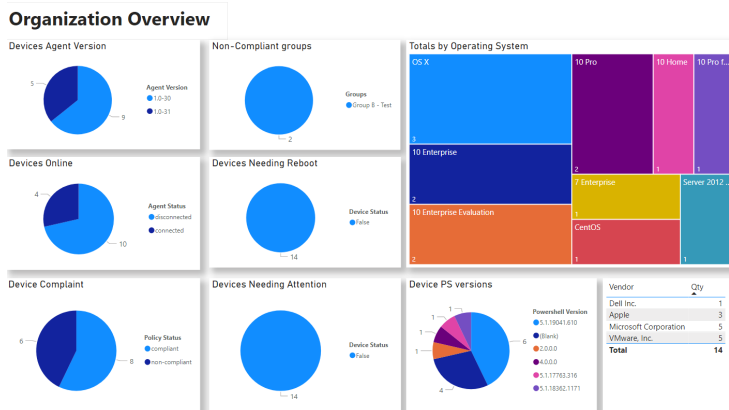
With a few clicks, you can sort a column, filter, and export your data.

Groups, policies, and devices show relationships between each.

Click on a group; it will filter the policies and device visualizations.

Click on a policy; it will filter the groups and devices visualization.

Click on a device; it will filter the groups and policies visualization.
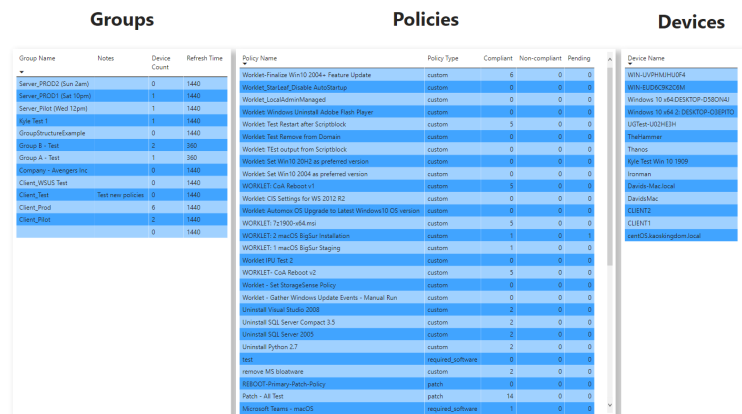
Policies give you a great view of all your policies in the Automox console.

Click on a column to sort, or use a filter to focus on a specific policy.

Policies

Name	Package Name	notes	Policy Type	OS Family	Package Version	Device Count
_Client_Pilot_Standard Patches (Wed 1:30pm)		Patch All except definition updates, feature updates	patch	Windows		3
_Client_PROD_Standard Patches (Fri 1:00pm)			patch	Windows		7
_Patch_Advanced_Microsoft_OS and Office		Exclude : SQL, Optional and Recommended Windows Updates, Definition updates, and Feature updates	patch	Windows		0
_Patch_Clients_Defender_Updates_Daily			patch	Windows		0
_Patch_Feature Updates_Manual			patch	Windows		8
_Patch_Servicing Stack Update			patch	Windows		10
_Patch_Test - Manual			patch	Windows		9
7-zip	test		required_software	Windows	1.0	2
7-Zipx64	7-Zip		required_software	Windows	19.00	2
Clear Browser cache, cookies, history		https://community.automox.com/t/clear-cache-cookies-and-history-from-ie-and-chrome/1384	custom	Windows		2
Config Mgr 2012r2 toolkit	ConfigMgr 2012 Toolkit R2	toolkit	required_software	Windows	5.00.7958.1151	6
CS Sensor Installer - Servers	CS Sensor		required_software	Windows	1.2.2	0
Disable LLMNR		https://community.automox.com/t/worklet-disable-llmnr-security-risk-windows/1413	custom	Windows		0
Firefox International Support Upgrade			custom	Windows		0
Gather Application and System errors		grabbed from https://community.automox.com/t/worklet-windows-event-viewer-output-application-and-system-errors-to-activity-monitor/1725/1	custom	Windows		2
Heros_Patch_All			patch	Windows		3
Install Chrome	Google Chrome		required_software	Windows	68.73.16456	2
Kyle - Clear Download			custom	Windows		1
Kyle - Open Google			custom	Windows		1
Microsoft Teams - macOS	Microsoft Teams		required_software	Mac	1.00.333671	1
Patch - All Test		Testing if Disabled Policy can be attached and if compliance changes based on active/inactive state of this policy	patch	Windows		14
REBOOT-Primary-Patch-Policy			patch	Windows		
remove MS bloatware			custom	Windows		2
test	notepad++		required_software	Windows	1.2	0
Uninstall Python 2.7			custom	Windows		2
Uninstall SQL Server 2005			custom	Windows		2

Policy Stats gives you a great view of your policy compliance in the Automox console.

Click on a column to sort, or use a filter to focus on a specific policy.

Policy Stats

Policy Name	Policy Type	Pending	Compliant	Non-Compliant
_Client_Pilot_Standard Patches (Wed 1:30pm)	patch	0	3	0
_Client_PROD_Standard Patches (Fri 1:30pm)	patch	0	7	0
_Patch_Advanced_Microsoft_OS and Office	patch	0	0	0
_Patch_Clients_Defender Updates_Daily	patch	0	0	0
_Patch_Feature Updates_Manual	patch	0	8	0
_Patch_Servicing Stack Update	patch	0	10	0
_Patch_Test - Manual	patch	0	9	0
7-zip	required_software	0	0	0
7-Zipx64	required_software	0	2	0
Clear Browser cache, cookies, history	custom	0	2	0
Config Mgr 2012r2 toolkit	required_software	4	2	0
CS Sensor Installer - Servers	required_software	0	0	0
Disable LLMNR	custom	0	2	0
Firefox International Support Upgrade	custom	0	0	0
Gather Application and System errors	custom	2	0	0
Heros_Patch_All	patch	2	1	0
Install Chrome	required_software	0	2	0
Kyle - Clear Download	custom	1	0	0
Kyle - Open Google	custom	1	0	0
Microsoft Teams - macOS	required_software	0	1	0
Patch - All Test	patch	0	14	0
REBOOT-Primary-Patch-Policy	patch	0	0	0
remove MS bloatware	custom	0	2	0
test	required_software	0	0	0
Uninstall Python 2.7	custom	0	2	0
Uninstall SQL Server 2005	custom	0	2	0
Uninstall SQL Server Compact 3.5	custom	0	2	0
Uninstall Visual Studio 2008	custom	0	2	0
Worklet - Gather Windows Update Events - Manual Run	custom	0	0	0

Pre-patch displays a list of all the scheduled patches per device along with severity and exposure information allowing you to effectively assess internal impact.

Click on a column to sort or

Pre-Patch Report

Name	Device ID	Group	Patch Name	Patches Severity	Patches Cve	Create Time
Thanos	939875	Group B - Test	Security Intelligence Update for Microsoft Defender Antivirus - KB2267602			3/12/2021 9:57:33 AM
TheHammer	904773	Group B - Test	Security Intelligence Update for Microsoft Defender Antivirus - KB2267602			2/1/2021 1:38:52 PM

AUTOMOX

use a filter to focus on a specific device or patch name.	
Report displays packages available to install in your organization	**Packages Waiting**
Software Inventory report displays all software installed on all your devices	**Software Inventory**
Health Check display information about your devices a can help you troubleshoot connectivity/patching issues. See the Health check section below for more detail	**Health Check**

Health check column definitions

Name	Device name

Agent Version	Upgrade all agents to version 1.0-31
PS version	PowerShell version on the device
Auto Update Option	Provides the Automatic Update options last collected from each agent during the last scan before I collected the environment data. The settings can be set in different ways (1. By the OS Patch Management settings in the Automox group the agent belongs to, 2. If the OS Patch Management settings in the group is set to keep settings, it will be set locally, by GPO, or if there is another management system configuring patch processes). Our best practice is to only use one method to manage the patch management settings. As an example, if you want Automox to manage the settings, set the "Windows and macOS Patch Management" setting to "Disable OS Automatic Updates", and Set the "Windows Update Source" to either "Windows Update" or "WSUS" depending on where you want the devices of that group to search. Disable other patch configuration settings (example, if you use SCCM/Jamf, stop setting patch configurations via agent settings. If you set Windows Update settings with GPO, remove those settings or set to unconfigured in GPO. The important point is to use only one source to configure these settings. {"ENABLED": "0", "OPTIONS": "off"} for Windows, and {"ENABLED": "0", "OPTIONS": ""} for macOS are the preferred settings. This means that the device will not automatically patch itself, and the Automox policy will define what patches to download, and the schedule for installation.
WSUS Config	WSUS settings defined on the client. WSUS_Server is blank if using Windows Updates as the source, and will list the WSUS server if WSUS is the source. WSUS_Managed, 0 = not WSUS managed, and 1 = WSUS managed. REACHABLE is only relevant if WSUS managed, 0 = Not reachable, 1= Reachable.
WSUS Update Source	Lists if there was an error connecting to the update source, and if it was connected. This will present the devices that failed the update source check visible in the console under compatibility tests.
WMI Check	Windows only, check for WMI corruption
Need Reboot	Device needs a reboot
Last Disconnect time	Lists when a device last disconnected from Automox. if it is empty, it is active. You can use this to identify devices that have not checked recently.
Last Refresh Time	Lists the last time a scan was performed. If the date is missing or is very old, the device has either been offline for a substantial period, or the agent is no longer working correctly. Note: if the agent is v 1.0-25 and the device is active, please contact support as there is a script that can help correct the issue and update the agent to the current version.
Pending Patches	Number of patches needed based on policy at last successful scan.

	Can be compared to Column (patches) for analysis if what is available vs targeted to install.
OS Version	Review for Automox supported OS versions - Automox Agent Requirements
Free (GB)	Free disk space