

MSRC Dashboard in PBI

Security – Analyze KBs MSRC



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1 MSRC Dashboard in PBI

This document will help the Security team to analyze the KBs, delivered monthly by Microsoft.

The <u>Microsoft Security Updates API | MSRC</u> is a RESTful API that we can use to engage the Microsoft Security Response Center (MSRC) in the following ways:

- Get security update summaries and details using the Common Vulnerability Reporting Framework (CVRF).
- Report suspected cyberattacks or abuse originating from Microsoft Online Services.
- Notify Microsoft of any planned penetration tests against your Azure assets.

The purpose of this documentation is to show you how to get the CVRF summary and combine that information with the WSUS database, providing a PowerBI dashboard with insightful information about KB availability by period, KB replacement, and more.

The dashboard generate will have the following information:

- Microsoft Common Vulnerabilities and Exposures (CVE).
- Product involved with CVEs.
- KBs associate with CVEs.
- Superseded KBs.
- Supersedes KBs.
- WSUS KBs analyses.
- Combination of data coming from MSRC and WSUS database.



2 Solution Architecture

As mentioned before this Dashboard will combine info from MSRCAPI and from WSUS database. Therefore, in order to make this solution to work the following steps are necessary:

- Download a JSON file that contain CVE info.
- WSUS server available to connect.
- SUSDB in SQL database, <u>WID database won't work.</u>
- Read permission on SUSDB
- PowerBI Desktop installed.
- PBI template file that does the analysis.

2.1 Download a JSON file using PowerShell

To download a JSON file from MSRCAPI, we need a computer with Windows 10 operating system, with internet access. These are the steps to generate the JSON file.

Reference: <u>GitHub - microsoft/MSRC-Microsoft-Security-Updates-API: Repo with getting started projects for the Microsoft Security Updates API (portal.msrc.microsoft.com)</u>

```
Steps
1. Open a PowerShell prompt as administrator.
2. Run the command:
Install-Module -Name msrcsecurityupdates -force
 Type "Y" to confirm
  Administrator: Windows PowerShell
                                                                                                                                                                                   ×
  opyright (C) Microsoft Corporation. All rights reserved.
 PS C:\Users\rlucena.contoso> Install-Module -Name msrcsecurityupdates -force
 NuGet provider is required to continue
Nuget provider is required to continue
PowerShellGet requires NuGet provider version '2.8.5.201' or newer to interact with NuGet-based repositories. The
NuGet provider must be available in 'C:\Program Files\PackageManagement\ProviderAssemblies' or
'C:\Users\rlucena.contoso\AppData\Local\PackageManagement\ProviderAssemblies'. You can also install the NuGet provider
by running 'Install-PackageProvider -Name NuGet -MinimumVersion 2.8.5.201 -Force'. Do you want PowerShellGet to
 by running 'Install-PackageProvider -Name NuGet -MinimumVinstall and import the NuGet provider now?

[Y] Yes [N] No [S] Suspend [?] Help (default is "Y"):
3. Run the commands:
Import-Module -Name msrcsecurityupdates -force
$monthOfInterest = "2021-Sep"
#Replace "2021-Sep" by year-month you'd like to get information
$Output_Location = "C:\temp\MSRC 2021-Sep Security Updates.json"
```



Steps

#Inform a path where MSRC.json file will be created

Get-MsrcCvrfDocument -ID \$monthOfInterest -Verbose | ConvertTo-Json -Depth 100 | Out-File \$Output_Location

```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Windows\system32> Import-Module -Name msrcsecurityupdates -force -Version "1.9.5"
PS C:\Windows\system32> $monthOfInterest = "2021-Sep"
PS C:\Windows\system32> $0utput_Location = "C:\temp\MSRC 2021-Sep Security Updates.json"
PS C:\Windows\system32> $0et-MsrcCvrfDocument -ID $monthOfInterest -Verbose | ConvertTo-Json -Depth 100 | Out-File $0ut_Location

VERBOSE: Calling https://api.msrc.microsoft.com/cvrf/v2.0/cvrf/2021-Sep?api-version=2016-08-01

VERBOSE: GET https://api.msrc.microsoft.com/cvrf/v2.0/cvrf/2021-Sep?api-version=2016-08-01 with 0-byte payload

VERBOSE: received -1-byte response of content type application/json; charset=utf-8
PS C:\Windows\system32>
```

2.2 WSUS Server and SUSDB Updated

It is expected from you to have a WSUS Server available, that way PBI dashboard will get data from SUSDB and this database should also be kept up to date.

IMPORTANT: It is not part of this document WSUS implementation steps.

2.3 PowerBI Desktop installation

Download the version of Power BI Desktop that matches the architecture (x86 or x64) of your Windows OS. Run the MSI installer and follow the setup steps.

https://www.microsoft.com/en-us/download/details.aspx?id=45331

2.4 PowerBI Dashboard

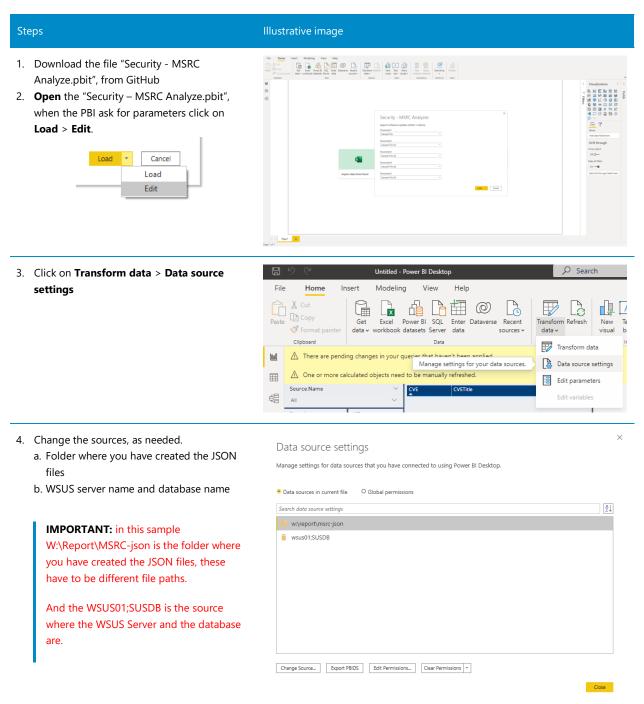
Once you have all requirements configured, open the PBI template file, but before you start using it is important that you understand how this PBI works.

Basically, this PowerBI dashboard will consume all JSON file available under a determined paths and will get some tables in SUSDB and execute some queries in SUSDB.

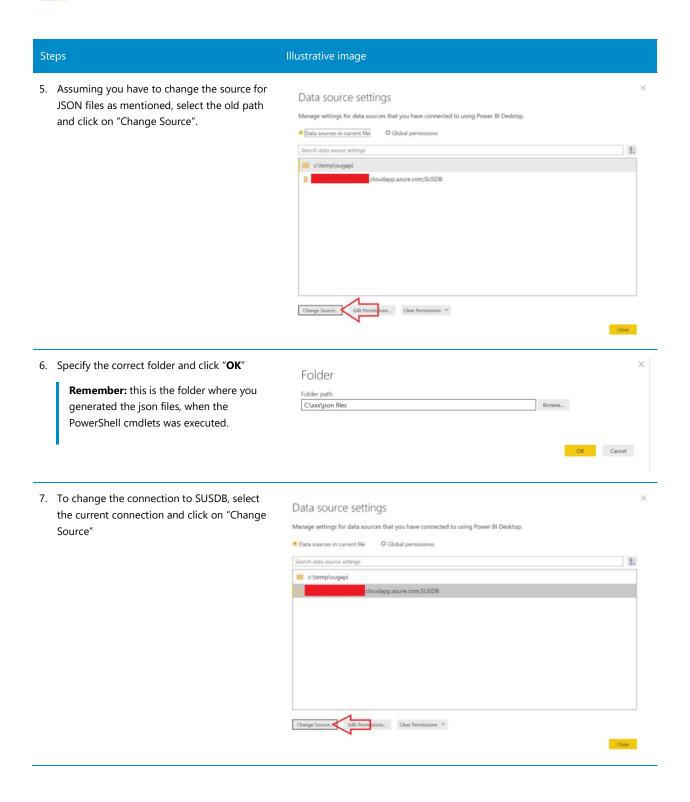
These JSON files are the results from the previously executed PowerShell cmdlets to create/extract them from MSRCAPI website. Now we will configure PBI dashboard to get



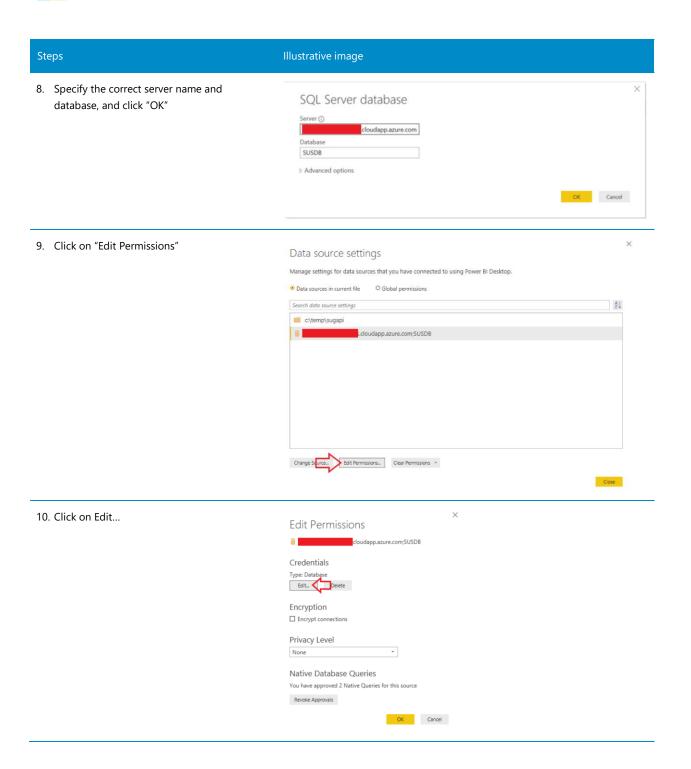
information from JSON file stored in a previous path, and we must configure the SUSDB connection.



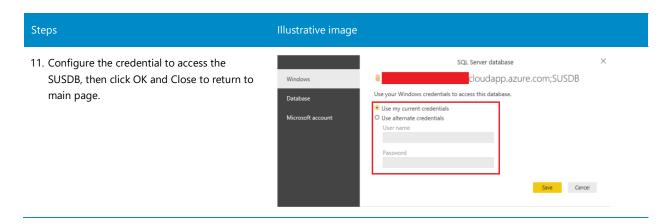






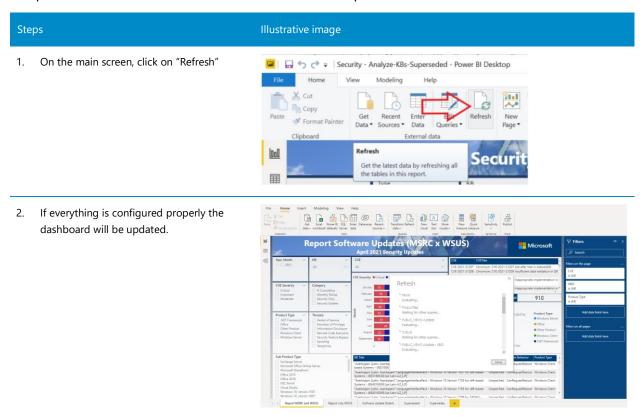






2.4.1 How to update data in PowerBI Dashboard

Once you have changed the Server connection and configured the source file properly, you have to update all data. Follow the instructions bellow to update the dashboard.

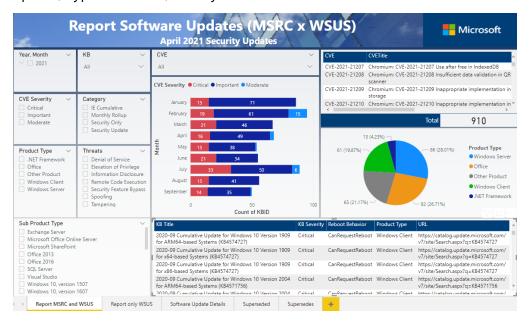




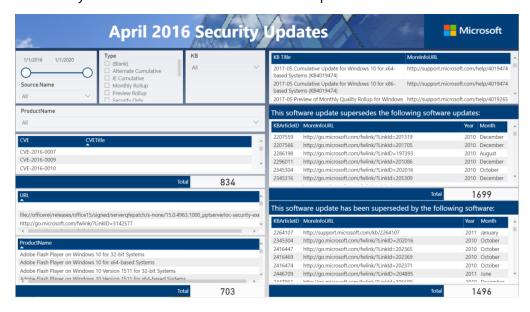
3 Understanding and explaining the results

Once we have the PowerBI Dashboard updated, it is easy to get info about CVE, KB, Superseded KB and so on.

There is a variety of options to filter information, thus you can filter by Period, Severity, Type of update, Type of Threats, also by KB number or Product.



Once you have applied those filters you will have the information about the URL to download the fix or the URL that explains the fix. Additionally, you will see both the newer and the older KB based on your filters under the tab "Software Update Details".



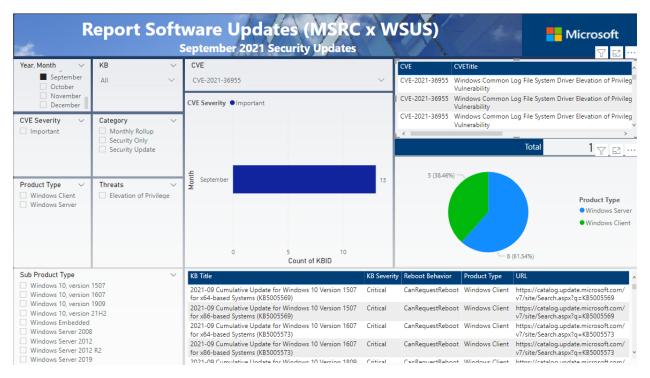


SAMPLE 001: Dashboard -> Report MSRC and WSUS

Source.Name: JSON file and WSUS Database.

Type: Security Update.

Filter: CVE-2021-36955



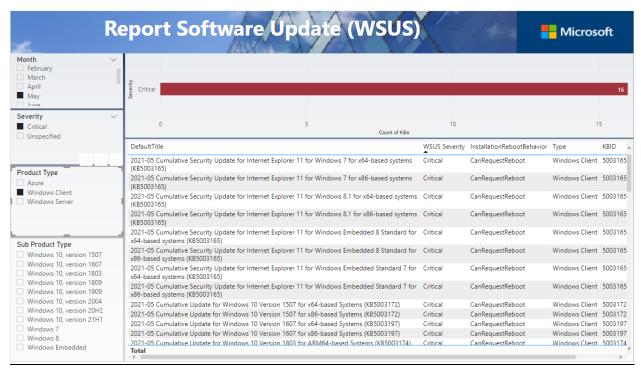
Applying those filters, you got the information about the CVE, this tab has a combination of information coming from MSRC and WSUS database. You can grab the KB names, URL to get more information about those KBs, type of Threats, Severity (CVE and KB itself).



SAMPLE 002: Dashboard -> Report only WSUS

Source: WSUS Database.

Filter 1: Month (May). Filter 2: Severity (Critical), Filter 3: Product Type (Windows Client)



Applying those filters, you got the information about KBs for Windows Client, where they are created on May-2021 and also are Critical. You can export the list to generate a SUG in SCCM for instance.

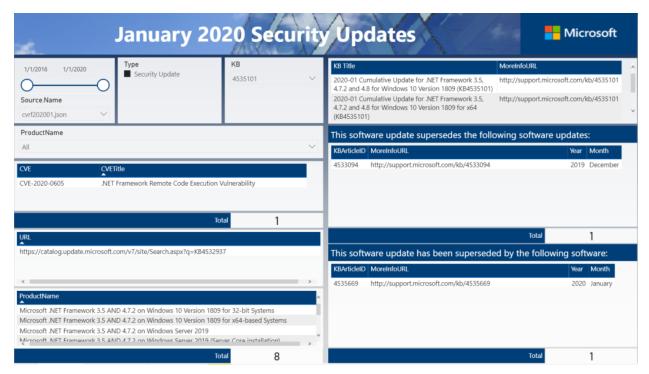


SAMPLE 003: Dashboard -> General tab

Source.Name: JSON from January 2020.

Type: Security Update.

KB: 4535101.

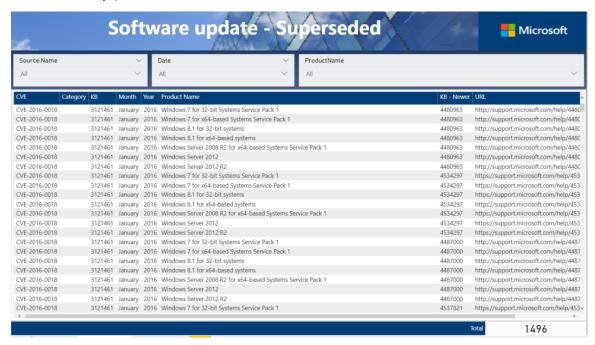


So applying those filters, you got the information about URL do Download the fix from Microsoft Catalog, also info about the ProductName involved, more details about this KB we can consult the Microsoft Support webpage, and finally we can get information about the older KB (4533094 | December 2019) or the newer KB (4535669 | January 2020).

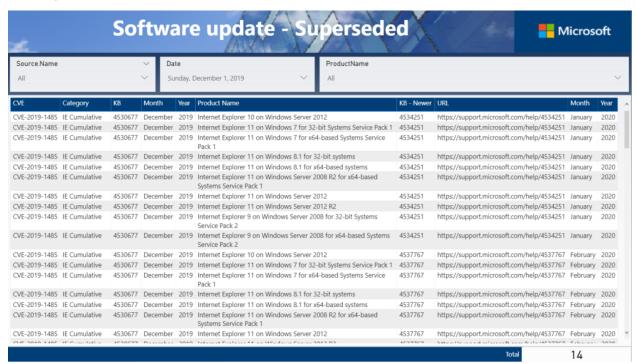


SAMPLE 004: Dashboard -> Superseded tab

In this tab is possible to get a list of all Superseded KB, based on Source.Name (JSON file), or by date, or also by product.



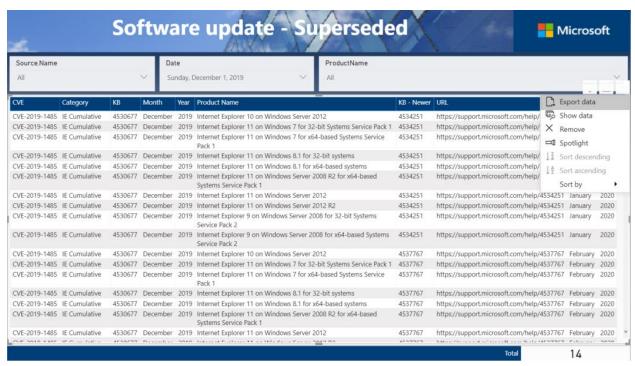
Let's say we need to know the KB newer based on all KB delivered on December 2019.



So now we have a list of current KB (December/2019 our filter), and the KB-Newer its URL and Date.



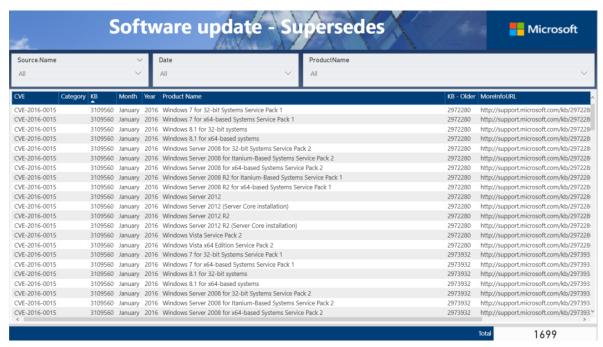
It's also possible to export this list to CSV file, if is needed. To do that click on the list (anywhere), then click on (...) upper right corner, then click on "Export data"



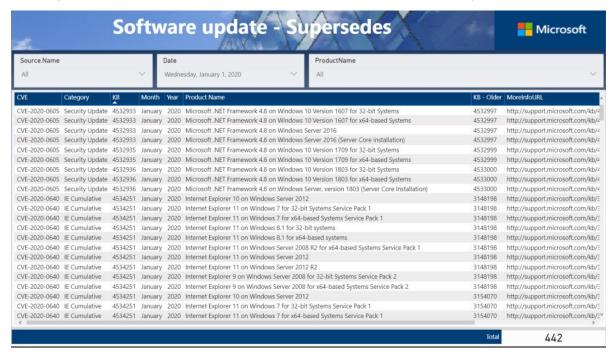


SAMPLE 005: Dashboard -> Supersedes tab

In this tab is possible to get a list of all Supersedes KB, based on Source.Name (JSON file), or by date, or also by product.



Let's say we need to know all older KB based on KB delivered on January 2020.



So now we have a list of current KB (Jan/2020 our filter), and the KB-Older, its URL and Date.



It's also possible to export this list to CSV file, if is needed. To do that click on the list (anywhere), then click on (...) upper right corner, then click on "Export data"

