Title:

HardwareProfileValidator

Overview and Guide

History

Version	State/Change	Date	Author
1.0	First release	08/04/2020	Jochen Schmitt, Robin Heiming
1.1	Fixes including text and images	11/8/2020	Jochen Schmitt
1.2	Changes for Version 1.3	10/26/2021	Jochen Schmitt
1.3	Changes regarding Windows 11 support	01/24/2022	Jochen Schmitt

1 Table of content

2 Introduction

The HardwareProfileValidator validates the device that should be installed using the Empirum WinPE Environment was previously identified and treated by the Empirum Administrator. This ensures that only approved, known and managed devices will be delivered to your users and customers.

Let's have a closer look ...
During the Empirum WinPE Installation, the PreOS Package „DriverIntegration" identifies the device using WMI methods to get the Name of the SystemManufacturer and SystemModel. With these informations the „DriverIntegration" package checks the drivers.json file, administered by the Matrix42WinPEDriverAssistant.exe, for a known association. Even if the „DriverIntegration" package does not find a valid association and therefore drivers, the WinPE Installation will proceed. This can result in a device that is not properly installed with all the drivers needed. The person installing the device will probably not identifiy this problem and will deliver this device to the user and customer. This will lead to Incidents and unsatisfied users. That is the point, where the HardwareProfileValidator will help. The HardwareProfileValidator PreOS Package has to executed right after the DriverIntegration and vaildates, that the DriverIntegration package has detected a known model and copied or extracted the appropriate drivers. The HardwareProfileValidator checks the log file for known issues and messages. If a known problem was found, the HardwareProfileValidator PreOS Package will stop for about two hours and sends an error message to the Empirum Console.
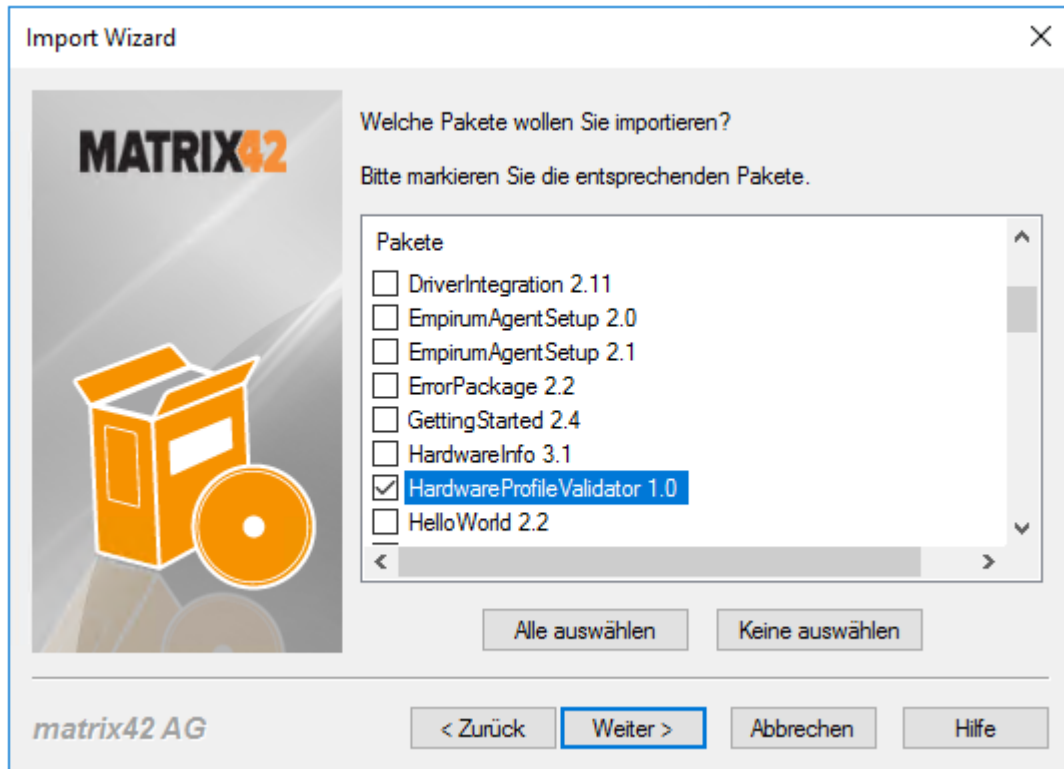
3 Installation

The included ZIP file contains an unpacked Empirum structure like the Empirum WinPE AddOn. This Empirum structure has to be copied in the existing Empirum structure on the EmpirumServer. This places the WinPE package in the PackageStore folder and is ready to get imported.
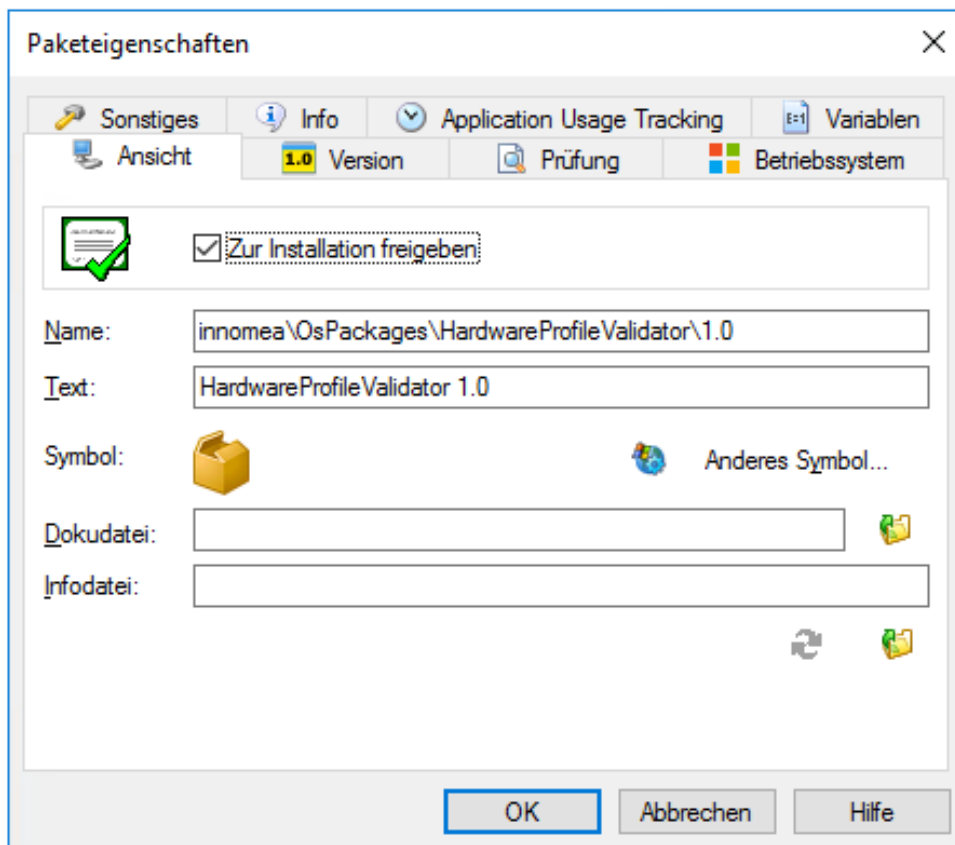
4 Import of PreOS-Packages

With the previous steps you prepared the package files for the import process to the Empirum structure and database. In addition, you must import the package using the Management Console to be prepared for distribution. If this topic is new for you, you can grab helpful instructions from the Step by step Guide on help.matrix42.com.

During the Import Wizard choose "HardwareProfileEditor" from the list and activate this package for distribution. The two following figures show what is important during and after the import. Please note that the available version may be higher than the one shown here.

1 – Selection window from the Import Wizard (preferably use 'select none' before proceeding)
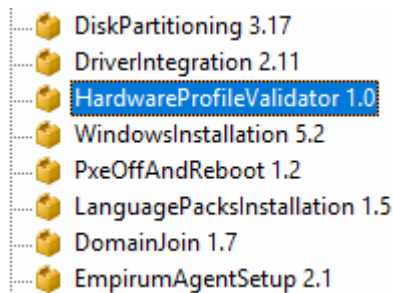

2 -Package properties: 'Ready to install'

4.1 *Sequence and dependencies*

Because the arrangement of the WinPE packages is affecting the installation sequence, you must arrange them in the right order. This package has to be arranged after 'DriverIntegration' and before 'WindowsInstallation.

The following figure shows where the "HardwareProfileValidator 1.x" package must be inserted. Please note that the available version may be higher than the one shown here.

5 Assignment

Now you need to assign the package to a configuration- or assignment groups in which the OS installation will be done using WinPE.

6 Output

6.1 *Management Console*

If the validation fails, no other PreOS-Packages will be executed and the installation stops for two hours. The error messages will be shown in the Management Console under 'Show log …', 'SWDepot-Log' and more detailed in 'PXE-Log'.

Example SWDepot-Log entries:

Paket	Version	Revision	Modus	Ergebnis	Meldung
HardwareProfileValidator 1.0	1.0	0	Install	Failure	ErrorMessage : DriverIntegration failed. Installation stopped!
DriverIntegration 2.11	2.11	0	Install	Success	

Example PXE-Log entries:

[PEAgent] [WinPE] PreOS Package execution failure. Rebooting client in 7200 seconds.
[PEAgent] [WinPE] Unable to find driver assignment in control file for vendor: 'FUJITSU' and model: 'LIFEBOOK U748'.
[PEAgent] [WinPE] DriverIntegration failed. Installation stopped!
[PEAgent] [WinPE] ExactDriverSearch is set to: 0
[PEAgent] [WinPE] Warning: Drivers are mandatory. The script will abort and reboot if there is no valid driver.

6.2 *Client*

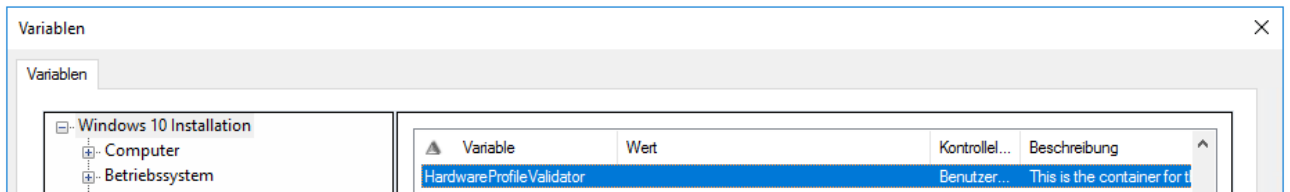At the client the failed validation will be shown like this:

7   Configuration options

The main focus of the HardwareProfileValidators is to ship only known and validated Windows Installations to the users and customers. That is why the installation will not proceed, if the device is unknown. You can use variables to define exceptions. You can define a variable to proceed the installation for a defined computer even the model is unknown. Another variable could be used to do an exact driver search like in the old days of DriverIntegration.

7.1 *DriversAreNotMandatory*

If you would like to install an unknown device, you could set an variable to proceed the installation even the device is unknown. The HardwareProfileValidator will then not verify the log file for any reasons.

The exception is defined using the variable HardwareProfileValidator.DriversAreNotMandatory. Setting this variable to 1 respectively not equal 0, the installation will proceed like HardwareProfileValidator is not inplace.

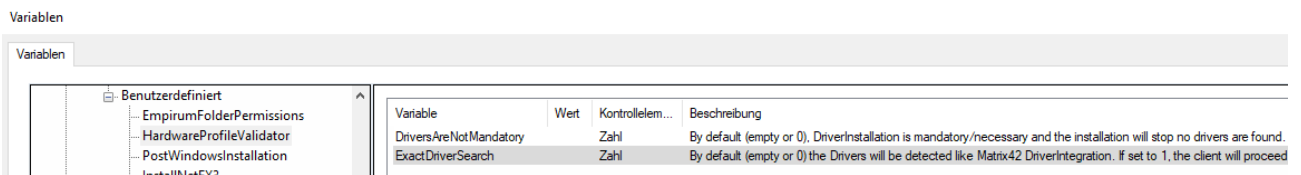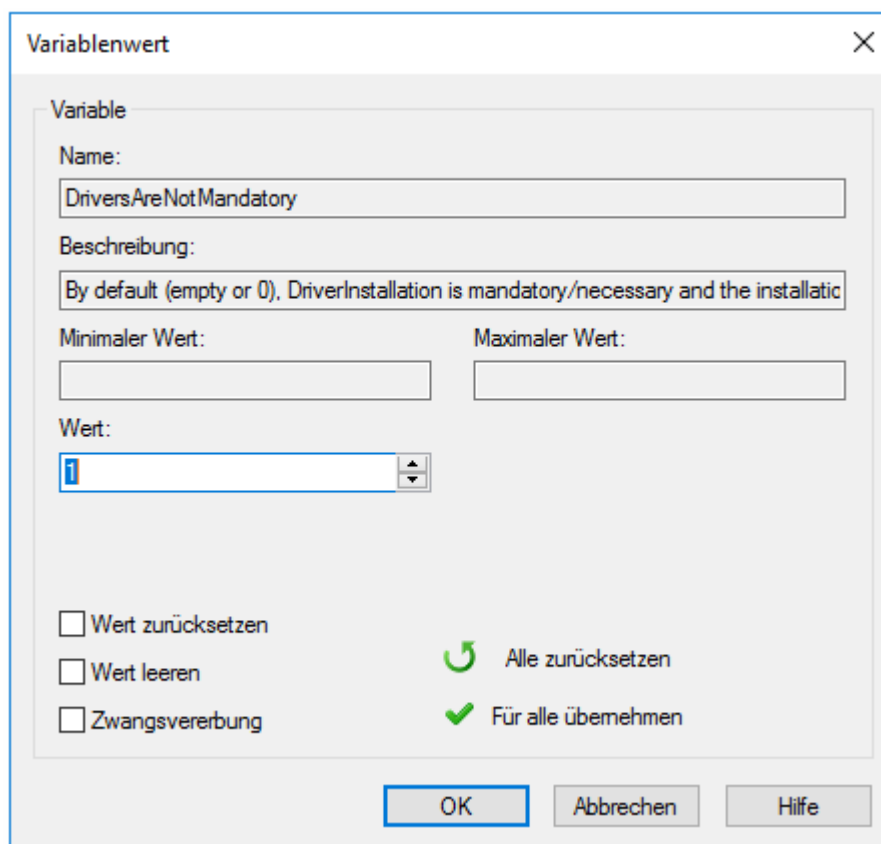*3- Variable "HardwareProfileValidator"*

Abbildung 4: Variable "HardwareProfileValidator.DriversAreNotMandatory"

Set a value or exception

7.2 *ExactDriverSearch*

Matrix42 changed the driver search method in the DriverIntegration package. Thus, drivers for a "Surface Pro 7+" will be found, if you added a "Surface Pro 7" earlier with the WinPEDriverAssistant. If you like, that the installation will stop if "Surface Pro 7+" will not find an exact driver assignment for "Surface Pro 7+", you can set the variable "ExactDriverSearch" to 1.

Set a value resp. exact driver search

7.1 *LenovoUseSystemFamily*

The option LenovoUseSystemFamily could be used, if you use a customized DriverIntegration package. This option could not be used, if you do not have a customized DriverIntegration package in use.

8 Logs

HardwareProfileValidator uses also the settings of the WinPE installation to create a logfile which can be found in \\%EmpirumServer%\EmpInst$\Wizard\OS\WinPeStatus\%DomainName%_%ComputerName% and is named 'innomea_HardwareProfileValidator.log'.

8.1 *Example*

innomea_HardwareProfileValidator.log

```
Warning: Drivers are mandatory. The script will abort and reboot, if there is no
valid driver.
DriverIntegration failed. Installation stopped!
Could not find manufacturer 'VMware, Inc.', model 'VMware7,1' and OS type
'Windows10' in Drivers.json
```

9 History of HardwareProfileValidator

Version	Comment
1.0	**Initial Release**
1.1	Modifications regarding reboot and messages
1.3	Changes to the package to check the drivers.ini/json itself and not the log file.
1.4	Changes regarding Windows 11 support