



Usage and benefits of Microsoft PowerShell in modern system administration

Increasingly, the modern answer to the question, „How do I efficiently implement this IT-administration task?“ is „With PowerShell!“ Many organizations are already on their way to leveraging this powerful framework to its full potential. But the road is rocky. PowerShell is not trivial to tap into and comes with many hurdles, partly for security reasons and partly because it’s not meant to be used by just anyone. A transfer of knowledge is laborious. So the application often remains reserved for highly skilled administrators, which in turn limits its widespread use.

holistic-net uses Microsoft PowerShell in their daily project work. Especially in migration projects, when setting up Exchange infrastructures, on-premises, or in the cloud, we experience and use PowerShell’s full effectiveness. However, continuous discipline is required when passing knowledge in the form of PowerShell scripts. Over and over, the question is asked:

„Who knows how to solve a specific problem via PowerShell? There was once a script. Where is it? Does it fit the current requirement? Who understands it? Who can customize it? Who can run it?“

In many organizations, this causes a defensive attitude that prevents the beneficial use of PowerShell. People dodge it by reaching for the mouse and lament:

„I repeatedly have to do the same clicks over and over again; isn’t there anything more convenient?“

There is!



„The powershell launch center makes it possible to deploy staff efficiently, manage systems quickly and flexibly, and minimize risk in day-to-day systems management.“

What is the basic approach of Microsoft PowerShell?

Primarily, PowerShell is to be understood as a cross-platform framework freely offered by Microsoft for handling basic administrative tasks in Windows systems. From version 6 on, PowerShell also supports the Linux and macOS platforms and is becoming a powerful tool in this regard.

```
Windows PowerShell
Copyright (C) Microsoft Corporation. Alle Rechte vorbehalten.

Lernen Sie das neue plattformübergreifende PowerShell kennen - https://aka.ms/pscore6

PS C:\Users\Günter Mohren.HOLISTIC-NET>
```

(PowerShell Host)

The framework’s functions enable the user to implement pending tasks for the platforms’ configuration and administration by issuing commands in PowerShell’s user interface, the PowerShell host console. The PowerShell Engine is the command-line interpreter that processes the input and thus forms the heart of PowerShell. The commands are called cmdlets (pronounced commandlets).



Similar functionality is usually more complicated, sometimes even impossible, to implement by clicking through the system settings of Windows. Administration tasks can be executed much more efficiently using PowerShell given that the operator knows the right commands and parameters. The number of pre-installed cmdlets increases steadily with each new version of PowerShell being released.

How you work out of the box:

```

111
112
113 $users | ForEach-Object {
114
115     $firstName = $_.givenName
116     $lastName = $_.surName
117     $displayName = $_.displayName
118     $samAN = $_.sAMAccountName
119     $SMTPAddress = $_.primarySMTP
120     $userPassword = $_.initialPassword
121
122
123     $scn = $displayName
124     $relativDistinguishedName = "CN=$scn"
125     $distinguishedName = "$relativDistinguishedName,$searchBase"
126
127     $SUPN = $SMTPAddress
128
129     $SMTPDomain = $SMTPAddress.Split('@')[1]
130     $password = ConvertTo-SecureString $userPassword -AsPlainText -Force
131
132
133     # Check whether SAM-Account-Name is already in use in specified AD-Domain
134     # -----
135
136     $userCheck = Get-ADObject -Filter "samAccountName -eq '$samAN'" -Server $DCServer -Properties * -I
137     if ($userCheck -ne $null)
138     {
139         Write-Host "Check of user's AD object status shows conspicuity..."
140         Write-Host "Info: -> The specified user with SAM-Account-Name '$samAN' is already existing in
141         # AD
142         Remove-PSession -session $SessionAD
143     }
144
145

```

So you can work with the holistic powershell launch center:

1 Input **2 Output**

Create AD User (SelectionListsExam)

Creates a new user in selectable AD-Paths as a simple exam for Selection-Lists

TicketNo. Enable notification by email

First Name Last Name Display-Name SAM-Account-Name

SMTP Address Password

Active Directory Path

- OU=HPLC,DC=holistic-dev,DC=de
- undefined

Account & Password Settings

- User has to change PW at first login and frequently
- User is free to change PW - PW never expires
- User is free to change PW - PW expires
- User can not change PW - PW never expires
- User can not change PW - PW expires

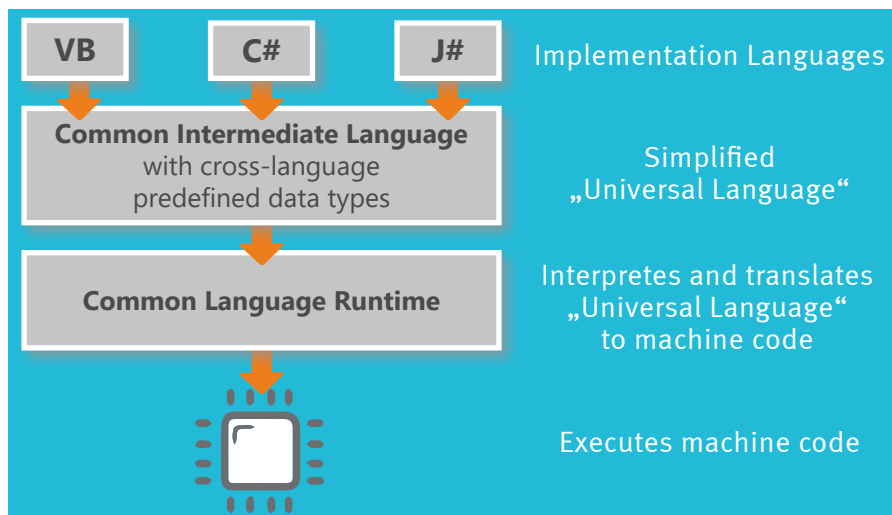


However, PowerShell shows its full strength in automating use cases. For this purpose, complex scripts/programs can be developed with the integrated PowerShell Scripting Language. Command input is done via another PowerShell host, the so-called PowerShell ISE (Integrated Scripting Environment, ISE for short). The ISE is a modern windows-based graphical user interface with an integrated script editor, debugger and IntelliSense. The PowerShell standard cmdlets relieve the user of implementing routine tasks and significantly simplify and accelerate the development process.

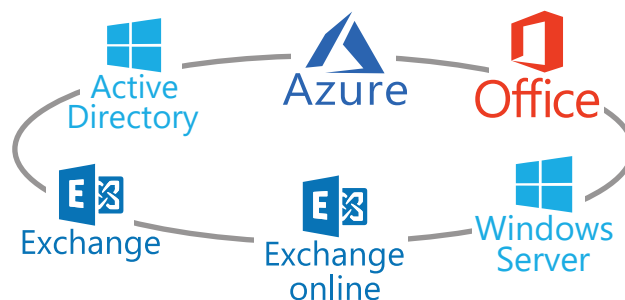
Users can leverage the full power of the .NET framework with PowerShell scripts.

PowerShell works with objects. Cmdlets are designed to perform exactly one particular task and return a specific type of object as a result. The PowerShell engine’s cmdlet library consists of a collection of C# classes based on the Common Language Runtime (CLR) of the .NET framework, e.g. WMI classes, COM objects.

PowerShell manages the whole world of Microsoft services



The commands provided by installing PowerShell are not limited to functions for Windows Client & Server administration. The command library also provides access to the directory services Active Directory and Azure AD, Exchange on-premise/online, and other parts of the Microsoft online service - Office 365.





Control and safety are paramount

However, PowerShell’s strength lies in its ability to automate everyday activities and complex procedures by scripting. Scripts ensure processing commands under full control in every individual step including necessary checks of operators input. Incorrect system settings are eliminated and the security of system operation is significantly increased. Additionally scripting is increasing efficiency of resources. Even less trained users can use PowerShell scripts to operate the infrastructure entrusted to them in less time, with maximum security and control. The resources for creating scripts and those that are using them can be separated as well.



holistic powershell launch center (hplc)

is the answer to the challenge faced by many companies that want to operate their own system landscape efficiently, in a controlled manner and, above all, with sufficient security.

From valuable experiences holistic-net developed an idea

For many years holistic-net have successfully supported a large number of its customers in the migration from HCL Notes to Microsoft Outlook. The basis of our success lies in our vast knowledge and experience in the installation and operation of infrastructures based on Notes/Domino and Outlook/Exchange. If you want to be efficient, you need excellent tools and knowledge of available migration paths. Migrations of any size require security, control, as well as efficiency. Without the skilled use of PowerShell, holistic-net would not be able to offer its customers the support they need.

Important use cases with high security requirements

- User provisioning, e.g. onboarding & offboarding
- Resource management, e.g. meeting room management
- Set up mailboxes and distribution groups
- Set up out-of-office messages for mailboxes
- Manage Windows Services

Furthermore, the potential of PowerShell does not end with the migration. For our customers, a new world opens up, and that world needs to be managed. Their Active Directory is extended in both the range and variety of entries, the Exchange environment is added. System administrators are confronted with a wide range of tasks that have to be processed securely in recurring workflows.



holistic powershell launch center (hplc)

is the solution for everyday modern system administration. hplc allows anyone to execute PowerShell scripts in a controlled manner without the need for PowerShell expertise.

More security, control & efficiency is not possible!



For most companies, regardless of size, it isn't easy to keep information about all their systems' administration and distribute that knowledge among several shoulders. A challenge not only real for companies that have completed a mailing platform migration. Systems evolve, and their complexity increases in both functionality as well as their areas of application, but they also become more powerful. Care must always be taken to ensure that all operations are carried out securely. Understandably, many IT departments cannot provide the necessary resources and, above all, the mandatory technical knowledge. More often than not, the goal of having redundant access to these competencies seems far fetched.

holistic-net were able to experience PowerShell's many advantages in developing and using complex scripts in their daily operation and support of crucial systems. From this valuable experience, an idea was born.

Our product "holistic powershell launch center" uses PowerShell's essential possibilities and features and provides them to our customers packed in a user-friendly web application.

hplc
holistic powershell launch center

```
PS COMPANY > hplc --version  
hplc Version 1.0.8062.28026
```

```
PS COMPANY> hplc --help  
This tool provides a collection of helpful PowerShell scripts
```

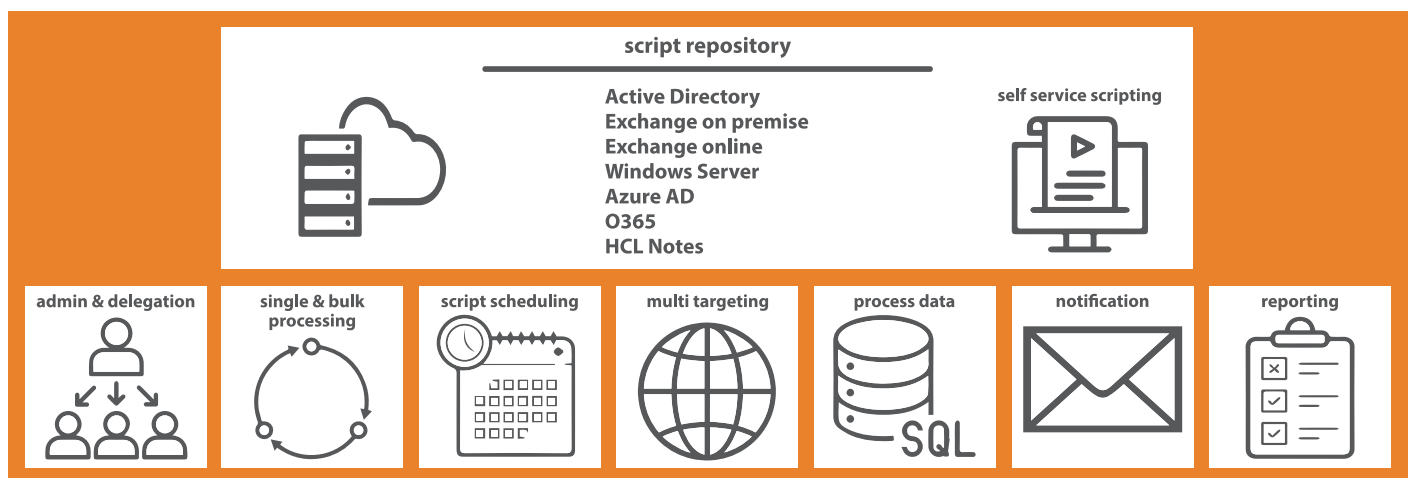
Usage:
Click on a category on the left side to get an overview of available scripts
Then, click on a specific script to fill a script with parameters
Finally, click on the 'Run' button to execute the script

Good luck and be careful :)

```
PS COMPANY>
```

41 Available scripts	7 Current jobs	2 Current templates	Jan 27, 2022 Last repository update
0 Open user deletion requests			

Copyright © 2022 holistic-net. All rights reserved. Version 1.0.8062.28026



The holistic powershell launch center leverages the Microsoft PowerShell framework and its capabilities in combination with functional extensions such as

- Delegation
- Bulk processing
- Script repository
- Script scheduling
- Email notifications
- Process data reporting
- Credential management

hplc - Advantages & Benefits

- Applicability to major current and future target system platforms
- PowerShell & target system skills are not a prerequisite
- Avoidance of incorrect settings with all adverse consequences
- Creation of resource redundancy through delegation
- Efficiency increase
- Reduction of total cost of ownership

Have we piqued your interest?

Then contact: Günter Mohren, +49 511 760728-46, guenter.mohren@holistic-net.de