

SPICE WORLD

2022
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Unlocking the Power of Regular Expressions with PowerShell

<https://github.com/jdhitsolutions/SpiceWorld2022-PSRegex-Intro>



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What is a Regular Expression?

- A way of describing data (text)
- Based on a set of accepted and standardized patterns
- Introduced in 1951
 - Incorporated into Unix
 - Led to *grep*
 - “*Global search for Regular Expressions and Print lines*”
- PowerShell supports the full regular expression library from .NET



Why Regular Expressions?

- Validating data
- Finding data
- Fixing data
 - Splitting
 - Replacing

Patterns

- (202) 867-5309
- 192.168.2.3
- \\server01\public





Patterns

- `\(\d{3}\)\s\d{3}-\d{4}`
- `(\d{1,3}\.){3}\d{1,3}`
- `\\\\\\w+\\\\\\w+`



Regular Expressions are Classy

Pattern	Match
\w	Any word character, including numbers and the underscore (_)
\d	Any digit
\D	Any non-digit
\s	Any whitespace
\W	Any non-word character
\S	Any non-whitespace

Case-Sensitive

With Qualifiers

Qualifier	Description
*	Match 0 or more of the preceding pattern
+	Match 1 or more of the preceding pattern
?	Match 0 or 1 instance of the preceding pattern
{n}	Match <i>exactly</i> N number of the preceding pattern
{n,m}	Match <i>at least</i> N number of the preceding pattern and <i>no more</i> than M number
{n,}	Match <i>at least</i> N number of the preceding pattern

Special Characters

Character	Description
.	Any single character
[xyz]	Match at least one of the characters in the brackets
[a-zA-Z]	Match at least one of the characters in the range. Case sensitive.
[^xyz]	Match any character <i>except</i> what is in brackets
^	Match the beginning characters
\$	Match the ending characters
\	The regular expression escape character



Escape Clause

- You'll need to escape regular expression characters if you need to match them
 - `[]<>?^$`
- `\`
- `[2022-12-22]` Some data goes here
 - `\[[\d-]+\]`
 - Match on the literal [
 - `\[`
 - Match on a digit or the dash
 - `[\d-]`
 - Match on the literal]
 - `\]`
 - Match: `[2022-12-22]`

Show Me

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Regular Expression “Gotchas”

- Comparisons are True/False
- Watch the float
 - How exact do you need to be?
- Test for known failures
- You still might need to validate
- You have to know your data
 - It should be predictable
 - It should be consistent



Advanced Stuff

- Look ahead and look behind
 - `(?<=\d\s)\w+\.\w+`
 - 35 foo.bar
 - foo.bar
- Optional matches
 - `^\d{3}(\-[a-z]+)?$`
 - 432
 - 678-xyj
- Regex Options
 - Configuring case
 - Multiline search
 - Ignore pattern whitespace



Advanced Stuff

- More with the [regex] type accelerator
 - [regex]\$rx = “^[a-z]{1}\.\w{2,7}@company.com\$”
 - \$rx.ismatch("f.bar@company.com")
 - True
 - \$rx.match("f.bar@company.com")
 - Groups : {0}
 - Success : True
 - Name : 0
 - Captures : {0}
 - Index : 0
 - Length : 17
 - Value : f.bar@company.com
 - ValueSpan :

Resources

[Help about_regular_expressions](#)

[Help about_comparison_operators](#)

[Help about_wildcards](#)



Resources

<https://www.regular-expressions.info>

<https://regexlib.com>

<https://rubular.com>

<https://regex101.com>

<https://pluralsight.pxf.io/psregex>



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Thank you.



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