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Thread: [\[Powershell\] Basic Encoding/Decoding \(Base64 | Binary | Hex\)](#)

Qismon - June 5, 2024, 10:15 am

Here are 3 of the most common ways to encode/decode a string in powershell. Each example has an encode and decode function, as well as an example to show you how to use it.

[BASE64 ENCODING/DECODING]

Code function Convert-StringToBase64() {

Param(

[Parameter(Mandatory=\$True, Position=0)]

[string] \$stringIn

)

\$baseEncoded = [Convert]::ToBase64String([Text.Encoding]::UTF8.GetBytes(\$stringIn))

return \$baseEncoded

}

function Convert-Base64ToString() {

Param(

[Parameter(Mandatory=\$True, Position=0)]

[string] \$stringIn

)

\$decodedString = [Text.Encoding]::UTF8.GetString([Convert]::FromBase64String(\$stringIn))

return \$decodedString

}

Usage:

\$plainText = 'https://the.earth.li/~sgtatham/putty/latest/w64/putty.exe'

\$encodedText = Convert-StringToBase64 \$plainText

Write-Host \$encodedText

\$decodedText = Convert-Base64ToString \$encodedText

Write-Host \$decodedText

[BINARY ENCODING/DECODING]

Code function Convert-StringToBinary() {

Param(

[Parameter(Mandatory=\$True, Position=0)]

[string] \$stringIn

)

\$stringBytes = [System.Text.Encoding]::UTF8.GetBytes(\$stringIn)

\$binaryArray = \$stringBytes | ForEach-Object {[System.Convert]::ToString(\$_, 2).PadLeft(8, '0')}

\$binaryString = \$binaryArray -join("")

```
    return $binaryString
}
```

```
function Convert-BinaryToString() {
    Param(
        [Parameter(Mandatory=$True, Position=0)]
        [string] $stringIn
    )

    $arrayIndex = 0
    $bytesArray = New-Object System.Collections.ArrayList

    while($arrayIndex -lt $stringIn.Length) {
        $binarySection = $stringIn.Substring($arrayIndex, 8)
        $binaryBytes = [System.Convert]::ToByte($binarySection, 2)

        $bytesArray.Add($binaryBytes) | Out-Null
        $arrayIndex += 8
    }

    $decodedString = [System.Text.Encoding]::UTF8.GetString($bytesArray.ToArray())

    return $decodedString
}
```

Usage:

```
$plainText = 'https://the.earth.li/~sgtatham/putty/latest/w64/putty.exe'
```

```
$encodedText = Convert-StringToBinary $plainText
Write-Host $encodedText
```

```
$decodedText = Convert-BinaryToString $encodedText
Write-Host $decodedText
[HEX ENCODING/DECODING]
```

```
Code function Convert-StringToHex() {
    Param(
        [Parameter(Mandatory=$True, Position=0)]
        [string] $stringIn
    )

    $hexEncoded = ""

    $stringIn.ToCharArray() | ForEach-Object -Process {
        $hexEncoded += '{0:x}' -f [int][char]$_
    }

    return $hexEncoded
}
```

```
function Convert-HexToString() {  
    Param(  
        [Parameter(Mandatory=$True, Position=0)]  
        [string] $rawHexString  
    )  
  
    $decodedString = ""  
  
    for($stringIndex = 0; $stringIndex -lt $rawHexString.Length; $stringIndex += 2) {  
        $decodedString += [char][int]("0x" + $rawHexString.Substring($stringIndex,2))  
    }  
  
    return $decodedString  
}
```

Usage:

```
$plainText = 'https://the.earth.li/~sgtatham/putty/latest/w64/putty.exe'
```

```
$encodedText = Convert-StringToHex $plainText  
Write-Host $encodedText
```

```
$decodedText = Convert-HexToString $encodedText  
Write-Host $decodedText
```

Ren And Stimpy - June 5, 2024, 10:18 am

Great share mate!! Thank you

mikeyp - November 27, 2024, 3:29 am

Very interesting, thanks for the information.