

Using Arrays and Hash Tables



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**PowerShell language
elements often used in
scripts**

**These are common
features found in many
programming languages**

**But you can use them in
an interactive console
session**

**You will use them
frequently**



Array

A data structure designed to store a collection of items





An array is a collection or group of things

Any PowerShell command that writes objects to the pipeline can create an array

Items in the array can be of the same or different types

- Typically array members are of the same type

You can manually initialize an empty array



```
PS C:\> $a = 3,5,9
```

Array Fundamentals

Any comma-separated list is an array



```
PS C:\> $a = 3, 5, 9
```

```
PS C:\> $a
```

```
3
```

```
5
```

```
9
```

Array Fundamentals

Any comma-separated list is an array
PowerShell will automatically “unroll” the array



```
PS C:\> $a = 3, 5, 9
PS C:\> $a
3
5
9
PS C:\> $a | Get-Member

TypeName: System.Int32
...
```

Array Fundamentals

Any comma-separated list is an array
PowerShell will automatically “unroll” the array
It is the objects in the array that matter



Demo

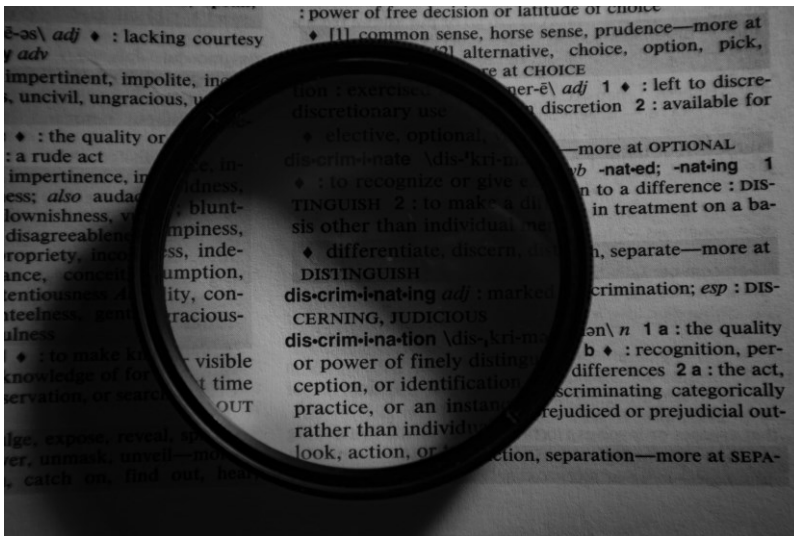
Working with Arrays in Windows PowerShell



Hash Table

A data structure with Key/Value pairs. Keys are unique.





Used often in PowerShell to store data

Create custom properties and values

Can be used as a lookup mechanism

Can be used to simplify running a command

- Splatting



```
PS C:\> $h = @{'Name='Jeff';Count=3}
```

Hash Table Fundamentals

You can manually create a hash table

@{Key = Value}

Separate entries with semi-colon or new line



```
PS C:\> $h = @{Name='Jeff';Count=3}
```

```
PS C:\> $h
```

Name	Value
----	-----
Count	3
Name	Jeff

Hash Table Fundamentals

The hash table name is the key



```
PS C:\> $h = @{Name='Jeff';Count=3}
```

```
PS C:\> $h
```

Name	Value
----	-----
Count	3
Name	Jeff

```
PS C:\> $h.name  
Jeff
```

Hash Table Fundamentals

The hash table name is the key

You can reference items like an object



Demo

Working with Hash Tables in Windows PowerShell





Key Take-Aways

PowerShell uses arrays and hash tables everywhere

- Custom properties with Select-Object
- Get comfortable with splatting

You will use extensively in PowerShell scripting

Read the help

- About_Arrays
- About_Hash_Tables

Advanced techniques with [System.Collections]

