

# Filtering with PowerShell

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# What is Filtering?



The process of removing unwanted objects from the pipeline

Get only the data you need

Can improve performance

# Filtering Philosophies

## Early Filtering

Filtering is done at the source

Filtered objects come through the pipeline

Usually better performing

## Late Filtering

Filtering is done at the destination

Everything comes through the pipeline, then filter

Poorer performance may be relative

Sometimes late filtering is your only choice

You can combine both approaches in the same  
PowerShell expression



Filter first...



Late filtering is not “bad” unless  
there are early filtering options  
you could have used.



# Filtering with Parameters



Filter



Name



ID



Include



Exclude

These are early filtering  
tools

Read full cmdlet help and  
examples



# Filtering with Where-Object

Incoming objects are  
piped to Where-Object

Aliases of *Where* and ?

Objects that pass a  
filtering test are  
passed down the  
pipeline



```
Get-Service | Where-Object {$_.Status -eq 'running'}
```

## Where-Object > Traditional Syntax

`$_` means “the current object in the pipeline”

Typically use a comparison operator

- `Help about_comparison_operators`

The entire expression must be True





```
Get-Service | Where Status -eq 'running'
```

## Where-Object > Modern Syntax

Simple comparisons only

Use an object's property name



```
Get-Service | Where {$psitem.Status -eq 'running'}
```

## Where-Object > Alternate Modern Syntax

If you find \$\_ confusing



```
Get-Service |  
Where {$_.Status -eq 'running' -AND $_.StartType -eq 'manual'}
```

## Where-Object > My Recommendation

Use the traditional syntax

It works anywhere

You need it for complex filtering



```
Get-Service -name w* |  
Where {$_.Status -eq 'running' -AND $_.StartType -eq 'manual'}
```

## Filtering Early and Late

Get all services that start with 'w' (early filtering)

Filter these results with Where-Object

Get in the habit of filtering early



```
Get-Service |  
Where {$_.name -like 'w*'} |  
Where {$_.status -eq 'running'} |  
Where {$_.StartType -eq 'manual'}
```

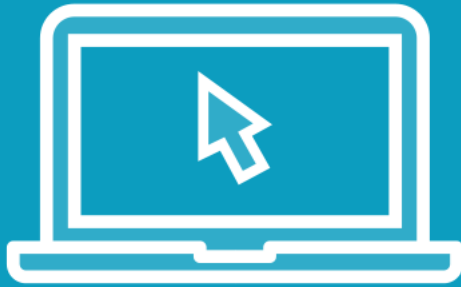
```
Get-Service |  
Where {$_.name -like 'w*' -AND $_.Status -eq 'running' -AND $_.StartType  
-eq 'manual'}
```

## Not the PowerShell Way

Yes, it will work but it is technically inefficient



# Demo



Filtering with PowerShell

