



WorkshopPLUS: SharePoint Server Administration

Troubleshooting: Tools



Agenda - Chapter 1

1

Out-of-the-Box Tools

2

External Tools

Out-of-the-box tools



PowerShell



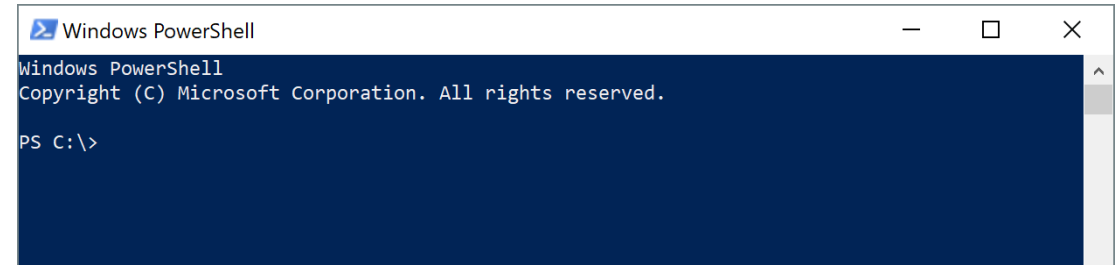
Developer Dashboard

PowerShell

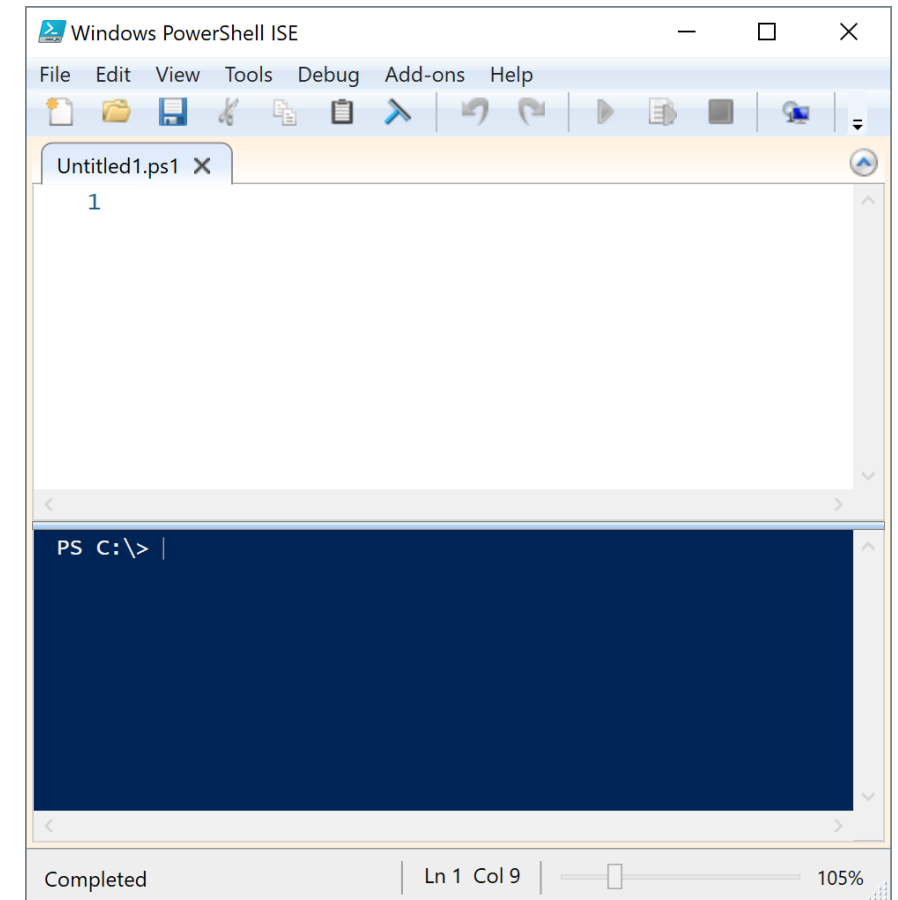
About PowerShell

- Script language to automate activities
- SharePoint heavily relies on PowerShell
- Can be used to configure, administer, audit and monitor SharePoint
- Current version is PowerShell v5.1
- PowerShell Integrated Scripting Environment (ISE) improves creating and debugging scripts

Important: PowerShell Core is not supported



A screenshot of a Windows PowerShell console window. The title bar reads "Windows PowerShell". The window has a dark blue background with white text. It displays the copyright notice: "Windows PowerShell Copyright (C) Microsoft Corporation. All rights reserved." followed by the prompt "PS C:\>" on a new line.



A screenshot of the Windows PowerShell ISE (Integrated Scripting Environment) window. The title bar reads "Windows PowerShell ISE". The window features a menu bar (File, Edit, View, Tools, Debug, Add-ons, Help) and a toolbar with various icons. A script editor pane shows a file named "Untitled1.ps1" with a single line of code containing the number "1". Below the editor is a console pane with a dark blue background and white text, showing the prompt "PS C:\> |". The status bar at the bottom indicates "Completed", "Ln 1 Col 9", and a zoom level of "105%".

Developer Dashboard

About Developer Dashboard

- Shows details for each executed request: Correlation ID, ULS entries, SQL calls, request duration, etc.
- Requires Usage and Health Service application
- Not enabled by default - use PowerShell to enable

http://sharepoint2016/ - Developer Dashboard - Internet Explorer

Requests Scenarios Animation MDS RUM

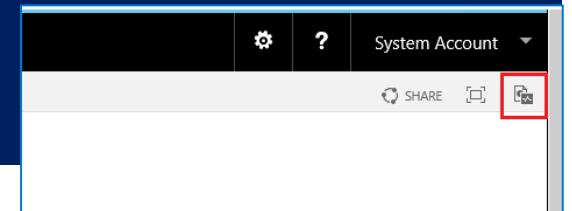
Request (GET:http://sharepoint2016/_layouts/15/viewlists.aspx?AjaxDelta=1)
Request (GET:http://sharepoint2016/_layouts/15/addanapp.aspx?Source=http://sharepoint2016/_layouts/15/viewlists.aspx&AjaxDelta=1)
Request (GET:http://sharepoint2016/_layouts/15/addanapp.aspx?Source=http://sharepoint2016/_layouts/15/viewlists.aspx)
Request (GET:http://sharepoint2016/_layouts/15/addanapp.aspx?task=GetMyNewApps&myappscatalog=0)
Request (GET:http://sharepoint2016/_layouts/15/new.aspx?FeatureId=%7B00bfea71-de22-43b2-a848-c05709900100%7D&ListTemplate=100&IsDlg=1)
Request (GET:http://sharepoint2016/_layouts/15/addanapp.aspx?task=GetMyApps&sort=1&query=&myappscatalog=0&ci=0&vd=0)
Request (POST:http://sharepoint2016/_layouts/15/new.aspx?FeatureId=%7B00bfea71-de22-43b2-a848-c05709900100%7D&ListTemplate=100&IsDlg=1)
Request (GET:http://sharepoint2016/_layouts/15/addanapp.aspx?task=GetMyNewApps&myappscatalog=0)
Request (GET:http://sharepoint2016/_layouts/15/addanapp.aspx?task=GetMyApps&sort=1&query=&myappscatalog=0&ci=0&vd=0)
Request (GET:http://sharepoint2016/_layouts/15/addanapp.aspx?Source=http://sharepoint2016/_layouts/15/viewlists.aspx)

Server Info Scopes SQL SPRequests Asserts Service Calls ULS Cache Calls

Request Summary	
Start Time	-
Duration	-
CPU Time	-
Managed Memory	-
Username	-
Page Checkout Level	-
Server Name	-
Client Address	-
Correlation ID	-

Aggregate Stats

```
$ContentService = [Microsoft.SharePoint.Administration.SPWebService]::ContentService
$DevDashboard = $ContentService.DeveloperDashboardSettings
$DevDashboard.DisplayLevel = "On"
$DevDashboard.Update()
```



Agenda - Chapter 2

1

Out-of-the-Box Tools

2

External Tools

External tools



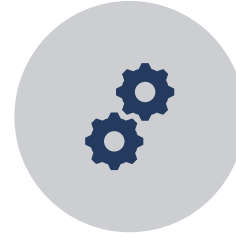
**Microsoft
Edge DevTools**



Fiddler



ULS Viewer



**Process
Explorer /
Process
Monitor**

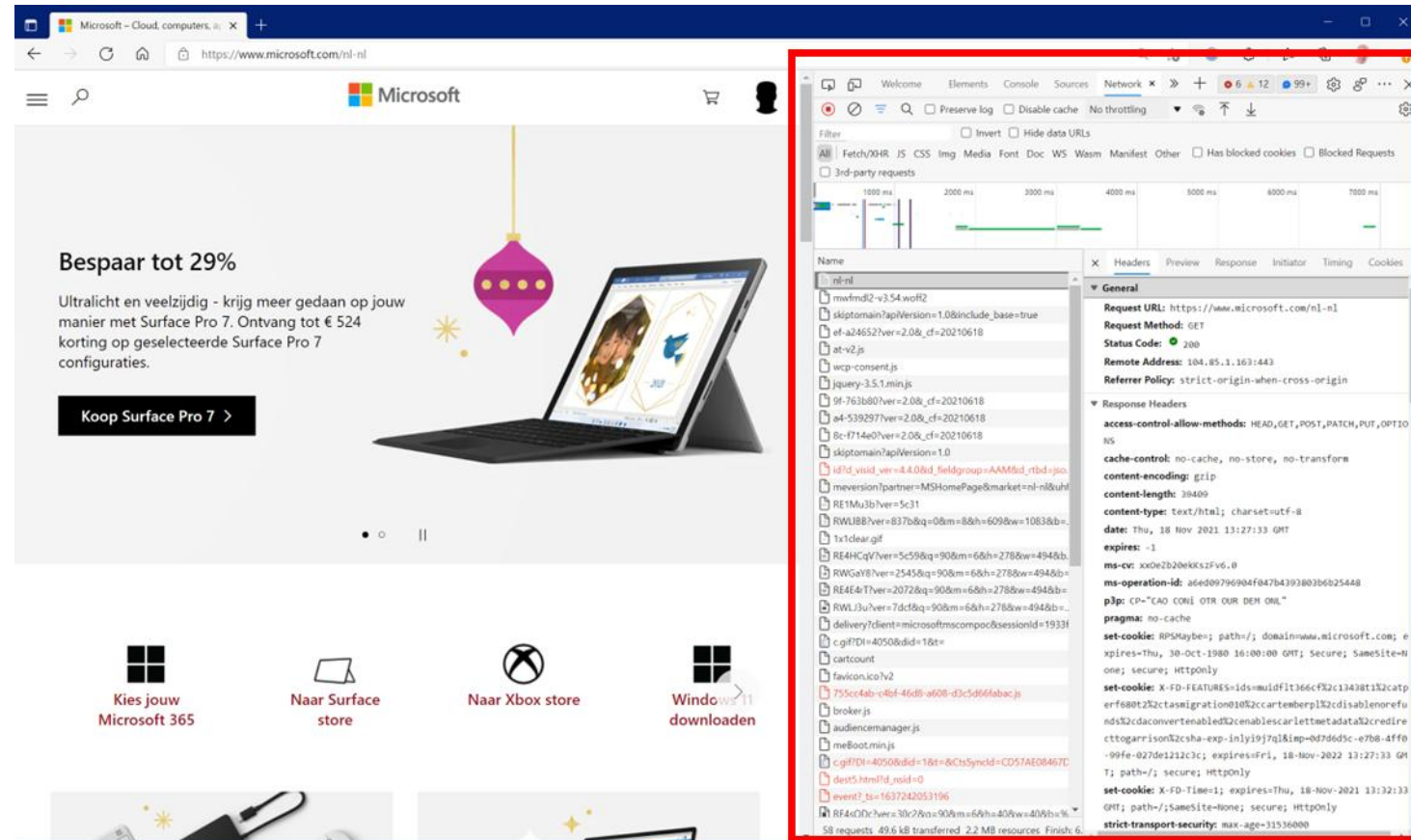


LogParser

Microsoft Edge DevTools

About Microsoft Edge DevTools

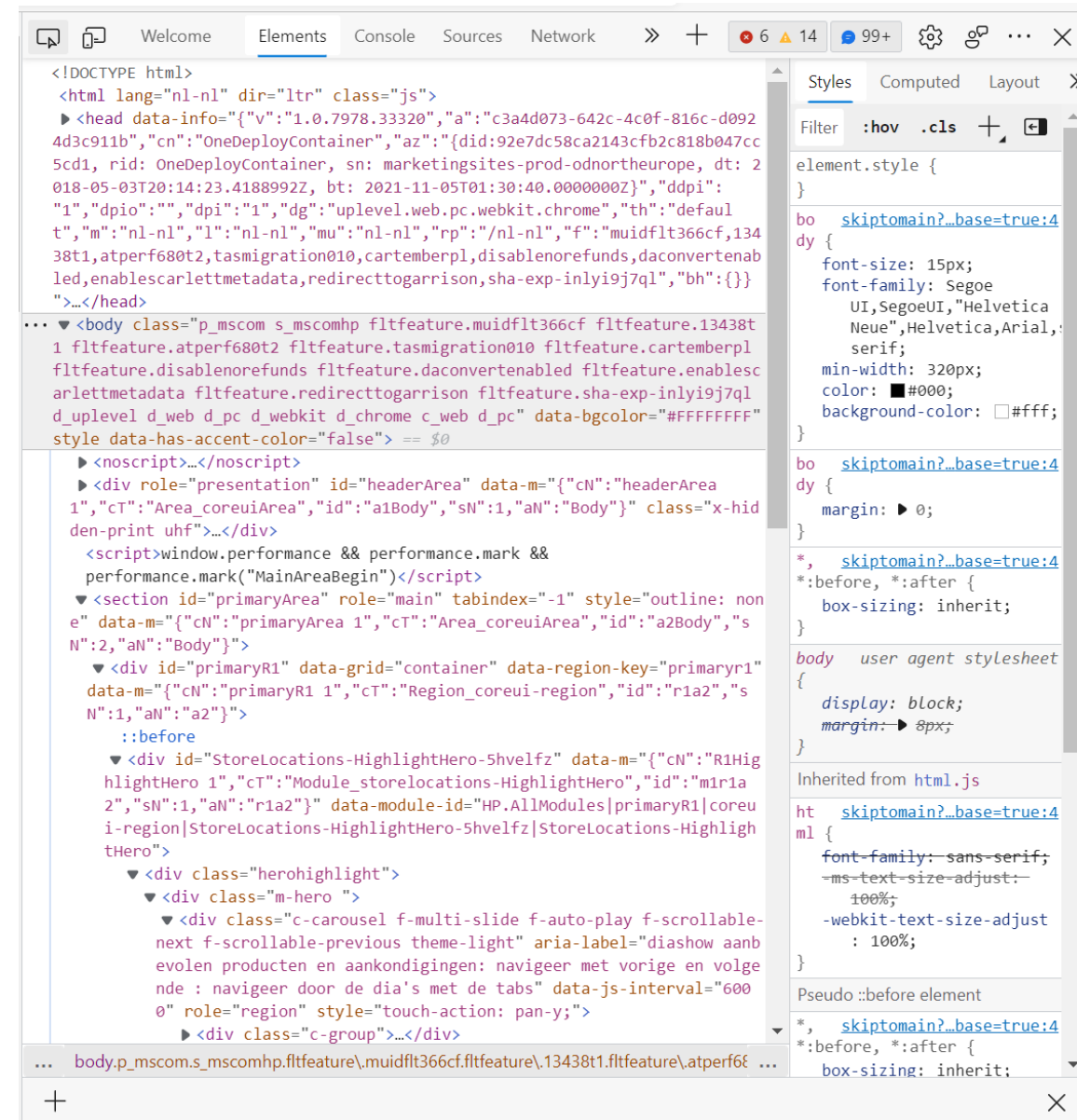
- Suite of tools to help you build, debug, test, and speed up your webpages
- Integrated and simple to use
- Provide a visual interface to the platform
- Enable fast experimentation
- Optimize application performance
- Open by pressing F12



Microsoft Edge DevTools - Elements

Elements menu

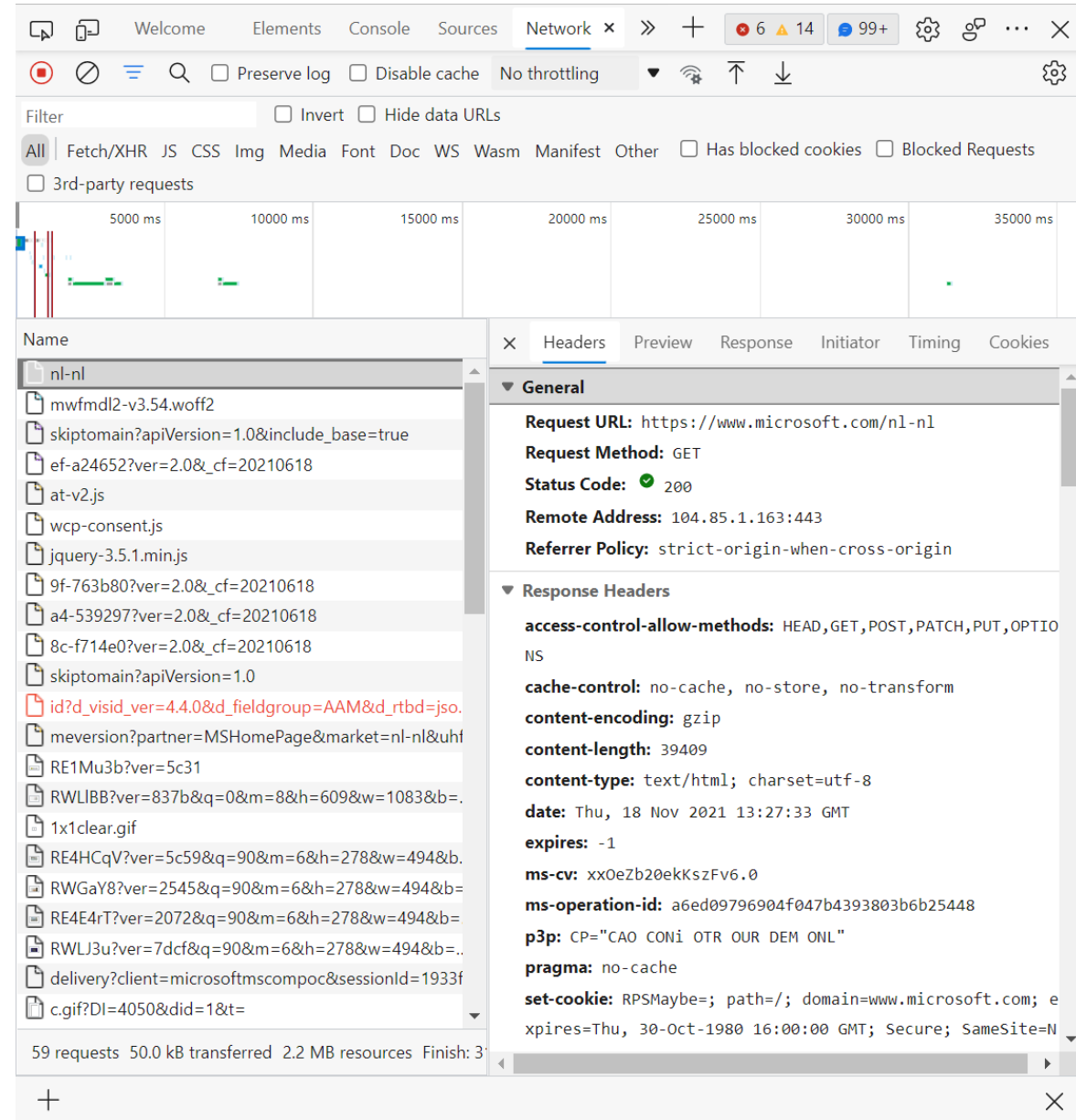
- Shows the structure of the webpage as it is being rendered
- Makes it possible to edit HTML and styles in a live page
- Possible without having to edit and reload your sources, so you can quickly solve display issues or experiment with new ideas



Microsoft Edge DevTools - Network

Network menu

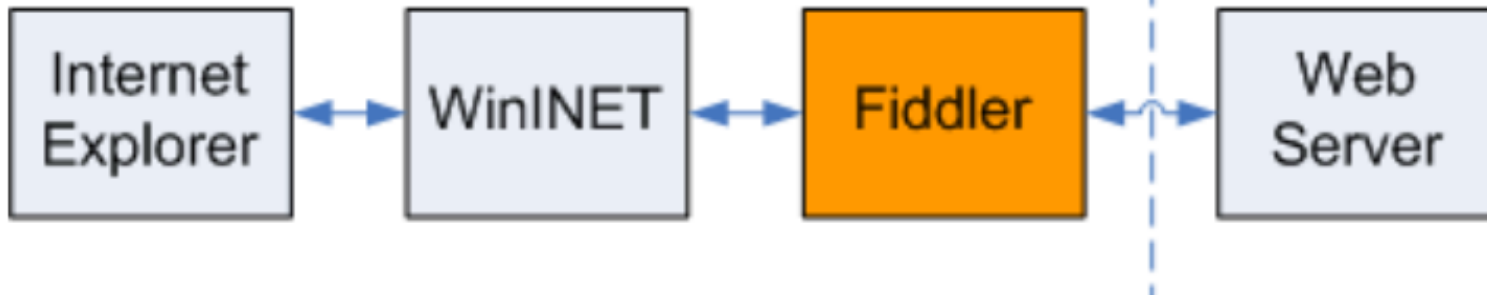
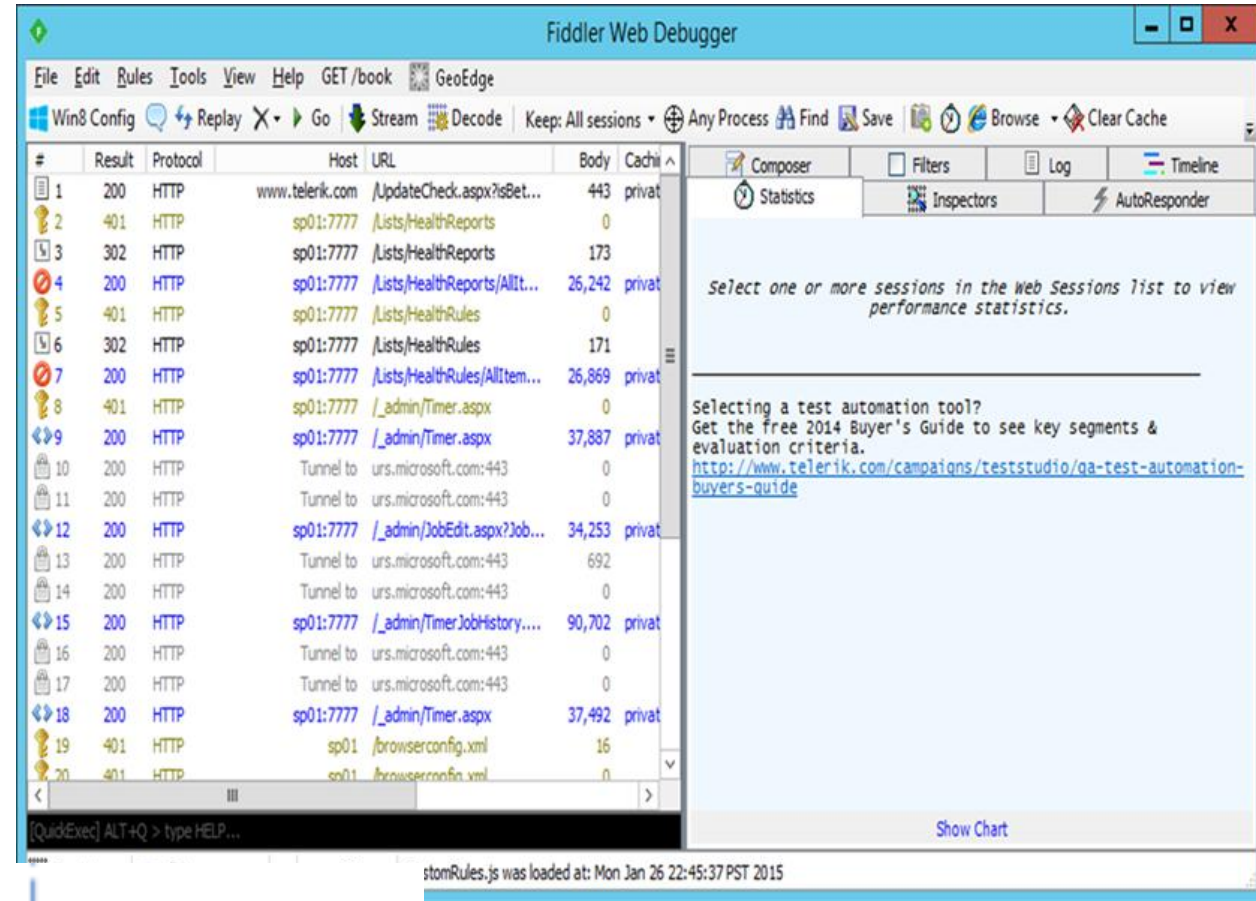
- Gives the fine details of any network requests involved in the loading and operation of your webpages
- View Request and Response headers, loaded components, and load times



Fiddler

About Fiddler

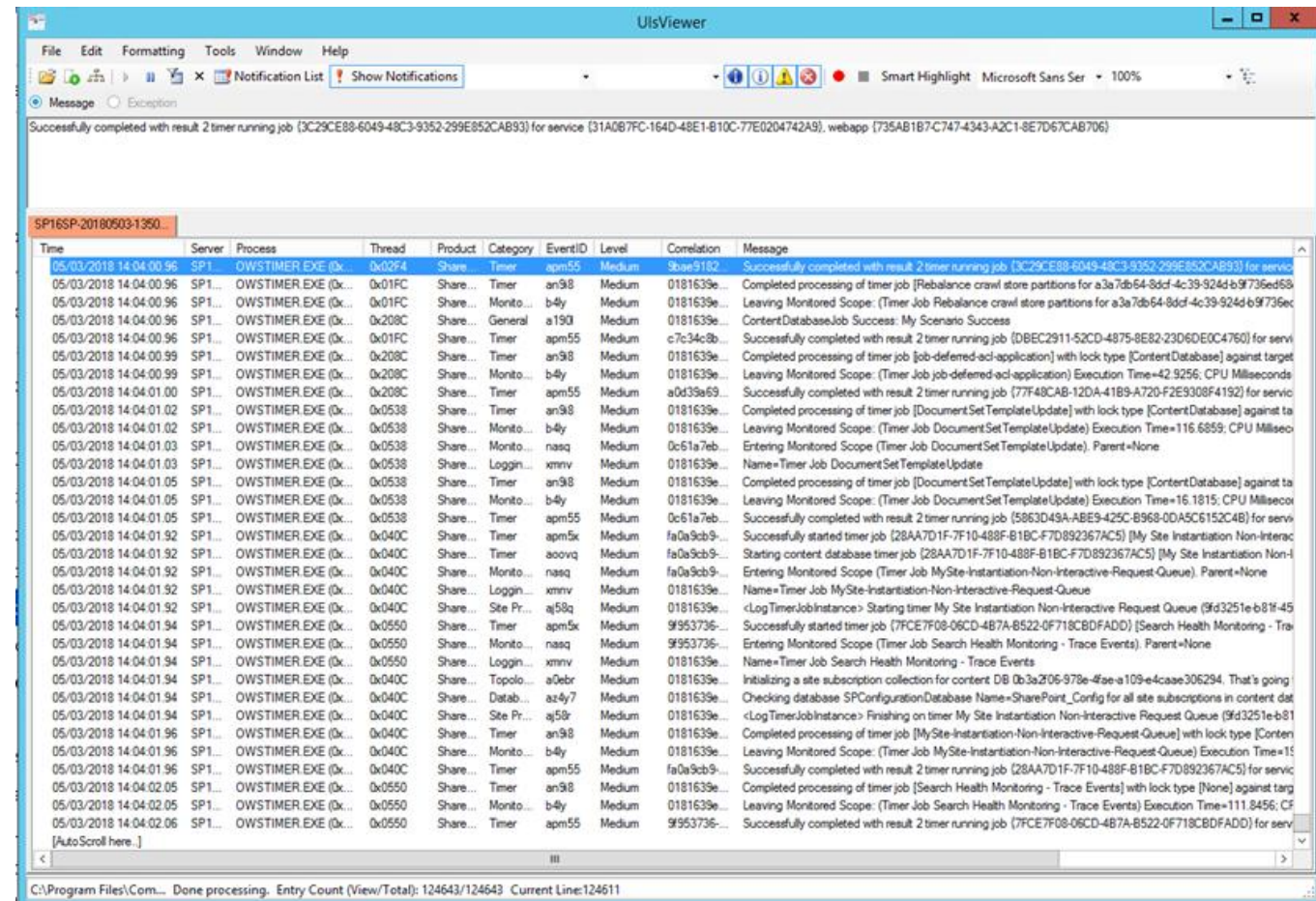
- GUI-based tool to examine HTTP traffic to a browser
- Looks at additional statistical information
- Acts as system proxy to capture all traffic
- Possible to capture, decrypt, and inspect HTTPS traffic
- <https://www.telerik.com/fiddler>



ULS Viewer

About ULS Viewer

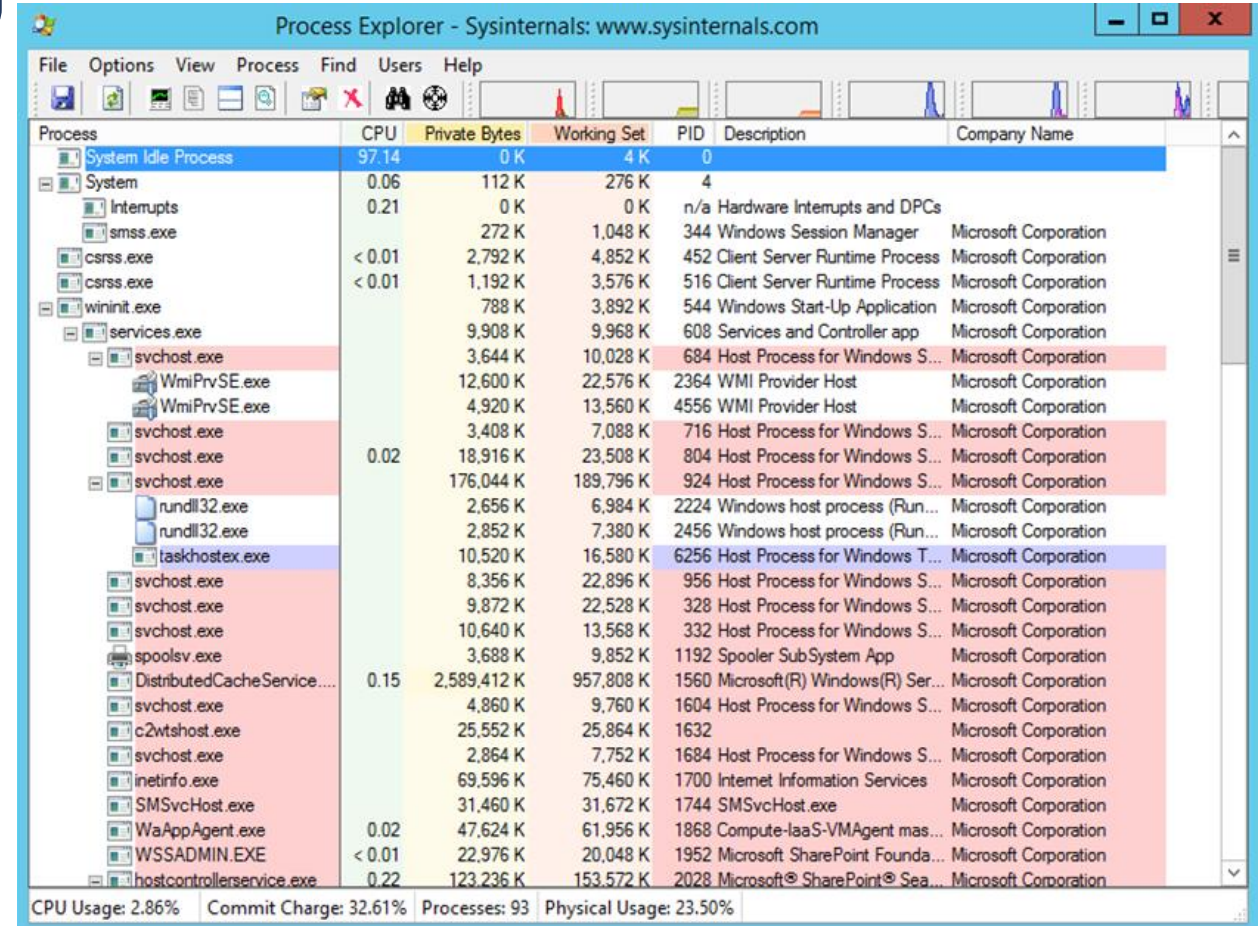
- Robust tool but not officially supported
- ULS logs can be viewed in real-time or offline mode
- Sorts and filters, based on any available column
- Views message easily in separate pane
- Reorders and resizes columns, sorts any column
- <https://www.microsoft.com/en-us/download/details.aspx?id=44020>



Process Explorer

About Process Explorer

- Part of the Sysinternals family
- To know what processes are running at any given time to understand how CPU and other resources are being used
- “Task Manager on Steroids”
- Free



Process Explorer - Sysinternals: www.sysinternals.com

Process	CPU	Private Bytes	Working Set	PID	Description	Company Name
System Idle Process	97.14	0 K	4 K	0		
System	0.06	112 K	276 K	4		
Interrupts	0.21	0 K	0 K	n/a	Hardware Interrupts and DPCs	
smss.exe		272 K	1,048 K	344	Windows Session Manager	Microsoft Corporation
csrss.exe	< 0.01	2,792 K	4,852 K	452	Client Server Runtime Process	Microsoft Corporation
csrss.exe	< 0.01	1,192 K	3,576 K	516	Client Server Runtime Process	Microsoft Corporation
wininit.exe		788 K	3,892 K	544	Windows Start-Up Application	Microsoft Corporation
services.exe		9,908 K	9,968 K	608	Services and Controller app	Microsoft Corporation
svchost.exe		3,644 K	10,028 K	684	Host Process for Windows S...	Microsoft Corporation
WmiPrvSE.exe		12,600 K	22,576 K	2364	WMI Provider Host	Microsoft Corporation
WmiPrvSE.exe		4,920 K	13,560 K	4556	WMI Provider Host	Microsoft Corporation
svchost.exe		3,408 K	7,088 K	716	Host Process for Windows S...	Microsoft Corporation
svchost.exe	0.02	18,916 K	23,508 K	804	Host Process for Windows S...	Microsoft Corporation
svchost.exe		176,044 K	189,796 K	924	Host Process for Windows S...	Microsoft Corporation
rundll32.exe		2,656 K	6,984 K	2224	Windows host process (Run...	Microsoft Corporation
rundll32.exe		2,852 K	7,380 K	2456	Windows host process (Run...	Microsoft Corporation
taskhost.exe		10,520 K	16,580 K	6256	Host Process for Windows T...	Microsoft Corporation
svchost.exe		8,356 K	22,896 K	956	Host Process for Windows S...	Microsoft Corporation
svchost.exe		9,872 K	22,528 K	328	Host Process for Windows S...	Microsoft Corporation
svchost.exe		10,640 K	13,568 K	332	Host Process for Windows S...	Microsoft Corporation
spoolsv.exe		3,688 K	9,852 K	1192	Spooler SubSystem App	Microsoft Corporation
DistributedCacheService....	0.15	2,589,412 K	957,808 K	1560	Microsoft(R) Windows(R) Ser...	Microsoft Corporation
svchost.exe		4,860 K	9,760 K	1604	Host Process for Windows S...	Microsoft Corporation
c2wtschost.exe		25,552 K	25,864 K	1632		Microsoft Corporation
svchost.exe		2,864 K	7,752 K	1684	Host Process for Windows S...	Microsoft Corporation
inetinfo.exe		69,596 K	75,460 K	1700	Internet Information Services	Microsoft Corporation
SMSvcHost.exe		31,460 K	31,672 K	1744	SMSvcHost.exe	Microsoft Corporation
WaAppAgent.exe	0.02	47,624 K	61,956 K	1868	Compute-laaS-VMAgent mas...	Microsoft Corporation
WSSADMIN.EXE	< 0.01	22,976 K	20,048 K	1952	Microsoft SharePoint Founda...	Microsoft Corporation
hostcontollerservice.exe	0.22	123,236 K	153,572 K	2028	Microsoft® SharePoint® Sea...	Microsoft Corporation

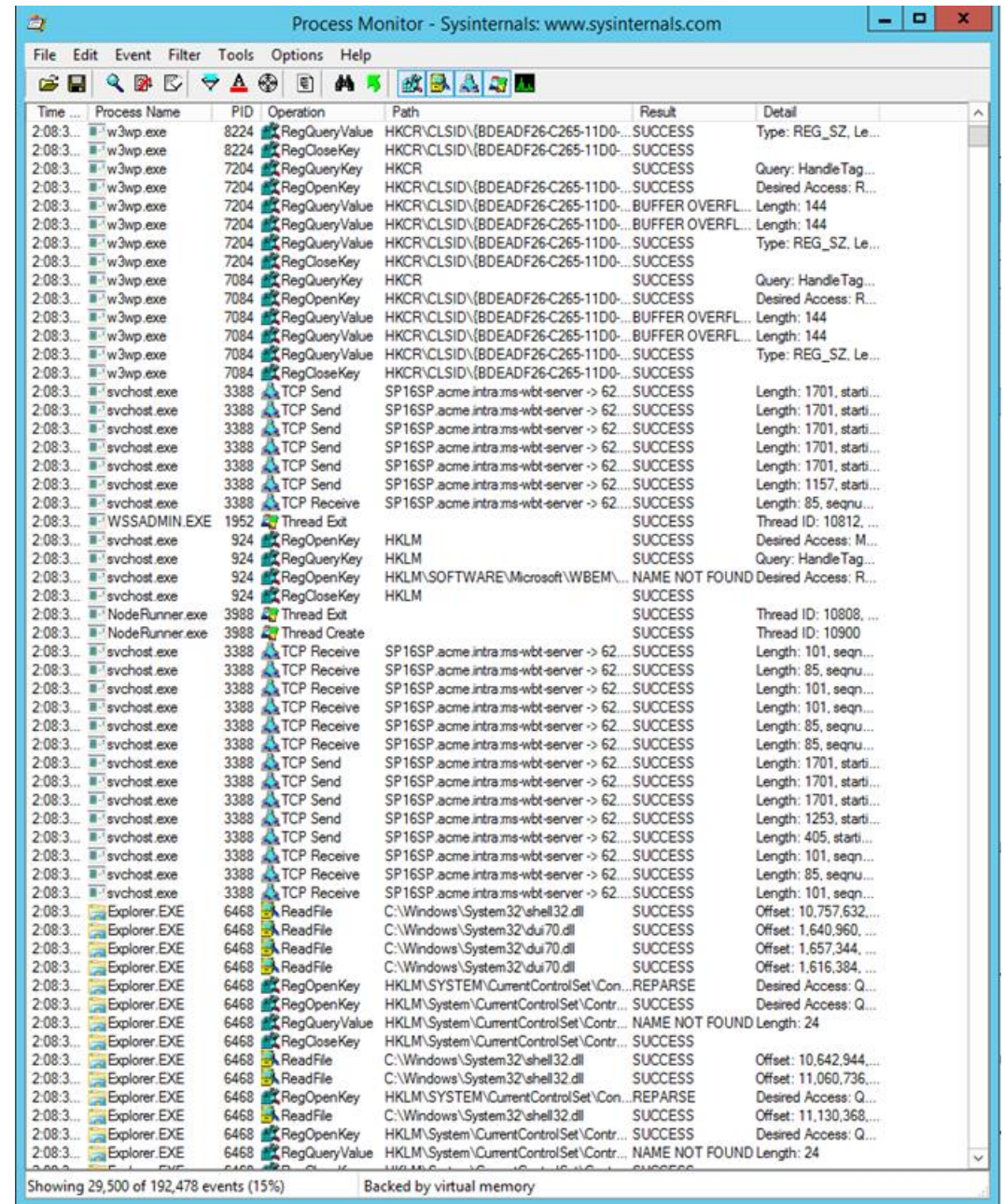
CPU Usage: 2.86% Commit Charge: 32.61% Processes: 93 Physical Usage: 23.50%

Download: <https://docs.microsoft.com/en-us/sysinternals/downloads/process-explorer>

Process Monitor

About Process Monitor

- Part of the Sysinternals family
- Process Monitor is an advanced monitoring tool for Windows that captures real-time file system, Registry, and process/thread activity
- Sorts, filters and highlights based on any available column
- Free



Download: <https://docs.microsoft.com/en-us/sysinternals/downloads/procmon>

Demonstration

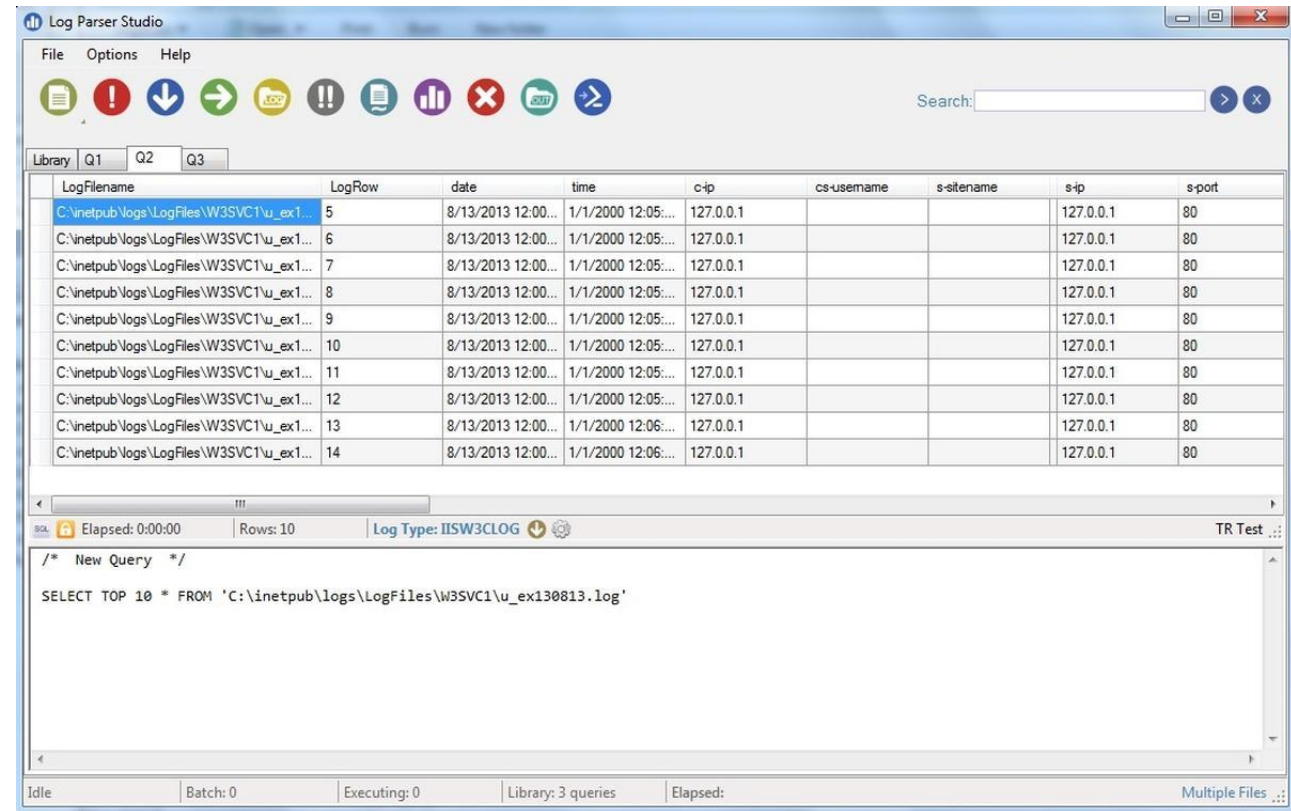
Review server activity using
Process Explorer and Process
Monitor



LogParser

About LogParser

- Command line tool allowing T-SQL querying of log files
- Swiss army knife for reading and manipulation of many log formats like IIS, Event logs, URLScan, Netmon Traces, ULS logs
- Provides output in many formats: Chart, CSV, TSV, XML, SQL
- Many of the queries that were manually done with LogParser are now included in SharePoint reports
- Use LogParser Studio to create and test queries



LogParser: <http://www.microsoft.com/en-us/download/details.aspx?id=24659>

LogParser Studio: <https://gallery.technet.microsoft.com/office/Log-Parser-Studio-cd458765>

LogParser examples

Top 20 User Agents

```
SELECT Top 20 cs(User-Agent) AS Browser, COUNT(*) AS Requests FROM *.log GROUP BY Browser ORDER BY Requests DESC
```

Top 20 Client IPs

```
SELECT Top 20 c-ip AS visitIp, COUNT(*) AS Requests FROM *.log GROUP BY visitIp ORDER BY Requests DESC
```

Top 10 Most Download Files

```
SELECT Top 10 cs-uri-stem, count(*) as Downloads FROM ' from *.log' GROUP BY cs-uri-stem ORDER BY Downloads DESC
```

Top 25 Slowest pages

```
SELECT Top 25 cs-uri-stem as URL, MAX(time-taken) As Max, MIN(time-taken) As Min, Avg(time-taken) As Average FROM *.log GROUP BY URL ORDER By Average DESC
```

Running a query

```
LogParser.exe -i:W3C "Query-From-The-Examples-Above" -o:CSV -recurse:-1
```

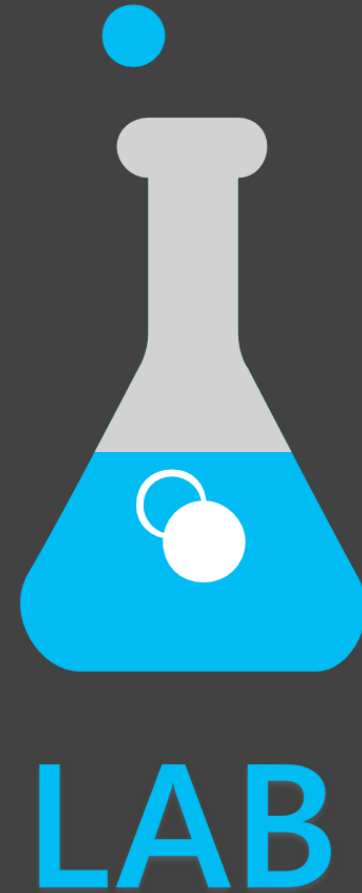
Lab 5.2:

Review the various troubleshooting tools

Objectives

After completing this lab, you will be able to:

- Review available tools to troubleshoot SharePoint



Knowledge Check

Which tool can you use to analyze the SharePoint ULS logs?

- ULS Viewer

Which tools can you use to analyze the process activity?

- Process Explorer and Process Monitor

Which tools can you use to analyze the browser requests?

- Internet Explorer Developer Toolbar and Fiddler

Questions?



