

W E L C O M E T O
CONNECT





**New World ERP Maintenance,
Migrations and Helpful Tech Tools**

P R E S E N T E D B Y



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Agenda

- Introduction
- Server Migrations
- Application Server Maintenance
- SQL Server Maintenance
- NW ERP Maintenance
- Helpful Tools
- What are you Using/Questions

Introduction

- 19 years in IT related jobs
- 5 Years with Tyler/New World
- LGD TSM Support Team
- Born in San Diego, CA and currently reside in Goodrich, MI



Server Migrations

Why do you need to migrate Servers?

- Server End of Life
- Windows Server Issues - Domain Problems - Server Instability
- SQL Server Issues
- Take advantage of new technology



Types of Migrations

- Migrate Everything(SQL/APP/eSuite)
- Application Servers
(Prod/Test/Train)
- SQL Server
- eSuite Server
- Other Tyler Products
(TCM, ReadyForms, Time & Attendance)

Best Practices

- New Server Builds
- Check.tylertech.com
- Mirror Old Servers
- Technical currency Matrix
- SQL Maintenance Plans

- Not Recommended -
In Place Upgrades

Server Migration Timeline

Let's
Start

Determine Needs

- App Server Migration
- SQL Server Migration
- eSuite Server Migration
- Migrate Integrating Products

Start Migration

- Migrate SQL Data
- Update Tyler Deploy Info
- Force Deploy to New Servers
- Migrate Historical Documents/Forms

Server Set-Up

- Build Servers
- Install-Prereqs
- SSL Certs
- Document Your Accounts
- Install/Configure Tentacles

Testing/Cut-Over

- Test NW ERP
- Verify Custom Forms/SSRS Working
- Cut-Over and Migrate Current DBs

Check.TylerTech.com

- Check to meet **minimum** specifications each year
- <https://check.tylertech.com/>
- Put in your email and *Tyler* as the password
- Self Service Hardware Recommendations

SITE ASSESSMENT

Your site's system requirements are contingent upon several factors. This section will help Tyler determine which setup is best for you.

For each of the following applications that your site will use, answer the question for each application variable.

New World ERP	Number of users	<input type="radio"/> 1-50
		<input type="radio"/> 51-100
		<input type="radio"/> 101-200
		<input checked="" type="radio"/> 200+
	Will you be using the Decision Support (Business Analytics) product?	<input checked="" type="radio"/> No
		<input type="radio"/> Yes
	Will you be utilizing the Utilities product in New World ERP?	<input checked="" type="radio"/> No
		<input type="radio"/> Yes
	Will you be utilizing eSuite or the MyCommunity applications?	<input checked="" type="radio"/> No
		<input type="radio"/> Yes

PRODUCTION		DB	AS	SSRS
Processor	Virtual Cores	4	4	4
	Physical Cores	4	4	4
Memory		24	16	16
Storage		500GB	100GB	100GB
		<input type="button" value="Test"/>	<input type="button" value="Test"/>	<input type="button" value="Test"/>

Technical Currency Matrix

- Found on Help Central
- Lays out the direction of ERP regarding current capabilities and future releases
- Planning tool to stay ahead
- Updated with each year

Supported Release						
No Longer Tested. We believe the software will work, if issues are specific to the denoted product and the software works in supported products, the issue is not likely to be fixed.						
Not Supported. Issues will not be addressed.						
Investigating this product						
Status			Forecast			
Product Type - Product	2022.1 (2Q 2022)	2023.1 (2Q 2023)	2024.1 (2Q 2024)	2025.1 (2Q 2025)	Notes (EOMS = End of Mainstream Support)	Supporting Link
Web Browsers						
IE11					Supported through life of Windows 10.	IE11 Support
					* Chrome, Firefox, Safari, Edge. When using Safari on a Mac, network printers (installed on the App Server need to be used for auto-printing functions like receipts, ROG forms and Inventory Issue tickets. Local printers are not supported on Mac for auto-printing functions.)	
Multi-Browser Support for ERP (Browser Agnostic)						
Browser Agnostic for eSuite						
.Net Framework Versions						
.Net 4.6					No EOMS date set as of 8/11/2016	.Net Support
.Net 4.6.1					No EOMS date set as of 8/11/2016	.Net Support
.Net 4.6.2					No EOMS date set as of 8/11/2016	.Net Support
.Net 4.7						
.Net 4.7.1						
.Net 4.7.2						
.Net 4.8						
SQL Server Versions					Latest Service Pack + CU recommended	
SQL 2012					EOMS - 7/11/2017	SQL 2012 Support
SQL 2014					EOMS - 7/9/2019 - Support goes away in version 2024.1.5 of NWERP.	SQL 2014 Support
SQL 2016					EOMS - 7/13/2021	SQL 2016 Support
SQL 2017					EOMS - 10/11/2022	SQL 2017 Support
SQL 2019					EOMS - 2/28/2025	SQL 2019 Support
SQL 2022					EOMS - 1/11/2028	SQL 2022 Support
Server OS Versions					Latest Service Pack recommended	
Windows Server 2012					EOMS - 10/9/2018	Server 2012 Support
Windows Server 2012R2					EOMS - 10/9/2018 - Support goes away in version 2024.1.5 of NWERP.	Server 2012 Support
Windows Server 2016					EOMS - 1/11/2022	Server 2016 Support
Windows Server 2019					EOMS - 1/9/2024	Server 2019 Support
Windows Server 2022					EOMS - 10/13/2026	Server 2022 Support
3rd Party Server Software						
Software Pre-Reqs						
Rabbit MQ 3.3.0						
Rabbit MQ 3.6.16						
Erlang 17.0						
Erlang 20.3						
Java Runtime Environment 8 Update 161						

Pre-Install Preparations

- Request License from Tyler for NW ERP
- SSL Cert
- Current SQL Database Backups
- Pre-Req Software
 - Microsoft Visual C++ Redistributable 2015
 - SQL Server 2012 Native Client
 - .Net Framework 4.8
 - .Net Core 2.2
 - Powershell 5.1
- Windows Roles/Features
- Windows Server/SQL Install Media



Tyler Current Version Recommendations



Server OS: Windows Server 2022



SQL Server Version: SQL 2022

No Longer Supported: SQL 2012, Server 2012



SQL 2014 and Windows Server 2012R2 Support goes away in version 2024.1.5 of NWERP.

No Longer Tested: SQL 2014, Server 2012R2



Technology Update (SQL Server 2014 and Windows Server 2012 R2)

In our published Technical Currency Matrix, New World ERP maintains the various levels of ongoing support for various, relevant technologies. For some time now, we've indicated that *these* technologies are no longer being tested with our software. At this point, Microsoft is communicating that extended support for Windows Server 2012R2 is ending on 10/10/2023 and SQL Server 2014 is ending on 7/9/2024. New World ERP will plan to fully stop support on these technologies in line with Microsoft's dates. For these reasons, we are recommending you review your infrastructure as soon as possible and make sure your environment is current.

Some questions you may have:

1. What technologies will you support and for how long?

1. Our [Technical Currency Matrix](#) tracks this information for you on the Server Software tab.

2. How do I complete the migration?

1. You can find documentation for the migration on [Help Central](#). Tyler also offers migration services or hosting services. If you would like to look into contract on either, please reach out to your account manager (or Support).

3. What happens if I stay on these technologies past the end date of support?

1. The software will likely work, at least for a period of time. However, no support will be extended for SQL Server 2014 or Windows Server 2012R2 after the end dates listed above. Microsoft also will not be offering extended support or updates past those dates. It is in your best interest to move to new technologies or to work with us on moving into Tyler hosting.

SQL Server Migrations

SQL Server Migration

- Recommended approach
 - Build new SQL box
- Migrate databases to new SQL/SSRS box when complete
- Point your test/prod environment towards your new SQL box
 - The migration is low risk when you build a new SQL box. New application servers should be done as a sperate project
 - You can migrate test first for comparison then migrate live at a later date.
- Remember to also migrate other Tyler Products
- Set-Up A/V Exclusions

SQL Server 2022 Setup

Edition

Select the edition of SQL Server 2022 you want to install.

Global Rules
Product Updates
Install Setup Files
Install Rules
Installation Type
Edition
License Terms
Feature Selection
Feature Rules
Feature Configuration Rules
Ready to Install
Installation Progress
Complete

Select an edition of SQL Server to install. You can choose to either use a SQL Server license that you have already purchased by entering the product key or choose pay-as-you-go billing through Microsoft Azure. You can also specify a free edition of SQL Server: Developer, Evaluation, or Express. Evaluation has the largest set of SQL Server features, as documented in SQL Server Books Online, and is activated with a 180-day expiration. Developer edition does not have an expiration, has the same set of features found in Evaluation, but is licensed for non-production database application development only. To upgrade from one installed edition to another, run the Edition Upgrade Wizard.

Specify a free edition:

Evaluation

Use pay-as-you-go billing through Microsoft Azure:

Warning: To enable this option, you must have an active Azure subscription that you will be required to provide along with a resource group, Azure region, and tenant ID later in setup. For more information, see <https://aka.ms/ArcEnabledSqlPAYG>.

Standard

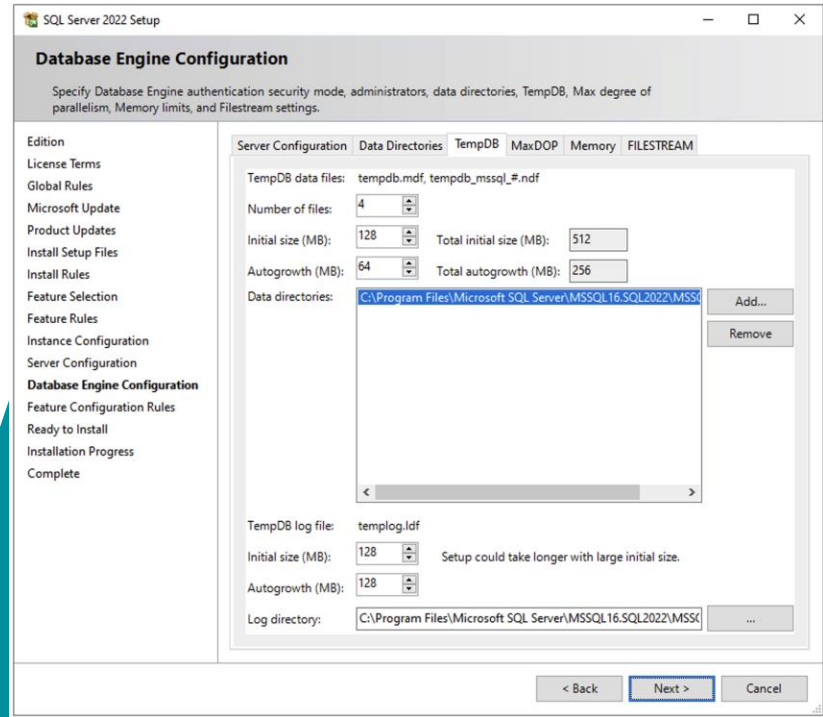
Enter the product key:

I have a SQL Server license with Software Assurance or SQL Software Subscription

I have a SQL Server license only

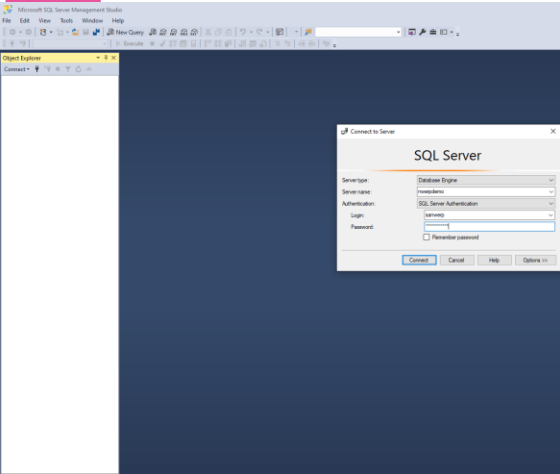
Temp DB Best Practices

- **Separate Storage:** Isolate TempDB on its own disk for optimal performance. Avoid placing it on the same disk as user databases or system files.
- **Proper Sizing:** Allocate adequate space for TempDB based on your workload. It's recommended to have multiple data files, each sized equally, to balance I/O across multiple disks.
- **Number of TempDB data files:** Best practices dictate that one TempDB data file be created for each CPU core on the server, up to a maximum of 8 data files.
- **Avoid Autogrowth:** Preallocate space for TempDB to avoid frequent autogrowth events, which can cause performance degradation.



SQL Server Migration Steps

- Install Microsoft SQL Server
 - Configure SQL using industry standard best practices
 - Setup Microsoft standard maintenance plans
- Migrate copies of all New World ERP databases to new SQL servers
- SQL Server instructions found on Help Central
- These SQL components are needed for New World ERP and DSS:
 - SQL Server Analysis Services
 - SQL Server Integration Services
 - SQL Server Reporting Services
 - SQL Server Database Engine
 - SQL Server Management Studio



Application Server Migrations

Application Server Migrations

- Create new application and eSuite servers with Windows Server OS
- Follow NWERP installation guide from the start
- This will include roles and features for the server and pre-reqs
- Set Anti-Virus exclusions
- Install Tyler Tentacle on App Server/eSuite Server

New Server Setup Guide

This guide is meant to be an addition to the Installation Guide to account for one-time tasks that are required when installing to a new set of servers.

Note: The sections below are listed sequentially from top to bottom. Please follow them in order. At the end of each section, a link will guide you to the next section in the sequence. Some steps within a section may not apply to you.

- ▣ **Hardware Requirements**
- ▣ **Technical Currency**
- ▣ **Tyler Product Compatibility**
- ▣ **Installing New World ERP (Prerequisites)**
- ▣ **SQL Server Setup**
- ▣ **Server Roles/Setup**
- ▣ **Setting up Users on a New Server**

[Next steps: Installing New World ERP \(Prerequisites\)](#)

- New World Configuration Se...
- New World ERP
- New World ERP DSS
- New World HR Reporting
- New World Management Co...
- New World Orchestrator**
- New World Settings Migrati...
- New World Special Updates
- New World Web API
- New World eSuite Services
- New World eSuite Websites
- New World myInspections
- Tyler 311
- Tyler Cashiering Server
- Tyler Cashiering for EnerGo...
- Tyler Cloud Ecosystem Portal
- Tyler Hub
- Tyler Identity
- Tyler Omnibar

Environment
Test [Go to Deployment](#)

- ✓ Common Variables
- ✓ New World ERP Variables
- ✓ Tyler Cloud Ecosystem Information
- ✓ New World Orchestrator
- ✓ New World Configuration Service
- ✓ New World ERP
- ✓ New World ERP DSS
- ✓ New World eSuite Services
- ✓ New World eSuite Websites

Ready for Migration in Tyler Deploy

- Use Orchestrator for setting up new environmental Information
 - DB Server
 - DB Names(if changed)
 - FQDN/Domain Name
 - Service Account(if changed)
 - SQL Account(if changed)
 - SSRS Site/Account

- FORCE Redeploy Products(same version)

- Deploy Products in This Order:

- 1) Configuration Service
- 2) Settings Migration
- 3) Identity/Omnibar
- 4) Management Console
- 5) ERP
- 6) eSuite Services
- 7) eSuite Websites
- 8) HR Reporting
- 9) Hub
- 10) DSS
- 11) Other Tyler IPs

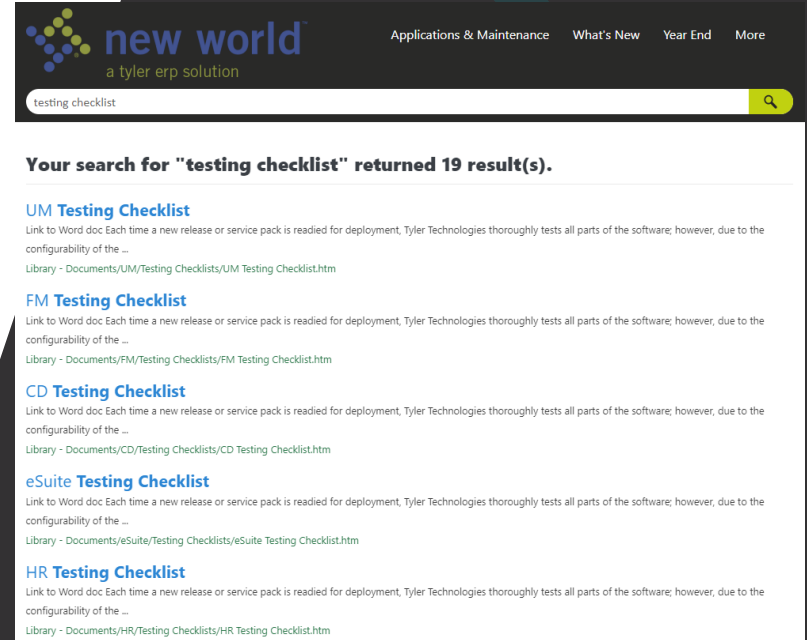


Post Install Set-Up

- Apply NW ERP License to Management Console
- Configure lingering Management Console settings
(compare old mgmt. console settings)
 - PDF Conversion service
 - General Tab information
 - Search Index Service
- Confirm all Automatic ERP Services are started
- Migrate File storage Documents and Custom Documents to new File storage
- **Turn off old Server App service to prevent users for accessing!**

Testing Environment

- Testing of the technical pieces of the New World ERP software:
 - HTML Reporting
 - HTML to PDF Conversion
 - SSRS Reporting
 - SSRS to PDF Conversion
 - Site connectivity
 - Printing
- Test checklists can be found on help central



The screenshot shows the New World ERP help central interface. At the top, the logo for 'new world a tyler erp solution' is visible, along with navigation links for 'Applications & Maintenance', 'What's New', 'Year End', and 'More'. A search bar contains the text 'testing checklist'. Below the search bar, a message states 'Your search for "testing checklist" returned 19 result(s)'. The results are listed as follows:

- UM Testing Checklist**
Link to Word doc Each time a new release or service pack is readied for deployment, Tyler Technologies thoroughly tests all parts of the software; however, due to the configurability of the ...
Library - Documents/UM/Testing Checklists/UM Testing Checklist.htm
- FM Testing Checklist**
Link to Word doc Each time a new release or service pack is readied for deployment, Tyler Technologies thoroughly tests all parts of the software; however, due to the configurability of the ...
Library - Documents/FM/Testing Checklists/FM Testing Checklist.htm
- CD Testing Checklist**
Link to Word doc Each time a new release or service pack is readied for deployment, Tyler Technologies thoroughly tests all parts of the software; however, due to the configurability of the ...
Library - Documents/CD/Testing Checklists/CD Testing Checklist.htm
- eSuite Testing Checklist**
Link to Word doc Each time a new release or service pack is readied for deployment, Tyler Technologies thoroughly tests all parts of the software; however, due to the configurability of the ...
Library - Documents/eSuite/Testing Checklists/eSuite Testing Checklist.htm
- HR Testing Checklist**
Link to Word doc Each time a new release or service pack is readied for deployment, Tyler Technologies thoroughly tests all parts of the software; however, due to the configurability of the ...
Library - Documents/HR/Testing Checklists/HR Testing Checklist.htm

Different Options to achieve Server Migrations

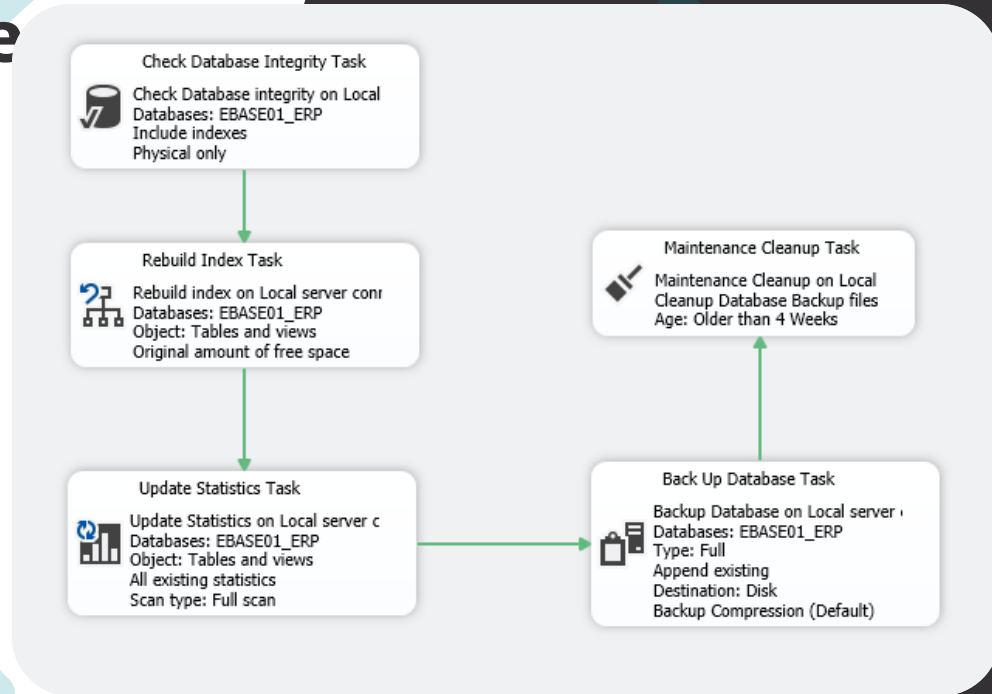


- Migrate Data in House
On-site IT staff handles the migration
All work is performed by IT staff
NW ERP Support available for simple questions and guidance
- Migration Provided by NW ERP(SQL/APP Servers)
 - On-Site staff will build new server to check.tylertech specs and install Windows Server
 - Tyler Staff will Install Pre-Reqs, configure servers, install SQL if applicable
 - Migrate SQL DBs, configure Maintenance Plans
 - Install NW ERP Products via Tyler Deploy
 - Configure post migration clean-up/configurations
 - Migrate Filestorage and Custom Docs
 - Perform Cut-Over at a later date to "Go-Live"

SQL Server Maintenance Plans

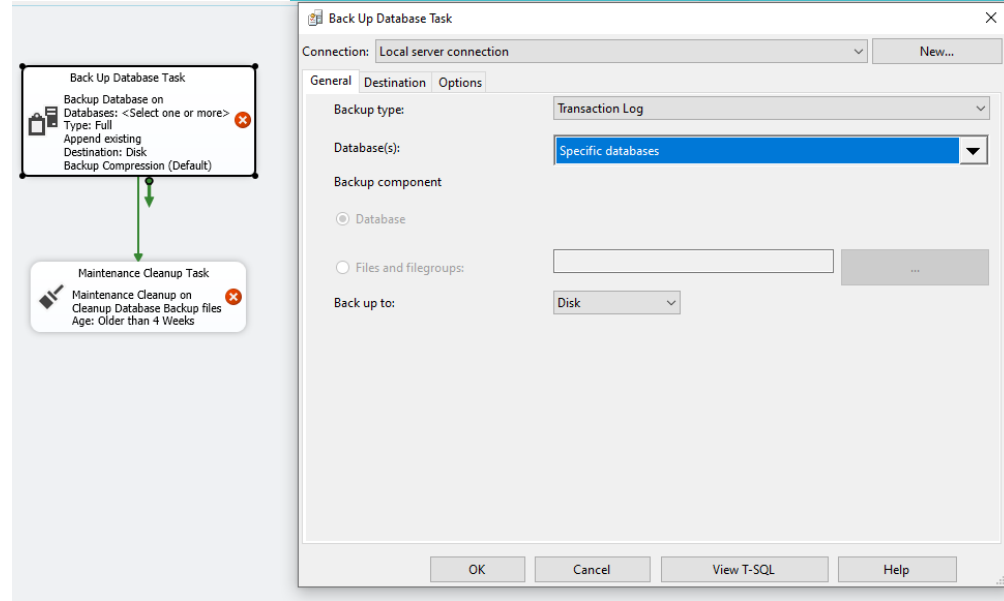
SQL Server Migration Database Maintenance

- Database integrity check
- Rebuild indexes
- Update stats
- DB backups
- Maintenance clean up
- Schedule to run either Nightly or Weekly depending on need



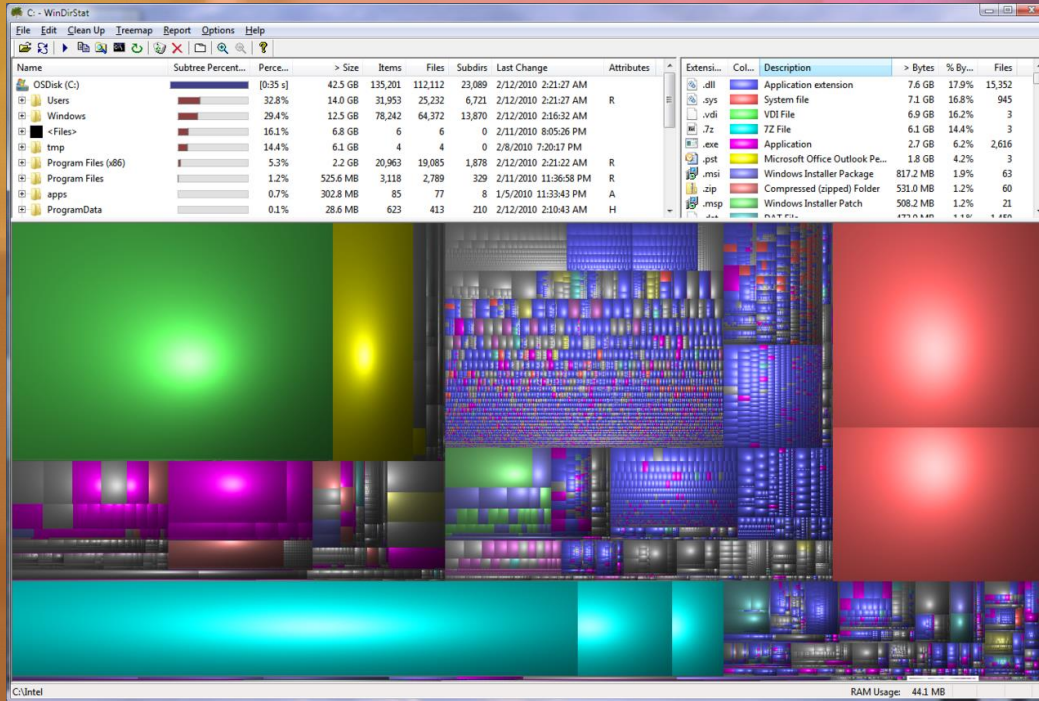
Transaction Log Backup

- Backup Databases
Only Full Recovery databases
- Maintenance Cleanup
- Schedule Hourly
- Will prevent Logs from growing abnormally large



Helpful Tech Tools

WinDirStat



IIS Crypto

- Used before server migrations, select best practices and reboot App Servers

IIS Crypto is a free tool that gives administrators the ability to enable or disable protocols, ciphers, hashes and key exchange algorithms on Windows Server.

It also lets you reorder SSL/TLS cipher suites offered by IIS, change advanced settings, implement Best Practices with a single click, create custom templates and test your website.

IIS Crypto 3.3

Schnannel

These settings enable or disable various options system wide. When the checkbox is grey it means no setting has been specified and the default for the operating system will be used. Click the Apply button to save changes.

Server Protocols	Ciphers	Hashes	Key Exchanges
<input type="checkbox"/> Multi-Protocol Unified Hello	<input type="checkbox"/> NULL	<input checked="" type="checkbox"/> MD5	<input checked="" type="checkbox"/> Diffie-Hellman
<input type="checkbox"/> PCT 1.0	<input type="checkbox"/> DES 56/56	<input checked="" type="checkbox"/> SHA	<input checked="" type="checkbox"/> PKCS
<input type="checkbox"/> SSL 2.0	<input type="checkbox"/> RC2 40/128	<input checked="" type="checkbox"/> SHA 256	<input checked="" type="checkbox"/> ECDH
<input type="checkbox"/> SSL 3.0	<input type="checkbox"/> RC2 56/128	<input checked="" type="checkbox"/> SHA 384	
<input checked="" type="checkbox"/> TLS 1.0	<input type="checkbox"/> RC2 128/128	<input checked="" type="checkbox"/> SHA 512	
<input checked="" type="checkbox"/> TLS 1.1	<input type="checkbox"/> RC4 40/128		
<input checked="" type="checkbox"/> TLS 1.2	<input type="checkbox"/> RC4 56/128		
	<input type="checkbox"/> RC4 64/128		
	<input type="checkbox"/> RC4 128/128		
	<input checked="" type="checkbox"/> Triple DES 168		
	<input checked="" type="checkbox"/> AES 128/128		
	<input checked="" type="checkbox"/> AES 256/256		

Client Protocols

<input type="checkbox"/> Multi-Protocol Unified Hello
<input type="checkbox"/> PCT 1.0
<input type="checkbox"/> SSL 2.0
<input type="checkbox"/> SSL 3.0
<input checked="" type="checkbox"/> TLS 1.0
<input checked="" type="checkbox"/> TLS 1.1
<input checked="" type="checkbox"/> TLS 1.2

Best Practices Reboot: Apply

Logparser

- Log Parser is a free tool from Microsoft that allows users to access text-based data, such as XML, CSV, and log files, and key data sources on the Windows operating system. It uses SQL-like syntax to extract information from logs.
- Input formats: IIS log files, Windows Event log, generic XML, CSV, TSV, and W3C
Output formats: Text files: CSV, TSV, XML, W3C, user-defined
Other formats: A SQL database, a SYSLOG server
- Log parsing extracts information in your logs and organizes them into fields.

```
Command Prompt
C:\Program Files\Log Parser 2.2>logparser /h
Microsoft (R) Log Parser Version 2.2.10
Copyright (C) 2004 Microsoft Corporation. All rights reserved.

Usage:  LogParser [-i:<input_format>] [-o:<output_format>] <SQL query> |
file:<query_filename>[/?param=value1+...]
        [[<input_format_options>] [<output_format_options>]
        [-q[:ON|OFF]] [-e:<max_errors>] [-iwl[:ON|OFF]]
        [-stats[:ON|OFF]] [-saveDefaults] [-queryInfo]

LogParser -c -i:<input_format> -o:<output_format> <from_entity>
<into_entity> [<where_clause>] [<input_format_options>]
[<output_format_options>] [-multiSite[:ON|OFF]]
[-q[:ON|OFF]] [-e:<max_errors>] [-iwl[:ON|OFF]]
[-stats[:ON|OFF]] [-queryInfo]

-i:<input_format>      : one of IISW3C, NCSA, IIS, IISODBC, BIN, IISMSID,
HTTPERR, URLSCAN, CSU, TSV, W3C, XML, EUT, ETU,
NETMON, REG, ADS, TEXTLINE, TEXTWORD, FS, COM (if
omitted, will guess from the FROM clause)
-o:<output_format>    : one of CSV, TSV, XML, DRYGRID, CHART, SYSLOG,
NEUROVIEW, NAT, W3C, IIS, SQL, TPL, NULL (if omitted,
will guess from the INTO clause)
-q[:ON|OFF]          : quiet mode; default is OFF
-e:<max_errors>       : max # of parse errors before aborting; default is -1
(-ignore all)
-iwl[:ON|OFF]        : ignore warnings; default is OFF
-stats[:ON|OFF]      : display statistics after executing query; default is
ON
-c                   : use built-in conversion query
-multiSite[:ON|OFF]  : send BIN conversion output to multiple files
depending on the SiteID value; default is OFF
-saveDefaults        : save specified options as default values
-restoreDefaults     : restore factory defaults
-queryInfo           : display query processing information (does not
execute the query)

Examples:
LogParser "SELECT date, REVERSE(DNS(c-ip)) AS Client, COUNT(*) FROM file.log
WHERE sc-status<>200 GROUP BY date, Client" -e:10
LogParser file/myquery -c:input-C:\temp\*.log -o:output-results.csv
LogParser -c -i:BIN -o:W3C file1.log file2.log "ComputerName IS NOT NULL"

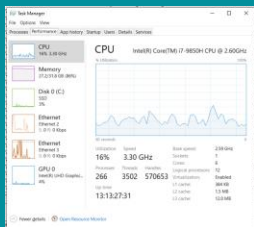
Help:
-h GRAMMAR           : SQL Language Grammar
-h FUNCTIONS I <function> ] : Functions Syntax
-h EXAMPLES          : Example queries and commands
-h -i:<input_format>   : Help on <input_format>
-h -o:<output_format> : Help on <output_format>
-h -c                 : Conversion help

C:\Program Files\Log Parser 2.2>logparser "Select count(distinct c-ip) from ex07
0102.log"
COUNT(DISTINCT c-ip)
-----
2177

Statistics:
Elements processed: 6384
Elements output:    1
Execution time:     0.03 seconds

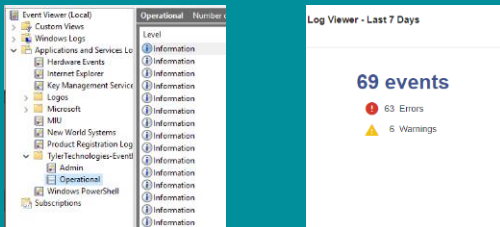
C:\Program Files\Log Parser 2.2>
```

Built in Windows Tools



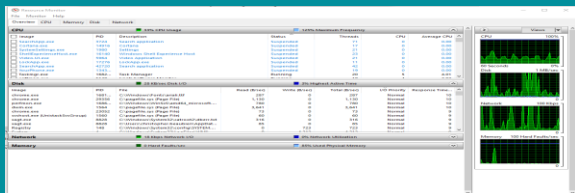
Task Manager

- Check CPU/ Memory Usage
- Up Time of Server
- Users logged in



Event Log

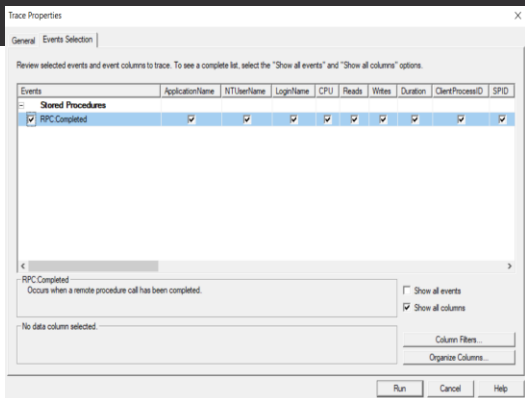
- Tyler Technologies Event Log
- Look up Errors and Warning tied to Tyler products



Resource Monitor

- Deeper Breakdown of what components are getting used
- Can be used to see where the slowness is coming from

SQL Tools



SQL Server Profiler

- Identify Bottlenecks
- Trace Server Performance
- Filtering capabilities (duration/reads/writes/CPU)
- You can save a trace to a SQL table and then query it

EventClass	TextData	ApplicationName	NTUserName	LoginName	CPU	Reads	Writes	Duration	ClientProcessID	SPID	StartTime
RPC:Completed	exec sp_executesql N'SELECT [...	.Net SqlClie...	nwERPsa	nwERPsa	0	22	0	0	19928	152	2021-01-20
RPC:Completed	exec [Suite].[GetApprovalRequestsCo...	.Net SqlClie...	nwERPsa	nwERPsa	109	2868	0	112	19928	198	2021-01-20
RPC:Completed	exec sp_reset_connection	.Net SqlClie...	nwERPsa	nwERPsa	0	0	0	0	19928	198	2021-01-20
RPC:Completed	exec sp_reset_connection	.Net SqlClie...	nwERPsa	nwERPsa	0	0	0	0	19928	152	2021-01-20
RPC:Completed	exec sp_executesql N'SELECT [...	.Net SqlClie...	nwERPsa	nwERPsa	63	4428	0	60	19928	198	2021-01-20
RPC:Completed	exec sp_reset_connection	.Net SqlClie...	nwERPsa	nwERPsa	0	0	0	0	19928	198	2021-01-20
RPC:Completed	exec sp_executesql N'SELECT TOP (1)...	.Net SqlClie...	nwERPsa	nwERPsa	0	4	0	0	19928	198	2021-01-20
RPC:Completed	exec sp_reset_connection	.Net SqlClie...	nwERPsa	nwERPsa	0	0	0	0	19928	198	2021-01-20
RPC:Completed	exec sp_executesql N'SELECT [...	.Net SqlClie...	nwERPsa	nwERPsa	16	1330	0	6	19928	198	2021-01-20
RPC:Completed	exec [Suite].[GetApprovalRequestsCo...	.Net SqlClie...	nwERPsa	nwERPsa	125	2876	0	128	19928	152	2021-01-20
RPC:Completed	exec sp_reset_connection	.Net SqlClie...	nwERPsa	nwERPsa	0	0	0	0	19928	152	2021-01-20
Trace Stop											2021-01-20

exec [Suite].[GetApprovalRequestsCountByUserID] @UserID=3

Trace is stopped. Ln 130, Col 2 Rows: 132

SQL Tools

SPID	Status	Login	HostName	BlkBy	DBName	Command	CPUTime	DiskIO	LastBatch	ProgramName	SPID	REQUESTID
1	BACKGROUND	sa	.	.	NULL	XTP_CKPT_AGENT	0	0	01/13 01:12:30	.	1	0
2	BACKGROUND	sa	.	.	NULL	LOG WRITER	11906	0	01/13 01:12:33	.	2	0
3	BACKGROUND	sa	.	.	NULL	RECOVERY WRITER	1171	0	01/13 01:12:33	.	3	0
4	BACKGROUND	sa	.	.	NULL	LAZY WRITER	1468	0	01/13 01:12:33	.	4	0
5	BACKGROUND	sa	.	.	master	SIGNAL HANDLER	0	0	01/13 01:12:33	.	5	0
6	BACKGROUND	sa	.	.	NULL	XIO_LEASE_RENEWA	234	0	01/13 01:12:33	.	6	0
7	BACKGROUND	sa	.	.	NULL	LOCK MONITOR	265	0	01/13 01:12:33	.	7	0
8	BACKGROUND	sa	.	.	NULL	XIO_RETRY_WORKER	203	0	01/13 01:12:33	.	8	0

SP_Who2

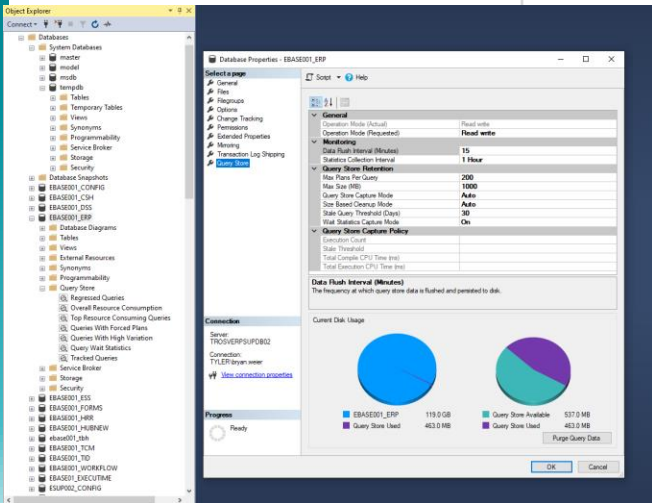
- Find blocks + current queries
 - BlkBy Column
- This tool is limited in use but also powerful
 - Included in SSMS

dd hh:mm:ss.mss	session_id	sql_text	login_name	wait_info	CPU
00 00:00:00.480	65	<?query -- CREATE PROCEDURE [dbo].[WriteLockS...	NT AUTHORITY\NETWORK SERVICE	NULL	0
00 00:00:00.473	68	<?query -- (@SnapshotId uniqueidentifier,@IsPemanen...	NT AUTHORITY\NETWORK SERVICE	NULL	15

SP_WhoIsActive

- ***Real-Time*** view of SQL performance
- Needs to be installed

SQL Server Query Store



• What is SQL Server Query Store

It is a repository of historical query information that allows you to monitor, analyze, and tune the performance of your queries. It captures and stores the query text, query plan, runtime statistics, and wait statistics of your queries.

• How can it be useful

- Find the most expensive queries for CPU, I/O, Memory
- Get full history of query executions
- Get information about query regressions
- Determine how many times a query was executed in the given range of time

• Can I use it?

- For new DBs on SQL Server 2022, Azure SQL Database, and Managed Instance, it's turned on by default.
- SQL Server versions 2016-2019, the query store is not enabled by default and will need to be turned on manually



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