WELCOME TO
CONNECT

Troubleshoot Application and Performance Issues

Christopher Beaubien

Manager, Technical Services

CONNECT 24

tyler technologies

Agenda

- Introduction
- Session Goals

- Helpful Tips for troubleshooting performance

- Q&A

Introduction

- 15 years in IT

- 7 Years with Tyler/ New World

- Cloud Hosted Team

- Currently Building Two Tiny Homes

- Have a Dachshund Puppy Named "Leon"

Session Goals

- Expand your toolbox
- Talk about troubleshooting and how to approach different issues
- Make life easier

Where to start ?

Ask your self the following questions

- Is it happening for all users or a single user?
- When did the issue first occur?
- Any significant changes in the environment or software?

Ask your self the following questions

- Is it happening for all users or a single user?
  - If all users, then we can conclude its software or infrastructure related
  - If it's a single user, we can rule out infrastructure and software and focus our troubleshooting on items specific to that one user

CONNECT 24

tyler technologies

Ask your self the following questions

- When did the issue first occur?

  - Timing is often key in troubleshooting these issues

  - If a patched occurred could be connected

  - If networking changes occurred could be connected

Ask your self the following questions

- Any significant changes in the environment or software?

  - ## New Firewall?

  - ## New Network Switches?

  - ## New Subnets?

Application Troubleshooting

Tech Requirements

- Tech Currency Matrix

- Microsoft SQL Server 2022

- Microsoft Windows Server 2022

- SSL Certificates (SHA-2, 2048 bit encryption)

- Minium Specs 4 CPU Cores 16 Gigs of RAM

What is Tyler Deploy?

- Simplified Installs

- Built on Octopus Deploy Framework

- Heavy Lifting in Background

- 1 architecture for all Tyler products

 - 1 Install Experience

  - Saves install parameters

tyler deploy™
a total tyler solution

CONNECT 24

tyler technologies

Disk Space

- Build
  - C: - OS (including Windows Updates)
  - D: - Applications (new world ERP)
- Monitor
  - 100% usage will cause data loss / corruption
  - Review and Delete Logs (IIS, ERP)

Disk Space

- Disk Space Software

  - Treesize/WinDirStat

    - Free

    - https://www.jam-software.com/treesize_free/

  - Enterprise Performance Monitoring

    - prtg

    - Solarwinds

  - Other Suggestions?
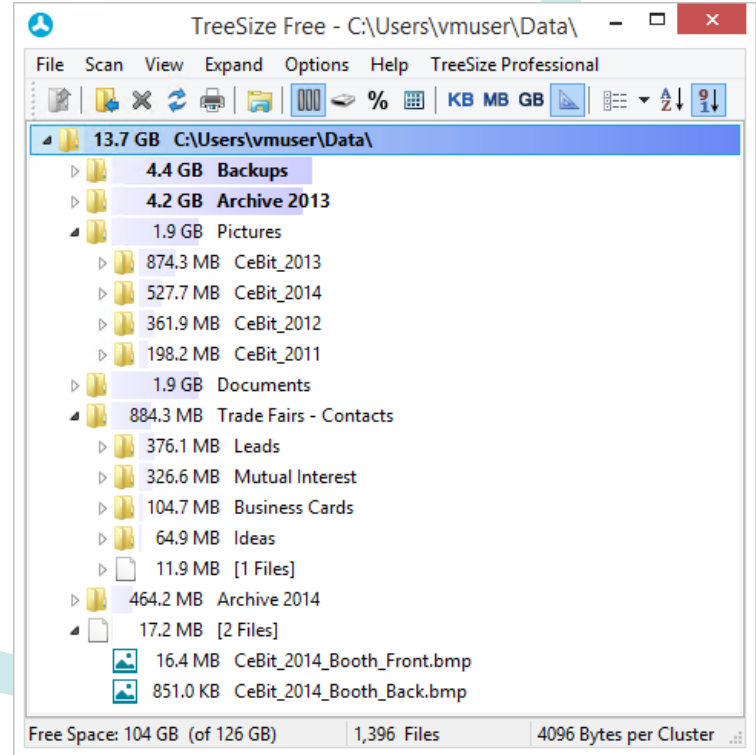
Performance Monitoring Details

- What is my CPU and RAM utilization look like?

- Am I seeing high usage all the time or during peek hours?

- How quick are my hard drives filling up?

- If yes, consider adding more resources or looking into what might be causing the high utilization ?

Task Manager

- What is taking up my CPU or Memory?

- How long has my server been up?

- How many users are currently logged in to the server?

- What is the process identifier (PID) of an Application Running
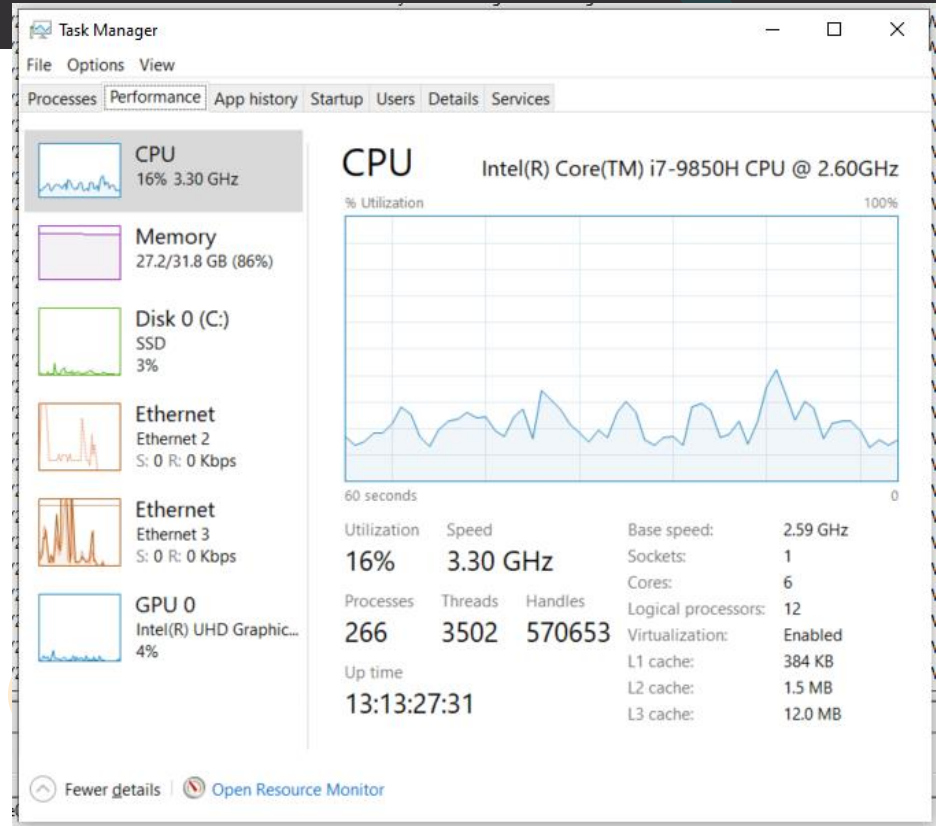
Resource Monitor

- Deeper Breakdown of what components are getting used

- Can be used to see where the slowness is coming from
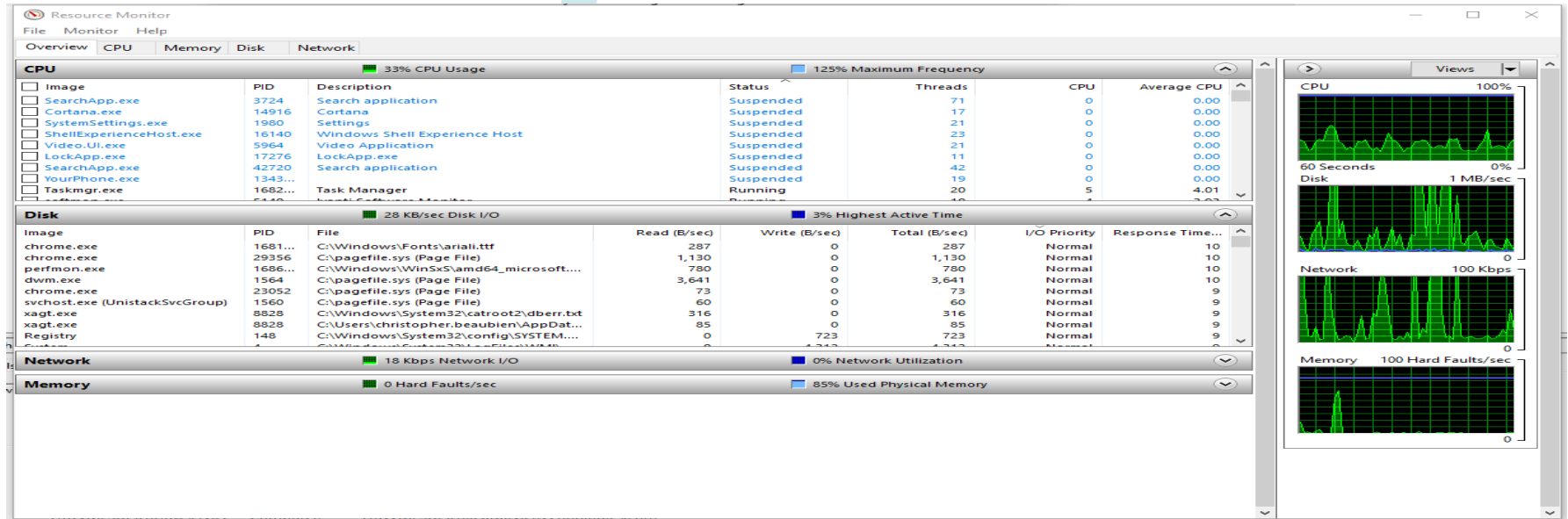
Anti-Virus Exclusions

- One of the most common support cases for slowness

- Updated and documented here on Help Central

- https://nwerphelp.tylertech.com/nwerp_help_2019.1/Content/FO%20Imports%20I/Anti-Virus%20Exclusions.htm?Highlight=anti-virus

- Just because it's not reporting anything doesn't mean it's not affecting something

Windows Server Updates

- Two Cumulative Update releases monthly

  - Security Fixes 'Patch Tuesday' (2nd Tuesday)

  - Quality Release (4th Tuesday) – rolls into the next 'Patch Tuesday'

  - Install regularly to your servers (TEST, then LIVE)

- Zero-day vulnerabilities

  - Deploy as soon as possible

  - May accelerate your Cumulative Update schedule

Client Workstation Updates

- Windows Updates

- Other MS Updates (Office, Defender)

- Browsers (Chrome, Edge)

- Antivirus / Malware signature updates

  - Email

  - Web sites

  - USB

Update & Security
Windows Update, recovery, backup

SQL Server Maintenance

SQL Backups

- Back up your database!

- Get notified that automated backups are working

- Run test recoveries

- Backup location
  - On-site (recovery time)
  - Off-site (safer)
  - If it has to be just one....off-site is best

- How often?
  - Full backup – daily
  - Transaction log backup – hourly

SQL Server Maintenance Plans

- Check Database Integrity (DBCC CHECKDB)

- Rebuild Index

- sp_updatestatistics

- History Cleanup - msdb database can grow large

- NEVER run the Shrink Database task
  - Can lead to corruption
- Run these tasks during off-peak hours

SQL Server Profiler

- Identify Bottlenecks

- Trace Server Performance
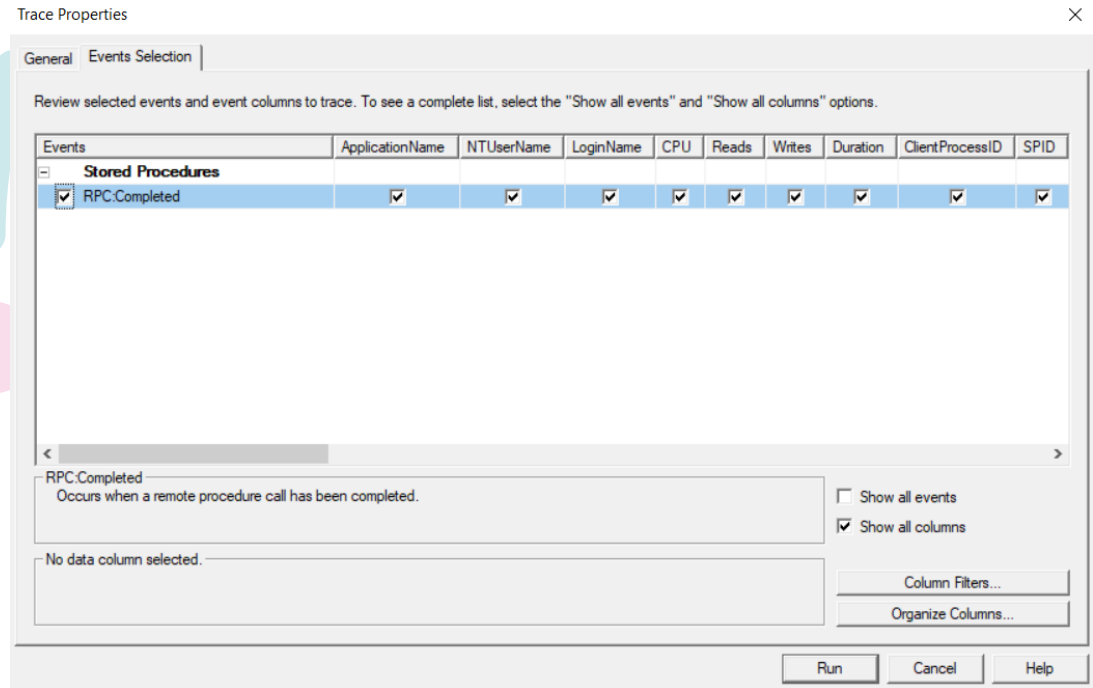
SP_Who2

- Find blocks + current queries

- BlkBy Column

- This tool is limited in use but also powerful

SP_WhoIsActive

- *Real-Time* view of SQL performance

- Download it from Adam Mechanic
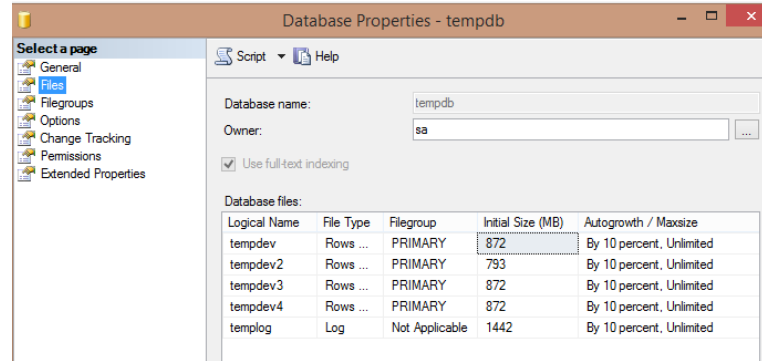
Temp DB

- Multiple versions of Temp DB with proper sizing
- Watch what size your Temp DB gets to after several days of use
- Set the initial size to a value bigger than the standard working size
- If Temp DB can have its own drive, that is best
- Create additional Temp DBs and restart SQL afterward
  - Microsoft recommends one Temp DB per processor core

Temp DB

- Brent Ozar
- https://www.brentozar.com/archive/2016/01/cheat-sheet-how-to-configure-tempdb-for-microsoft-sql-server/

Network Maintenance

Routers / Switches

- Update
  - Firmware
  - Software
- Check health
  - Logs
  - Fans
  - Temperature
  - Traffic
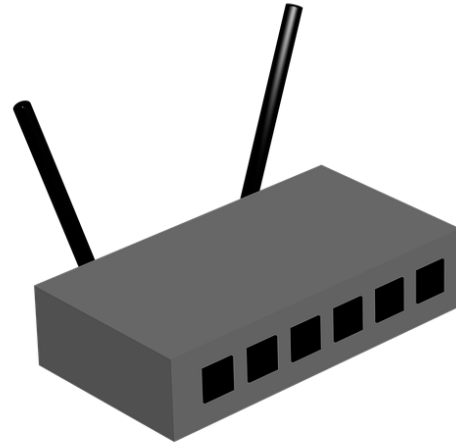
Monitoring / Tuning

- Have you baselined your network?
- Once a month
  - Verify the performance
    - Network
    - Devices
  - Check traffic
    - Amount
    - Direction
  - Identify and troubleshoot issues

Documentation

- Have you documented your network?

- Critical to troubleshooting and support

- Update Monthly

  - Interconnects between devices

  - Configuration information

  - Inventory of all network devices and components

  - Physical topology network diagram

  - Logical topology network diagram

  - IP addresses

Documentation - Physical

- Physical Topology – How devices and cables are placed in the network
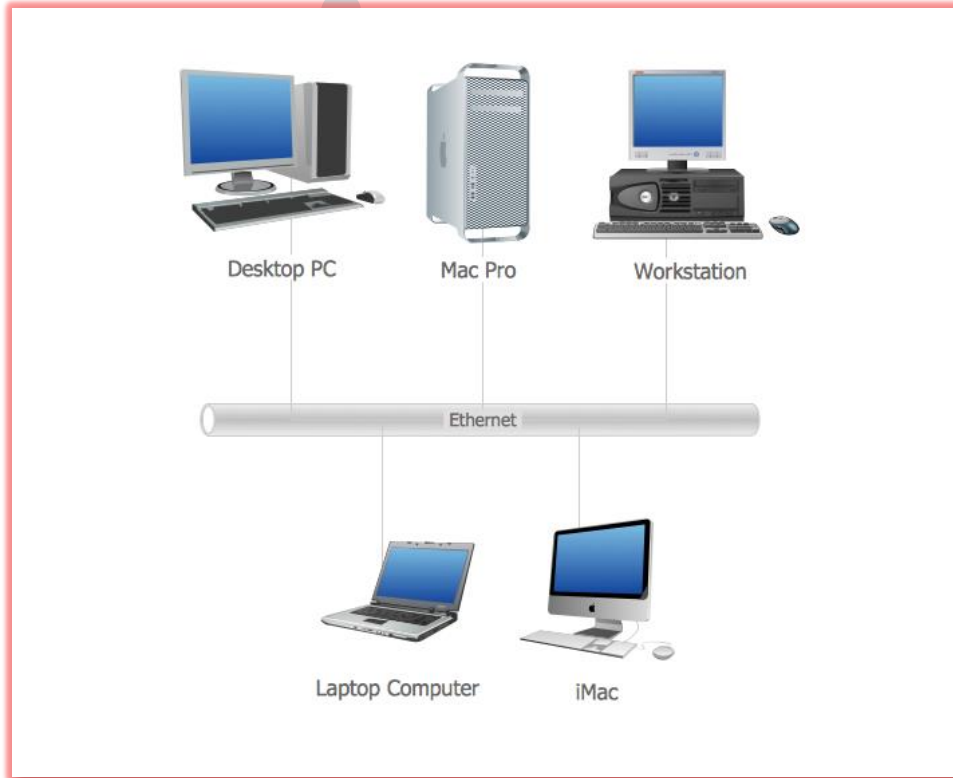
Documentation - Logical

- Logical Topology – How the devices communicate
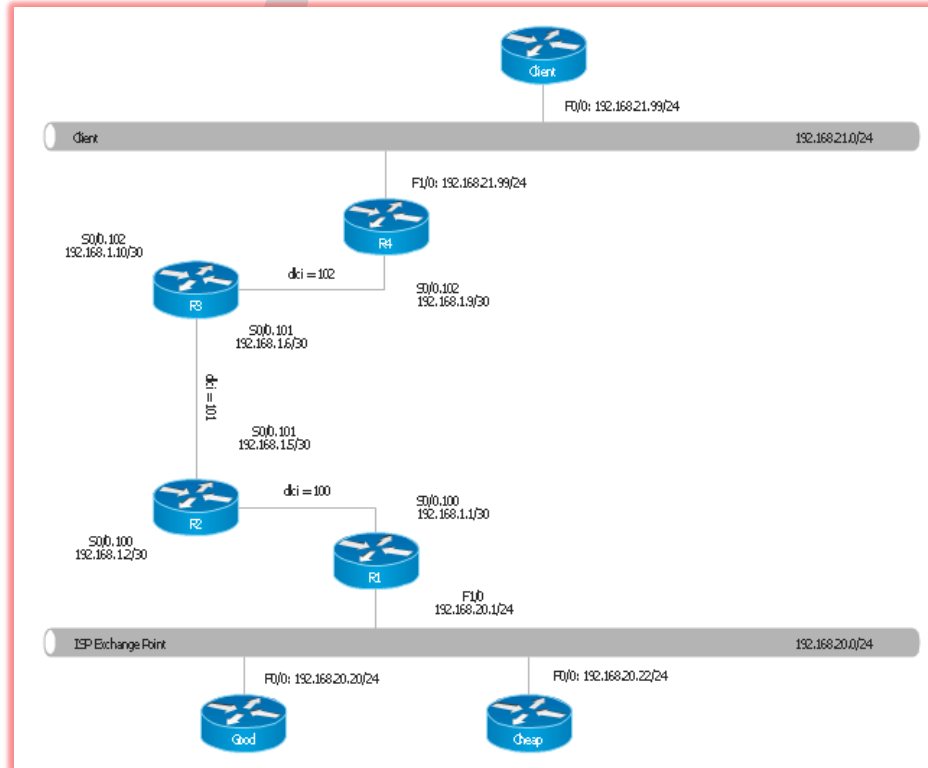
Security

- Firewall logs
    - Intrusion attempts
    - Suspicious activity
- Firewall firmware/software
    - Backup configuration
    - Update
- Password rotation

- Security Audit
    - Simulate intrusion attacks
    - Identify deficiencies
    - Tyler Cybersecurity Solutions

Tracert

- What route does the network take to get to your site?


```
Ethernet adapter Bluetooth Network Connection:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

C:\Users\christopher.beaubien>tracert google.com

Tracing route to google.com [172.217.2.110]
over a maximum of 30 hops:

  1     1 ms    <1 ms    <1 ms  dsldevice.attlocal.net [192.168.1.254]
  2    19 ms    19 ms    18 ms  76-250-212-1.lightspeed.livnmi.sbcglobal.net [76.250.212.1]
  3    19 ms    20 ms    19 ms  71.151.198.117
  4     *        *        *     Request timed out.
  5     *        *        *     Request timed out.
  6    30 ms    30 ms    30 ms  32.130.17.201
  7    29 ms    30 ms    30 ms  12.255.10.36
  8    29 ms    29 ms    29 ms  74.125.251.183
  9    31 ms    35 ms    70 ms  108.170.244.15
 10     *       30 ms    30 ms  142.251.233.223
 11     *       48 ms    47 ms  142.251.49.168
 12    48 ms    48 ms    48 ms  142.251.49.156
 13    47 ms    46 ms    46 ms  108.170.246.65
 14    47 ms    47 ms    47 ms  209.85.252.19
 15    50 ms    50 ms    50 ms  iad23s72-in-f14.1e100.net [172.217.2.110]

Trace complete.

C:\Users\christopher.beaubien>
```

How Does Tracert Help?

- Shows where the traffic is failing


```
C:\Program Files (x86)\RabbitMQ Server\rabbitmq_server-3.3.0\sbin>tracert 10.221.81.253

Tracing route to 10.221.81.253 over a maximum of 30 hops

  1    <1 ms    <1 ms    <1 ms   10.236.18.1
  2    <1 ms    <1 ms    <1 ms   10.236.18.1
  3    <1 ms     1 ms     2 ms   yar-rtr-5548-01-eth1-5.tylerhost.net [10.143.255.1]
  4    <1 ms    <1 ms    <1 ms   yarm-5540-fw.datacenter.asp [172.30.100.1]
  5     *         *         *     Request timed out.
  6     *         *         *     Request timed out.
  7     *
```
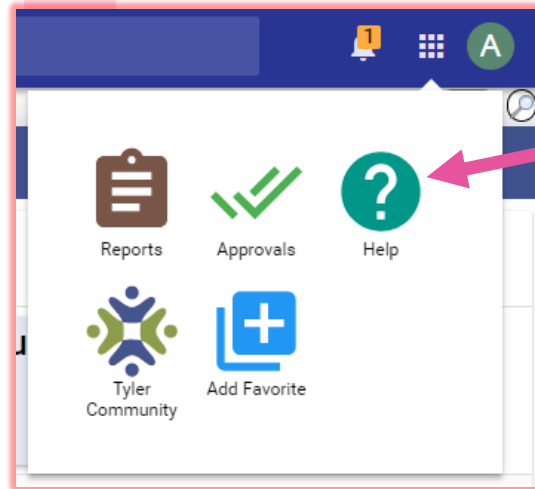
New World ERP

new world ERP Help Central

- Check periodically
- Help link from new world ERP
- https://nwerphelp.tylertech.com/nwerp_help_latestversion/Content/Home.htm
- System-Wide Maintenance → Technical Troubleshooting/Setup Documents
- Self Service Solutions for Common Problems

new world ERP Help Central

You are here: Applications & Maintenance > System-Wide

System-Wide

Welcome to Help Central's resource page for New World ERP system-wide information. Here you will find links to related documentation, videos, and community portals, as well as timely announcements when applicable.

Select a help resource from below or a help topic from the table of contents at the right. The contents are organized to match the Maintenance menu layout.

User Documentation

▣ **Administrator's Guides**

▣ **Technical Troubleshooting/Setup Documents**

▣ **Miscellaneous**

Applications & Maintenance
   Community Development
   Financial Management
   Human Resources
   Utility Management
   eSuite
   System-Wide
      Home Page Overview
      Global Search
      Security

tyler technologies

Technical Troubleshooting/Setup Documents

- » [Adding a Printer to the App Server](#)
- » [Anti-Virus Exclusions](#)
- » [Capping Analysis Services Memory](#)
- » [CD Search Index Restart Guide](#)
- » [Changing Logos App Pool Identity](#)
- » [Changing Signature on Echo Form Checks and POs](#)
- » [Changing the Color of the New World ERP Header](#)

- » [eSuite Customization](#)
- » [Exporting HTML to Excel](#)
- » [Find Hardware Requirements Using Check.TylerTech.com](#)
- » [MSDTC Setup for new world ERP](#)
- » [New World ERP Restart](#)
- » [Password Security Options](#)
- » [Pointing DSS to Another Database](#)
- » [Publishing eSuite](#)

Questions?

CONNECT 24

tyler technologies