

WINTER 2018

# < THE SOURCE >

Hints, tips, tools and resources from real IT geeks.

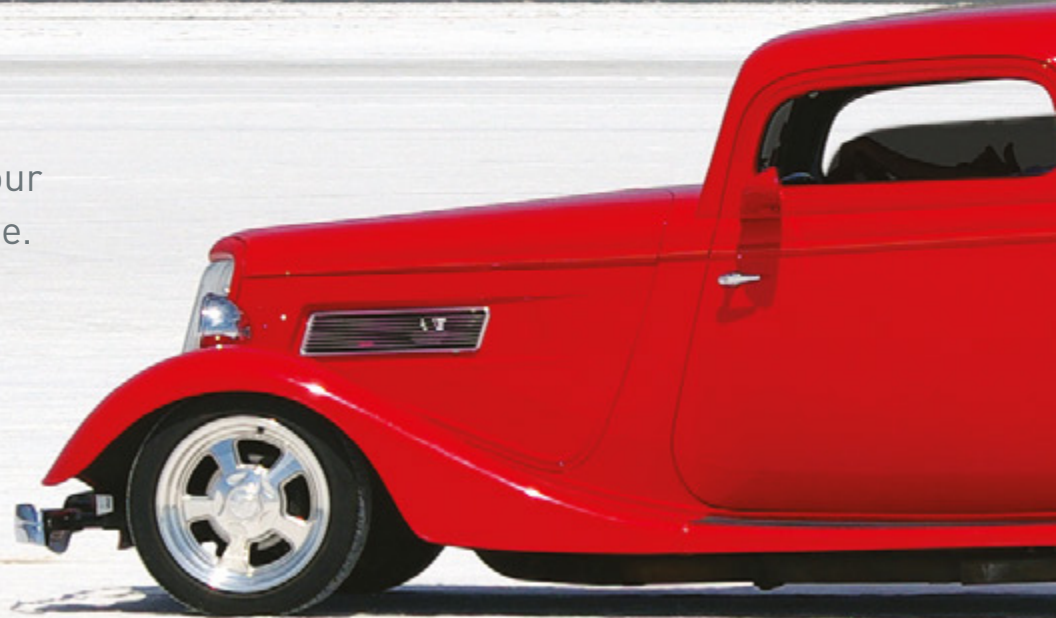


## NEED FOR SPEED.

Test your Internet connection and make sure your service provider's getting you over the finish line.

### IN THIS EDITION

- Internet Speed Tests
- Cable Specifications
- PowerShell
- Digital Signage
- Cleaning Active Directory





## Welcome to the Winter edition of The Source - hints, tips, tools, and resources for IT novices and experts alike.

In this edition, we show you how to test the speed of your Internet connection, push the capabilities of your cabling and introduce you to an indispensable IT superhero. We also explore digital signage from Rise Vision and how to keep Active Directory clean with a little help from AD Tidy.

I hope you find the magazine useful and if you have any questions check out our blog, connect with us online or give us a call.

Sincerely, Jesse.



**Jesse Rink**  
OWNER, SOURCE ONE  
TECHNOLOGY.

An experienced network engineer, Jesse has been sharing his expertise and experience with schools, non-profits and businesses in South Eastern Wisconsin for over 18 years.

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# Internet Speed Tests

**One piece of advice we always provide to our customers is to never rely on one specific website for testing the internet bandwidth speed as provided by your ISP (Internet Service Provider). In almost all cases, you are better served using 2-3 different testing sites to test your overall speed.**

Different testing sites utilize different paths on the internet to your given location, so your results (for both upload and download speeds) may vary greatly. Don't rely on just one site or one single test!

It is always advisable to perform your tests from a wired (not wireless!) connection whenever possible. Furthermore, in many cases, your ISP may also require you to remove your corporate firewall and plug a computer directly into the ISP handoff to more accurately test the connection.

Please note that some speed test sites do require the use of a Flash plug-in or other browser plug-in.

Here is a list of readily available speed test sites you can make use of in the future:

**Speakeasy Speed Test**  
**Speedtest**  
**Alternative Spectrum Speedtest**  
**Xfinity Speedtest**  
**Wiscnet Speedtest**  
**Spectrum Speedtest**  
**AT&T Speedtest**  
**Fast Speedtest**

[WWW.SPEAKEASY.NET/SPEEDTEST/](http://WWW.SPEAKEASY.NET/SPEEDTEST/)

[WWW.SPEEDTEST.NET/](http://WWW.SPEEDTEST.NET/)

[SPEEDTEST.OHIORDC.RR.COM/](http://SPEEDTEST.OHIORDC.RR.COM/)

[SPEEDTEST.XFINITY.COM/](http://SPEEDTEST.XFINITY.COM/)

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# WAITING ON THE CABLE GUY?

## UTP ethernet cabling specifications.

If you're like most people in IT, you probably find yourself relying heavily on your cabling vendor to keep you updated as to what kind of Ethernet cabling to run for various wiring projects.

Admittedly, it can be confusing trying to remember the maximum speeds and the associated distances that can be used in the ever changing world of Ethernet cabling. We created this infographic below to help IT administrators gauge which Ethernet cabling types can be used for the desired outcome they want as it relates to the distance of the cabling pull versus the desired maximum throughput.

One exciting change is that the newer NBase-T Alliance standard, IEEE 802.3bz, is gaining

increasing support from manufacturers. In short, this means that Cat 5e cabling can now be pushed past the previous 1Gb limitation, and be used at either 2.5Gb or 5Gb so long as you have the following in place:

- A switch capable of providing "Multi-gigabit" or "Smart Rate" ports
- A device capable of utilizing "Multi-gigabit" or "Smart Rate" ports

This can be extremely valuable to organizations that are looking to maximum throughput to 802.11ac wave 1 or wave 2 Access Points which have the capability of eclipsing the 1Gb limitation. With the right Switches and Access Points, customers can retain their existing Cat 5e cabling, potentially saving them big dollars!

### UTP Ethernet Cabling Specifications

Cable Type vs. Distance vs. Maximum Throughput

- Good to go!
- May be capable
- Don't even try it

UTP Cable Type	10Mb	100Mb	1Gb	2.5Gb**	5Gb**	10Gb	40Gb	100Gb
Cat 5	100m	100m	x	x	x	x	x	x
Cat 5e	100m	100m	100m	100m**	100m**	x	x	x
Cat 6	100m	100m	100m	100m**	55-100m**	55m	x	x
Cat 6a	100m	100m	100m	100m**	100m**	100m	x	x
Cat 7	100m	500m	500m	500m**	500m**	500m	50m	15m
Cat 7a	100m	500m	500m	500m**	500m**	500m	100m	100m

\*\* Nbase-T Alliance Standards now allow for 2.5Gb and 5Gb throughput on older cabling when coupled with applicable switching hardware.

\*\* Cisco refers to this as "Multigigabit" ports and HPE refers to this as "Smart Rate" ports on their associated networking equipment.

## NETWORK ADMINISTRATION

# POWERSHELL

PowerShell is by far the most powerful scripting language built into all modern Windows operating systems and server software including cloud services like Azure.

Not only is it baked into the Microsoft ecosystem, 3rd party products like VMware, Veeam, AWS...the list goes on, all offer PowerShell extensions that support nearly all the functions available within their GUI. Nearly everything that can be done via GUI can be done via PowerShell.

If you are on the fence about whether investing your time into learning PowerShell is worth the effort, consider the following scenarios:

- Find yourself doing repetitive tasks frequently
- Would like to roll-out system server/client changes on a large scale
- Build IT workflows and automation for system administration
- Need to ensure system configurations maintain compliancy
- Generate custom Excel system reports for IT management



**Website:**

[DOCS.MICROSOFT.COM/EN-US/POWERSHELL](https://docs.microsoft.com/en-us/powershell)

**TechNet** (repository of free scripts):

[GALLERY.TECHNET.MICROSOFT.COM/SCRIPTCENTER](https://gallery.technet.microsoft.com/scriptcenter)

**Download** (Windows):

[WWW.MICROSOFT.COM/EN-US/DOWNLOAD/DETAILS.ASPX?ID=54616](https://www.microsoft.com/en-us/download/details.aspx?id=54616)

**Download** (macOS & Linux):

[GITHUB.COM/POWERSHELL/POWERSHELL](https://github.com/powershell/powershell)

PowerShell has been around for over 10-years and is now the 'goto' scripting language for system administrators.

PowerShell is also Open Source, and available for Linux and macOS. Granted, there are only limited use cases in these scenarios, but it's great to see Microsoft make strides to provide PowerShell coders some flexible options in hybrid environments!



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# RISE TO THE OCCASION

## Delivering your message with digital signage.

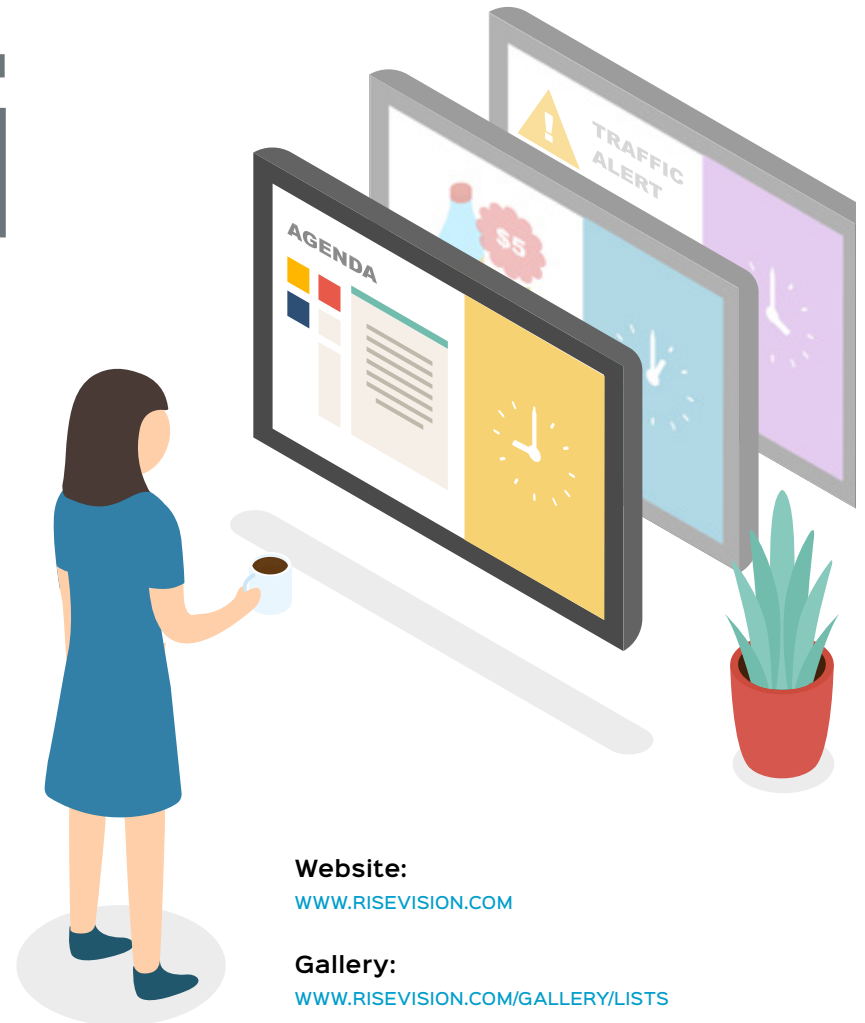
**Providing timely, accurate information to your employees, students, or visitors is always important. Unfortunately, emails, bulk mailers, website announcements and hardcopy flyers all provide a static 'spray and pray' approach and can fall short.**

Digital signage, in contrast, lets your organization deliver faster 'real-time' and often interactive communication with your audience while they are on-site.

Fortunately, with the cost of large displays constantly falling, announcing upcoming events, school schedules, the status of projects, sales forecasts, etc. has never been easier or more affordable.

Several of our clients have successfully rolled-out their own digital signage solutions, and one we suggest you try is digital signage software from Rise Vision. A very versatile product, it started off as open source and still offers a free option.

- Free to Enterprise solutions available
- Free templates & widgets to get you started
- Real-time/Interactive Content (scheduled dates & times)
- Web-based authoring, click-and-drag, built on the latest web standards
- Choose your own hardware



### Website:

[WWW.RISEVISION.COM](http://WWW.RISEVISION.COM)

### Gallery:

[WWW.RISEVISION.COM/GALLERY/LISTS](http://WWW.RISEVISION.COM/GALLERY/LISTS)

### Best Practices:

[WWW.RISEVISION.COM/BLOG/INTERACTIVE-DIGITAL-SIGNAGE-BEST-PRACTICES](http://WWW.RISEVISION.COM/BLOG/INTERACTIVE-DIGITAL-SIGNAGE-BEST-PRACTICES)

→ AVAILABLE FOR: WINDOWS, LINUX, CHROMEOS, ANDROID AND RASPBERRY PI



# A clean sweep

## Cleaning up Active Directory.

**Active Directory user and computer object maintenance improves security and ease of use of your directory environment.**

AD Tidy by Cjwdev Ltd is a free graphical tool to find and bulk manage users and computers.

You simply create a filter such as “all users in the Staff OU that have not logged in within the past 180 days and are not disabled”, run the search, and then select from the results any number of users (or all users matching the criteria) and perform actions on those objects.

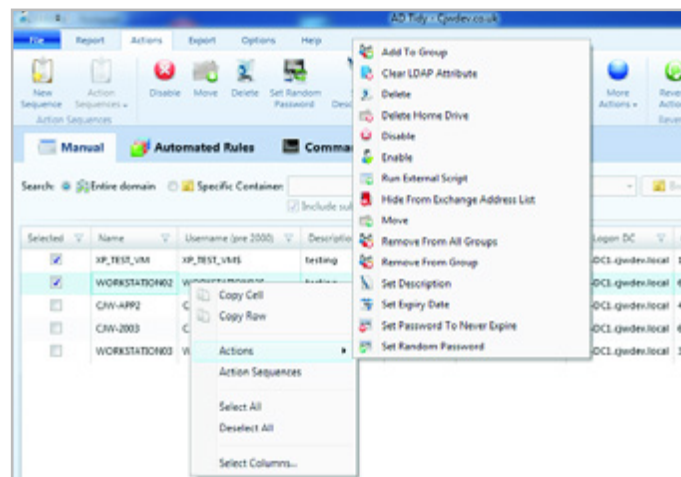
For example, you might run the following commands as part of a de-provisioning process: Disable, Move, “Hide from Exchange Address List,” “Remove From All Groups.” AD Tidy will show you per-object Action results and offer to export them to a log.



There is an inexpensive paid version that lets you set these steps up as action sequences or have your task sequence automated.

**Website:**

[WWW.CJWDEV.COM/SOFTWARE/ADTIDY/INFO.HTML](http://WWW.CJWDEV.COM/SOFTWARE/ADTIDY/INFO.HTML)



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We reached out to Source One Technology based off of a referral and we are so glad we did. They have supported our rapid growth, need for excellent protection and security as well as provided education along the way. You won't be disappointed if you hire Source One Technology!

Beckie Kaczowski  
**CORPORATE OPERATIONS DIRECTOR**  
INSITE HEALTH

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[sourceonetechnology.com/testimonials](http://sourceonetechnology.com/testimonials)



To find out how we can help you save time and money on frustrating network and computer issues, call (262) 993 2231 or visit [www.sourceonetechnology.com](http://www.sourceonetechnology.com).