

# Troubleshooting Methodologies: Hardware, Software and Network Problems

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# Start with fact finding

- Ask lots of questions
- Begin to build a picture
- Gather data with tools, knowledge and trust your experience/intuition

# Be Prepared - Mental

- Organize/Bring your toolkit
- Try and be ready for anything
- Think ahead
- Expect the unexpected and don't stress

# Be Prepared - Physical

- Some examples
  - Cable Toner
  - WiFi Sniffer/Analyzer
  - Drives with latest installers
  - Cables/Adapters

# Troubleshooting Mindset

- Work with a calm mind
- Slow down
- Fix root causes
- Multiple causes

# Drop out of tech mode

- Listen
- Speak at level of user - use reiteration
- Set realistic expectations
- Occam's razor - seek out the simple

# Best Practice Methodology: Basics

- Reproduce error (PEBCAK)
- Different user/using the system differently?
- Real life common causes
- Re-seat connections

# Best Practice Methodology:

## Things to assess

- Similar issues
- Network changes
- Hardware/Physical signs
- Software
- Check setting environment variables

# Troubleshooting by Area

- Example - Printers
  - Printer sharing vs. network printers
  - Identify origin of issues
  - Printing troubleshooting tips

# Troubleshooting by Area

- Example Networking
  - Isolation of problems
  - Wireless vs. Wired Techniques
  - When you need a router expert

# Best Practice Always

- Carefully diagnose problems
- Take breaks - 20 minute rule
- Be mindful of time/cost
- Keep expectations set with Client
- Consult with others/lists/forums
- Sleep on it if you can

# Concluding Points

- Listen
- Make sure user is not being unreasonable/You can say No
- Set Expectations
- Have your toolkit ready
- Know when to reach out or give up

# Troubleshooting Toolkit

- HD
- OS
- Diagnostics Apps
- Updaters/Installers
- UPS

# Troubleshooting Tools: Apple Tools

- Command Line Shell
- Directory Services Editor
- Log Reader
- Network tools

# Troubleshooting Tools: Apple Tools

- OS Console Logs
- Activity Monitor
- OS Recovery
- Wi-Fi Diagnostics

# Troubleshooting Tools: Third Party

- Smart Utility - HD Issues
- Memtest
- iStumbler - WiFi
- Sandbox and Batchmod - Files and Permissions
- Build your kit

# Troubleshooting Tools: Third Party

- Network Discovery
- Plist Viewer & Editors
- Text Editor
- Disk Utilities

# Troubleshooting Tools: Command line

- DNS & Directory Services
- Files & Permissions
- Network
- System Activity

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