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with no hardware? Hardware has become so cheap, reliable and generally good, many of us take this part of our technology experience for granted. It has been ten years since ...

Randy Johnston • Sep. 18, 2017



With so much focus on Cloud and Mobile, can you imagine using your technology

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With cloud strategies, including both hosting and SaaS, does local hardware matter? The short answer is yes, although some would debate that response. Like many technology answers, “it depends”. Depends on what? Several items determine how much you must worry about these factors, for example: do you work locally, do you have reliable Internet access, how fast is your internet speed, are your applications available in the cloud, and how secure does your data need to be? Cloud will probably not be cheaper, but is more likely to be accessible anywhere, anytime on any device. The following table outlines some of the components that you need to consider in a typical computer deployment:

Component	Good	Better	Best
Firewall	True Firewall	Security Services	Managed
Gigabit Switch	Layer 2- Trunking	Stacked Backplane	Layer 3 Chassis
Cabling	CAT 6A	CAT 6AF	CAT 8
Workstation	Core i5 8GB	Core i7 8GB	Core i7 16GB
Monitor	Two 22”	Three 24”	One-Two 27-32”
Storage	15K Drives	SSD	SSD NVMe
From Cloud provider:			
Server	Tower	Rack Xeon	Rack Xeon
SAN	iSCSI	SATA	Fiber Channel

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separately if you use public cloud or a hosted provider service. All the components including: Firewall, Gigabit Switch, cabling, workstation (desktop or portable), monitor and storage still need to be managed, patched and replaced whether you are in the cloud or run a premised based private cloud. Occasionally your hosted vendor will specify and require a particular firewall or switch and even less frequently the workstations will be managed by your hosted provider. Budget for replacements on a three to five-year cycle to keep your team members productivity high. Oh, and by the way, never forget backup and security!

Computers are still sold at the rate of around 300 million per year with slightly declining volume over the past years, but with an increase in volume so far this year. Tablet volume is less than computers and declining more rapidly. Some users are trying to do the majority of their work from a mobile phone, but accounting and productivity workers rarely find a mobile only solution viable. What should you look for in a current computer? Acceptable specifications include:

- For processors, pick 6th-8th generation Intel i5/i7/Xeon processors
 - o Possibly new AMD Ryzen
 - o Avoid i3, Atom, Celeron
 - o If mobile, look for 2 in 1 or 3 in 1 designs, so the laptop can also be used at a tablet. By the way, we always recommend touch screen to improve productivity.
- Other specifications
 - o Solid State Drive (256 GB+) – M.2 NVMe
 - o 8-16 GB RAM
 - o Stick with business grade/workstation grade hardware

- o Touch screen

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- HIPPA screen filters built in hardware
- Security management features
- Monitors
 - o Use larger models (27-34") that have been manufactured in 2017 or later to get newer quantum dot or nanoparticle technology – this results in higher resolution
 - o Consider two monitors that are larger instead of three or four monitors
- Cabling/Wireless
 - o The current international standard is CAT8
 - o Minimum cable specification is CAT6A
 - o You may want to consider recabling if your system is more than 12 years old, and you are using CAT5, CAT5e or CAT6. This will likely cost \$250 per cable drop.
 - o Use 802.11ac Mesh wireless – set up at least a private wireless and public wireless if you are making wireless available in your office
- Possible computer selections include:
 - o HP Spectre x360 – <http://store.hp.com/us/en/mdp/laptops/spectre-x360-211501-1>
 - o HP ProBook 650 G3 – <http://store.hp.com/us/en/pdp/hp-probook-650-g3-notebook-pc—customizable-x6u18av-mb>
 - o Dell Latitude 7480 – <http://www.dell.com/en-us/work/shop/productdetails/latitude-14-7480-laptop>

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that have come of age and you should consider implementing now if you have not done so already. These technologies include: disk encryption, multi-factor authentication (MFA), Mobile Device Management (MDM), and may generate additional monthly charges. If you are a Windows user, Windows 10 and Office 365 has made it easier to implement these technologies. As we head into the next year, Microsoft 365 will combine Windows, Office and MDM into a single offering at a single price. To comply with PCI regulations, MFA will be required on all accounts that have PCI admin access. Because of this, we're recommending deploying MFA to all users.

The building blocks above are a good starting place, but note that we have not identified any of the software solutions needed to run a business or use in your home, with the exception of Office 365. We can select productivity software in the form of Office 365, Zoho Office, or GSuite, all of which include email service. We can select SaaS based accounting software such as Sage One, Sage Live, Intuit QuickBooks Online, Zoho Books, Microsoft Dynamics 365, or Acumatica. We can add document management, specialty applications such as time and expense reporting or bill payment and many more. It doesn't matter what we choose, processing power will be needed on the servers and some processing power will be needed locally. If we ignore the local device, whether it is a phone, tablet or computer, we are likely to cut user productivity.

How Much?

Now that we understand the current building blocks needed, how much is this going to cost us? Most software vendors are converting to subscription models, which means that they are trying to get us to pay a monthly fee. For example, the new Microsoft Office 365 which is a complete, intelligent solution, including Office 365, Windows 10, and Enterprise Mobility + Security, is \$20/user/month. Tools that either do or will require a subscription include Windows (\$10/month), anti-virus

(\$5-10/month), spam control (\$5-10/month), Office (\$12-35/month), Adobe DC (\$15-

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drive up productivity.

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