

**Getting Cloud Ready!**  
 Joseph Axne – [jaxne@it-guru.net](mailto:jaxne@it-guru.net)

The Veterinary Hospital Managers Association (VHMA)

PRESENTS

**MANAGEMENT  
 MUSTS**

2016 VHMA  
 ANNUAL CONFERENCE




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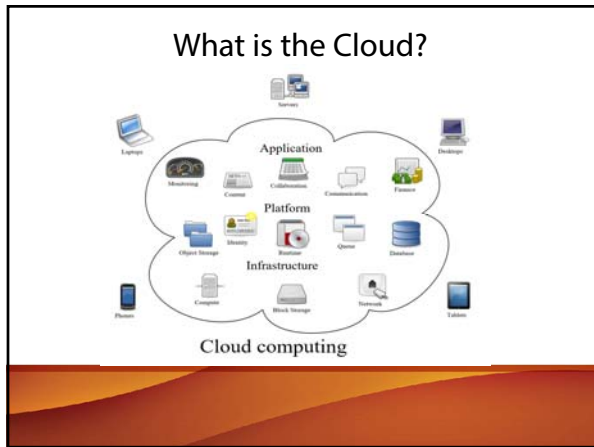
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### Veterinary Cloud Providers

- VetStreet, The Vet App- Marketing, Social Media, Communication
- Vetlabs, Antech, Idexx Labs – Lab Integrations
- Idexx Neo, ezVet, VetPort – Practice Management Solutions
- ClearVet, SoundVet, - Digital Imaging, UltraSounds, PACS

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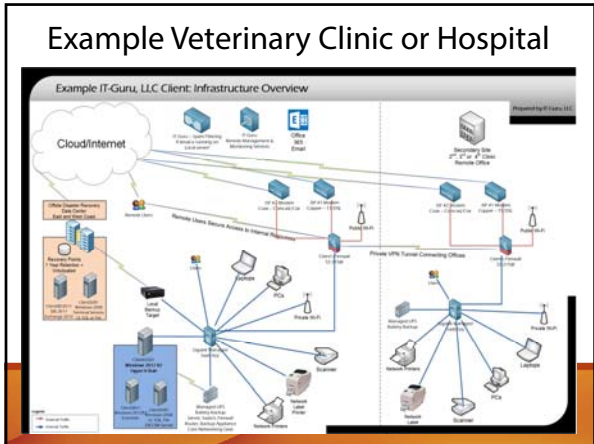
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- ### Break Down of Each Area
- Power Management
  - Network Management
  - Internet Service Provider
  - Server Management
  - Desktop Management
  - Printers and Scanners
  - Backup and Disaster Recovery
  - Email
  - Remote Monitoring and Remediation/Proactive Management

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### Solutions/Examples = Flavors of Ice Cream

We will give you examples of solutions, but think of them as "Our Flavor of Choice".  
We would rather you understand why we recommend the certain standards/essentials as we go through each Area.

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### Power Management

- Without Power, getting to the cloud is extremely difficult.
- Clean Power with no interruption is important for all centralized equipment (Servers, Switches, Routers, Internet Provider, Backup Appliance, etc).
- UPS – Uninterruptable Power Supply or Battery Backup System should have run time of at least 10 minutes and be able to gracefully shut down any important servers or gear vs just having them crash from now power.
- Is UPS network Managed so full insight, testing and notifications are setup for proactive alerts and incident alerting.

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### Power Management

- PDF Handout of Questions



APC is product we use, but this is an example of the flavor we prefer.

Main point here is that it is a **managed** device, that is plugged into the **network** has the ability to give you or your IT Team insight into any building wiring issues, testing capability, and ability to gracefully shutdown important systems instead of what we call a hard shutdown.

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### Network Management

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- Business Class Firewall, active support agreement and security services (Sophos is our Flavor).
- Public and Private WIFI.
- Uncommon Subnets used (Important for anyone wanting to work remotely).
- OpenDNS (our flavor of secondary security service) for layered approach to security.
- Managed Switch that you can gain insight into, look at each and every port, assure proper connectivity, no errors, etc.
- Cabling Must be Cat5e or better ask your IT or cabling person and assure it is organized and clean.

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## Network Management

- Example Small Vet Clinic's Wiring Closet
  - No Power Management
  - No Cable Management
  - Two Non-Managed Switch's
  - One Internet Provider
  - WI-FI private only

Hard and time consuming to troubleshoot, no protection from smallest power outages, over complicated with more devices than needed, no redundancy for getting to Cloud.



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## Internet Service Provider (ISP)

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- Business Class Service (Comcast is a Flavor we prefer).
- Dual Internet – Best to utilize two connection protocols like Coax – Comcast, Cox, or local Cable TV provider  
Copper – T1, DSL, or Local phone company
  - Want two different service providers for Dual WAN (Wide Area Network) connection for best redundancy.
- Microwave or Site to Site connections are becoming really popular in Denver for primary or even secondary connections.

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### Internet Service Providers


Prepared by IT Consultants LLC

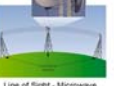
Internet Service Providers


  
Fiber Optic


  
Coax


  
4G LTE Cell Data Services

  
Copper DSL/T1

  
Line of Sight - Microwave

  
RP #2 Modem  
Coax - Comcast/Cox

  
RP #1 Modem  
Copper - T1/DSL

  
Client's Firewall  
17.21.19W

You want to use two different media like Fiber and Copper. Or Coax and Copper.

Sometimes we See T1 and DSL, but those ride the same media of Copper.

Outages can occur on many different levels but the different media protect against cutting of that media (i.e. Fiber Cut or Copper is Cut, then other Media is there to be backup provider)

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## Server Management

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- This section is quite technical in nature, so working with an IT professional or someone who Understands "Microsoft Servers" which is our flavor of Server Operating systems would be suggested. The majority of all On Premise Practice Management Solutions use Microsoft Servers.
- Microsoft Hyper-V Host is our flavor of Virtualization that we are recommending as an approach to easily recover production servers if necessary. Other Virtualization providers include VMWare, Zen, etc.
- SQL (Database Server) is our flavor, but assuring you have ways to get into the DB, and proper setup is important.
- DICOM – Veterinary specific standard we are trying to get our clients to over next 3-5 years. Centralized PACS that all DICOM images can be stored for X-Ray, Ultrasound, and Dentistry.

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## Server Management

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- Microsoft Windows is our Flavor. We use a tool called Windows Best Practice Analyzer (BPA) which is built into the system after Windows 2008 to assist tech professionals assure the system is using Microsoft Windows Server Role Best Practices.
- There is a BPA for almost all server roles that should be run especially after building a server and before promoting it into a production system. Then it should be run on the production system at least yearly to assure it stays inline with BPA results.
- Again, this is a very technical section that you will need to obtain help from IT professional or company that helped deploy the server.

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## Desktop Management

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- We never recommend deploying a machine straight from the box. But instead blow it completely away and use a fresh golden image or fresh install approach (Bloatware, Malware, etc.
- vPro (Intel) is Flavor we have decided on to allow us to manage machines remotely saving time to go onsite, start a computer remotely, mount a disk from a computer that can't start remotely – Quicker Faster Efficient Service.
- Encryption on Laptops is a standard that we will embrace in Q4 of 2016 for non-HIPPA clients – (Sophos Cloud Encryption will be our Flavor for this in the future).
- Business Class Name Brand Hardware – Not Frankenstein machines or Consumer Class.

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## Backup and Disaster Recovery

Hurricanes	Floods
Power outages	Tornadoes
Fires	Cryptolocker
Mechanical failure	Accidental Deletion




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## Email

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- We prefer two Flavors in this Category Microsoft Office 365 and Google Apps for Work (Gmail for Business). Not the free Gmail but the paid subscription to prevent sending issues.
- We are migrating anyone that uses on premise email server to go to Gmail or O365 as the provider.
- Stay away from Internet Service Provider email domains like [user@qwest.net](mailto:user@qwest.net) or [user@Comcast.net](mailto:user@Comcast.net) as this ties you to that provider and moving away from them is harder.
- Assure you are not using POP3 which stands for Post Office Protocol where you go and pull the email down to your workstation and remove it from the server. If you don't have good backups of that workstation and the hard drive fails (not a question of if, but when it fails) if you use POP3 then all your mail would be lost, gone, extremely difficult and time consuming to recover.

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## Proactive Management

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- Patch Management – Assuring Desktops/Servers are updated frequently with at least Critical updates
- Antivirus/Antimalware – Assure not only you have these installed, but are they being kept up to date at least daily
- Software Updates – 3rd party software patching is a MUST for things like Java, Adobe, Flash, Chrome, Firefox, Silverlight, etc. that all touch the Cloud.
- Assure any exceptions needed for the environment are in place. Malwarebytes is a flavor of Antimalware we like, but we had to assure we excluded ImproMed or it would quarantine files and stop Infinity from running. Same is true for Antivirus and now more and more banks require Trusteer Software that can conflict.
- Assure your Antivirus/AntiMalware/etc. all play well together create a standard and assure all machines have this standard.

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**Real World Example**

- Scenario – Employee was checking email on work computer – Crypto locker attack
  - A. Environment that is partially protected =
    - Destructive (Loss of Data on Server and Workstation).
    - Time Consuming (Long time to recover, extended downtime!)
    - Expensive (Staff can't work, Can't see patients, loss of business, Have to pay ransom, extended business downtime!
  - B. Environment that has the essentials
    - Prevents the attack from occurring on multiple different layers (Web Security, Firewall Security, PC

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**Questions**

**Contact Information:**

Joseph Axne  
Owner, IT-Guru  
303-520-3733 x9010  
[jaxne@it-guru.net](mailto:jaxne@it-guru.net)  
[www.veterinaryITsupport.com](http://www.veterinaryITsupport.com)

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