



Network / IT Planning Meeting 2014
May 2

Prepared for: Light & Motion
711 Neeson Rd
Marina, CA 93933

Current Configuration and Policies

WAN / Security

Broadband internet is provided through AT&T's MIS Fiber product and routed through AT&T's provided and managed telecom equipment. All Firewall, VPN, and WAN/LAN routing is managed by an aging SonicWALL NSA 240 appliance.

Switching

All network traffic is now channeled and managed by newly installed Cisco Smart Switches, with VOIP phones receiving data and power from Power-over-Ethernet (PoE) switches. All switches in main server room are at nearly full capacity

Servers

The current structure enlists 10 logical server environments performing various functions, listed below:

- LMI-HOST (Dell PE 2900) – The physical Hyper-V virtual host that houses the below servers:
 - o Small Business Server 2011: Active Directory/Security, Email, File Server, Sharepoint
 - o Filemaker: Legacy database server, for reference only
 - o ePDM: Enterprise Solidworks Database, catalogs changes and central management
 - o ProShip: Proship database and shipping management
 - o XT Connect: Linux distro for xTuple document send/receive
- LMI-DEV-SERVER – Now housed on a Lenovo PC (loaner): used for Proship development
- CITADEL – Remote Desktop Server, remote users use this to connect securely and run local apps
- LIGHT/MOTION – xTuple servers, dual server machines with live replication.
- LANDM – Wiki web server and other local services

Telephony

Voice service is provided by the Maynard Group and uses a hosted VoIP server with local IP based endpoints. The telephones are attached directly to PoE switches to reduce the need for power adapters

Workstations

Most individual workstations are running Windows 7 Professional, then Windows 8, Mac OS on Apple workstations, and a few remaining Windows XP operating systems. Windows XP is out of official support and those stations will need to be replaced or upgraded shortly.

Wireless LAN

There are multiple meshed 802.11ac wireless access points throughout the building to provide WiFi service to every room and portion of the building. There is a secure network that allows users to have full access to local machines and servers, and there is a guest network for allowing access to the internet but no access to network resources.

Recent Demands and Trends

More Virtual Servers

Tableau Server requires a dedicated Windows Server environment, as well as additional resources that the host is basically out of. The Remote Desktop Server (CITADEL) is extremely old and is having failing hard drive issues. While the data on this machine is not critical, its function is very critical for remote users. This server could be re-launched onto the new proposed host with version 2012 R2 and offer remote users on all platforms a host of updated and productive features. The LMI-DEV-SERVER was meant to be a temporary device for ProShip to perform tests and development, but it seems this server will be needed indefinitely, in which case would be best to be moved to the virtual environment, and off the Lenovo workstation it currently sits on.

Replace the Virtual Host

The Dell PowerEdge 2900 was extremely underused when we first inspected it, and now the opposite is true; it's bursting with virtual servers and has reached it's absolutely maximum capacity in processing capacity and space. In this proposal, we will be offering a new Virtual Host that employs Enterprise level processing, an abundance of RAM and storage, and cutting edge server technology to update the vastly growing demands of Light & Motions technology structure, as well as leave plenty of space for scalable growth.

Replacing Windows XP

Windows XP has been officially removed from support, which basically means Microsoft will no longer release security and update patches for XP or support any further issues with the operating system. Thus, we'll need to make sure any current XP PCs are replaced or upgraded to Windows 7 or Windows 8.

Improve Remote Access

More and more, staff of all kinds are benefiting from seamless remote access to their files, email, business applications, and ultimately their in-house desktop. Remote Desktop Server 2012 R2 coupled with newly available apps allow very smooth access to in-house desktops or to individual applications such as xTuple or Filemaker that run in a contained local environment and not on the user's personal device, which greatly improves performance. We are also proposing installing a new enterprise level Cisco Firewall and Router appliance to accommodate the increased network demands and VPN demands for remote users.

Proposed Additions and Changes (Ref. Quote # AAAQ1180)

New Virtual Machine Host

This machine will house 8 virtual servers (including Tableau) after installation, and will have a scalable capacity of about 2 – 2 ½ times the original setup. The Host will have 40 logical cores which can hold about 20-25 total virtual machines. It will start with 128GB of Registered ECC Memory, but is expandable to 768GB. And for storage, it will start with 8 drives at 1.8TB of space, and is expandable to 24 drives, with space depending on each drive capacity. * Optional, Seagate's new Enterprise SSHD Hybrid Drives will be released in a month or two, and would be a magnificent retrofit for the storage on this server by giving 300% drive performance without sacrificing any space. We suggest to either hold the project or work a buy-back program with Rayne to install the new drives when they come out as the benefits are tremendous. All components carry a full 5 year warranty, a next day RMA service, and all components are certified enterprise server parts.

Re-purpose Dell PowerEdge 2900

With the new 2012 Datacenter Hyper-V Replica function, we can add mass storage and a high-volume network card to this server and turn it into a near-replication device. This machine would exist side-by-side to the new server and replicate the virtual servers with about 30-90 seconds of delay, and if there were a hardware failure, we could turn up the virtual replicas and have the entire system back up and live from 10 – 60 minutes, thus greatly mitigating downtime due to any hardware failure, which is by far the most common threat to downtime.

OS Licensing

Windows Server 2012 Datacenter R2 is optimal because of the sheer server density. Datacenter licensing allows for unlimited virtual server environments, while Server 2012 Standard only allows 2 virtual servers PER license. So going forward, any additional Windows Server operating systems will not require additional licensing costs, except for application-specific licenses such as Remote Desktop Services or MS SQL, and this license will cover all existing server software and allow for any upgrades to 2012 R2.

Upgrade Firewall/Router to Cisco 5512X

The SonicWALL that is in place can be a hindrance to VoIP traffic and is an aging unit as well. The proposed unit is one of Cisco's newest and most advanced small-business models. It is packed with many features, modern VPN options, and advanced routing rules that will better fit the Light & Motion network growth and evolution. In addition to the new router, there is no more space on any of the regular data switches, so we need to add another 48 port Gigabit switch. We might also need a PoE switch for the phone system in the near future, but right now, there's room.

Windows XP Replacement

As mentioned before, any existing XP machines need to be upgraded or replaced soon, the longer they go unchanged, the more insecure they become. The following is a list of suggested changes to each XP machine:

- CHEECH – Production/Boxing computer, can be upgraded
- CHONG – Production computer, but is very old and needs to be replaced
- LIGHTBRITE – Light Lab computer, moderately old and not worth upgrading, needs replacing
- MOORE – Rare 64bit Windows XP used years ago in Engineering, can be upgraded
- PAGE – Production computer, can be upgraded
- TAPATIO – Dave Flores’ machine shop PC, fairly new and can be upgraded

Proposal of Managed Services Contract

Rayne Technology has evolved its structure to cater to Managed Services, which involves us contracting our full battery of services to our clients in an unlimited support and full services mode to better allow for budgeting and encourage the client utilize RTS as a full-fledged IT department. We would like to offer this service for Light & Motion going forward at a discounted rate that closely mirrors what Light & Motion has paid for typical labor costs over the last couple years. Included services would be the following:

- Unlimited help desk and tech support 8AM – 6PM, Monday through Friday
- 24/7 Live on-site monitoring of all devices on network
- Monthly report and asset summary
- Yearly full inventory and quarterly consulting
- Monthly server maintenance, monthly backup/replication testing
- Add / Remove users and Email maintenance
- Weekly Onsite visits regardless of calls
- New workstation installs and user migration
- Antivirus and Spam-Filtering Services (replaces your annual billing)
- Cloud data backup for workstations and Servers (Does not included Email or Databases)
- Full customer portal to submit tickets, track work, and view and pay invoices.

This will free Light & Motion up to contact us for any issue and receive all your monthly services and monitoring in a predictable and budget-friendly flat monthly rate. Any project requests, however, would be quoted and billed accordingly (.e. New server install, major network change, etc...). Below is a rough estimate of your monthly charge:

Monthly Contract Rate for Managed Services:	\$1,651 (Would dissolve your annual spam and AV bill)
Cloud Backup for each L&M Workstation:	\$750 (\$15/machine/month) *Optional
Datto Offsite Backup for Servers:	\$345
Replication Management	\$200 (Ongoing cost related to re-purposed Dell)

Datto Backup Services

Datto is an offsite backup service we are proposing that will save full image copies of your virtual servers to a remote datacenter and offers a better protection to our current in-house offsite backup solution, and it's about the same cost as your current offsite bill, with a more quality and stable backup.

Future Roadmap

Exchange Server

Within 2 – 3 years, the current Small Business Server with Exchange 2010 will become more antiquated to the messaging environment. Right now, it straddles the current average market between cutting-edge and obsolete, so there's no need to move on a change anytime soon, but after 2 or 3 years from now, it would be prudent to upgrade to either Exchange 2013 or whichever version is currently out at the time. This will incur licensing and labor costs at the time it is upgraded.

Workstations

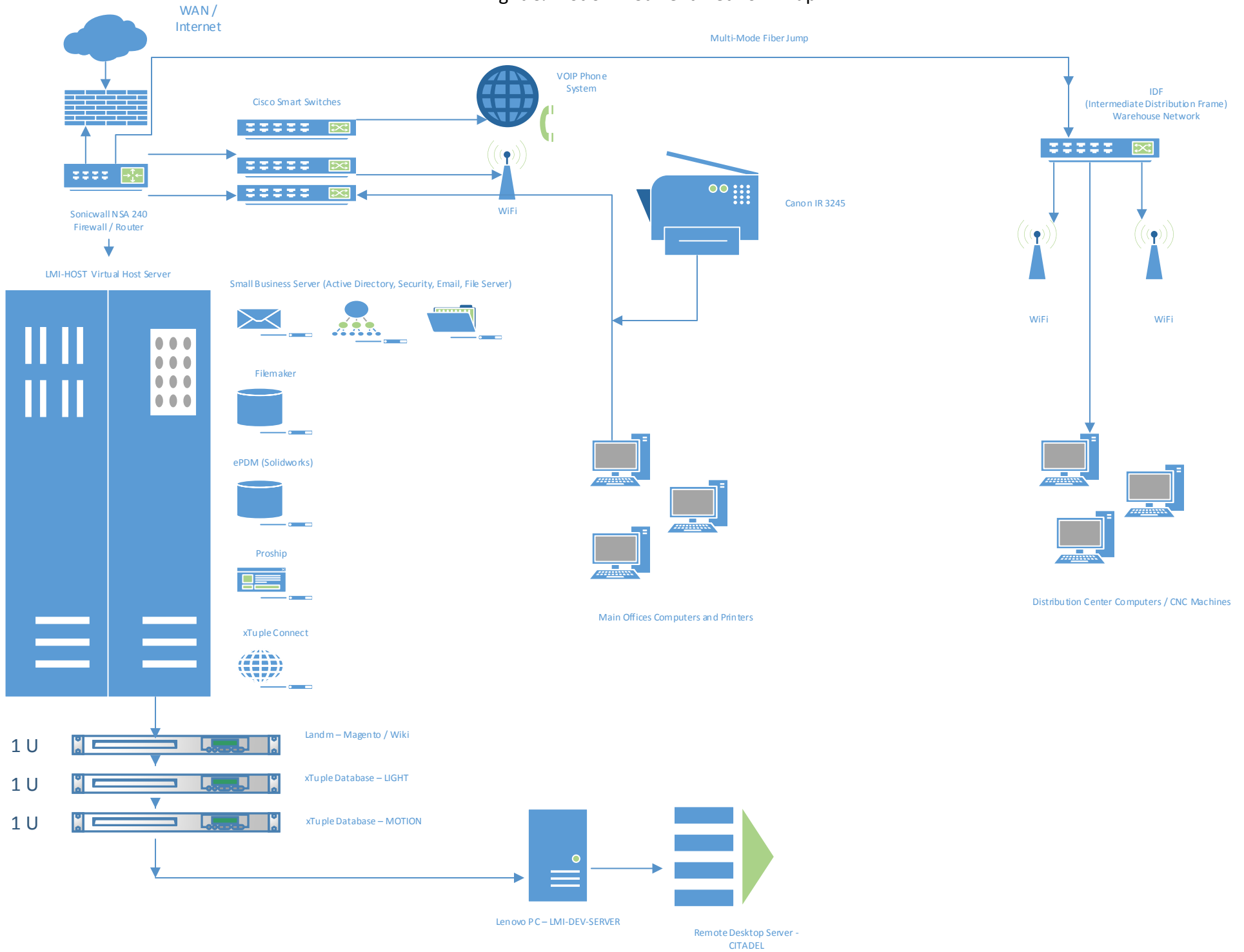
After the Windows XP machines are upgraded, the workstation environment will be quite optimal, but down the road, it will benefit productivity to upgraded slower machines to a solid state drive and maybe the current version of Windows or Mac OS. It may be quite a while before you will need to replace a healthy Windows 7 PC, but we would estimate around 24 months from now might be the first case of that need, if not later.

Network

As mentioned before, the network is new and optimal, but there will be a need to purchase new switches as demand for live ports grows.

Additional Notes?:

Light & Motion – Current Network Map





QUOTE

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Number AAAQ1180

Date May 7, 2014

Sold To

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Daniel Emerson
711 Neeson Rd
Marina, CA 93933
United States

Phone (831) 207-4699

Fax

Ship To

Light and Motion
Daniel Emerson
711 Neeson Rd
Marina, CA 93933
United States

Phone (831) 207-4699

Fax

Salesperson	P.O. Number	Deposit Required	Terms
Administrator		\$26,606.45	

Line	Qty	Description	Unit Price	Ext. Price
1		Server Machine, Replication, and Router Upgrade		
2	1	Enterprise Datacenter Server - 24 Drive Bays - Dual 10-Core Intel Xeon E5-2660V2 Processors with HyperThreading (20 Physical Cores - 40 Logical Cores) - 128GB ECC Registered RAM - 10GbE Network Card - 1GB RAID Controller with SSD Caching (2 x 128GB SSD) - 6 x Seagate 10K RPM, 6 x 600GB in RAID 10 with 1.8TB Usable Storage. All Components Carry Full 5 Year Warranty	\$10,669.00	\$10,669.00
3		(2) Intel Xeon E5-2660 v2 Deca-core (10 Core) 2.20 GHz Processor - Socket FCLGA2011Retail Pack - 2.50 MB - 25 MB Cache - 8 GT/s QPI - Yes - 3 GHz Overclocking Speed - 22 nm - 95 W - 167°F (75°C)		
4		(8) Kingston 16GB DDR3 SDRAM Memory Module - 16 GB - DDR3 SDRAM - 1600 MHz DDR3-1600/PC3-12800 - 1.50 V - ECC - Registered - 240-pin - DIMM		
5		Intel RAID Controller RS25AB080 - Serial ATA/600 - PCI Express 2.0 x8 - Plug-in Card - RAID Supported - 0, 1, 5, 6, 10, 50, 60 RAID Level - 2 SAS Port(s)		
6		(2) SanDisk X210 128 GB 2.5" Internal Solid State Drive - SATA		
7		(6) Seagate Savvio 10K.6 ST600MM0026 600 GB 2.5" Internal Hard Drive - SAS - 10000 rpm - 64 MB Buffer		
8		Enterprise Cisco UTM Firewall/Router and Additional Switch		
9	1	Cisco ASA 5512-X Firewall Edition - 6 Port - Gigabit Ethernet	\$2,650.00	\$2,650.00
10	1	Cisco SG200-50 Gigabit Smart Switch - 50 Ports - Manageable - 48 x RJ-45 - 2 x Expansion Slots - 10/100/1000Base-T	\$645.00	\$645.00
11		Upgrades to Dell PowerEdge for Replication		
12	1	Intel Ethernet Converged Network Adapter X540-T1 - PCI Express x8 - 1 Port(s) - 1 x Network (RJ-45) - Twisted Pair - Full-height, Low-profile - Retail	\$425.00	\$425.00

PRICES SUBJECT TO CHANGE - PRICES BASED UPON TOTAL PURCHASE - ALL DELIVERY, TRAINING OR CONSULTING SERVICES TO BE BILLED AT PUBLISHED RATES FOR EACH ACTIVITY INVOLVED - GENERALLY ALL HARDWARE COMPUTER COMPONENTS PROPOSED ABOVE ARE COVERED BY A LIMITED ONE YEAR WARRANTY, COVERING PARTS AND LABOUR FOR HARDWARE ONLY AND ON A DEPOT BASIS - WE SPECIFICALLY DISCLAIMS ANY AND ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OR WITH REGARD TO ANY LICENSED PRODUCTS. WE SHALL NOT BE LIABLE FOR ANY LOSS OF PROFITS, BUSINESS, GOODWILL, DATA, INTERRUPTION OF BUSINESS,

Line	Qty	Description	Unit Price	Ext. Price
13	4	Seagate Constellation ES.3 ST2000NM0023 2 TB 3.5" Internal Hard Drive - SAS - 7200 rpm - 128 MB Buffer - in RAID 10, 4 TB Usable	\$219.00	\$876.00
14		SubTotal		\$15,265.00
15				
16		Software / Operating System Licensing		
17	1	Microsoft Windows Server 2012 R.2.0 Datacenter - License - 2 Processor - Volume - MOLP: Open Business - PC - Single Language	\$6,156.00	\$6,156.00
18	50	Microsoft Windows 2012 Server - License - 1 User CAL - Volume - MOLP: Open Business - PC - Single Language	\$34.00	\$1,700.00
19	5	Microsoft Windows Remote Desktop Services 2012 - License - 1 User CAL - Volume - MOLP: Open Business - PC - Single Language	\$117.00	\$585.00
20		SubTotal		\$8,441.00
21				
22		Labor and Installation		
23	1	Build and Installation of Server, migrating Virtual Machines to new machine, Installing Remote Desktop Server, Installation of new Router, Setup of Remote Desktop Users	\$2,500.00	\$2,500.00

SubTotal	\$26,206.00
Tax	\$1,650.45
Total	\$27,856.45

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