Jefferson Lab

Conference IT Systems

JACoW Team Meeting 2015   Padova, Italy

Anthony Cuffe

Overview

- ⊙ Credits

- ⊙ Motivation

- ⊙ Networking

- ⊙ Hardware/Computers

- ⊙ Software

- ⊙ Other Things to Consider

- ⊙ Q & A

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Special Thanks

Previous Presentations

Vincent Mitts, LSU

Raphael Mueller, GSI

Stefano Deiuri, Elettra

JACoW Developers

Motivation *Why Should IT Be Near Perfect?*

⊙ **IT** is the foundation of the conference. Getting it right makes the entire conference run smoother.

⊙ The quicker editors can start working and work efficiently, the more free time they will have and the better job they will do.

⊙ **IT** is a major component of the budget.

⊙ Seamless **IT** (Wi-Fi, A/V, …) drives much of the perception about the success of a conference.

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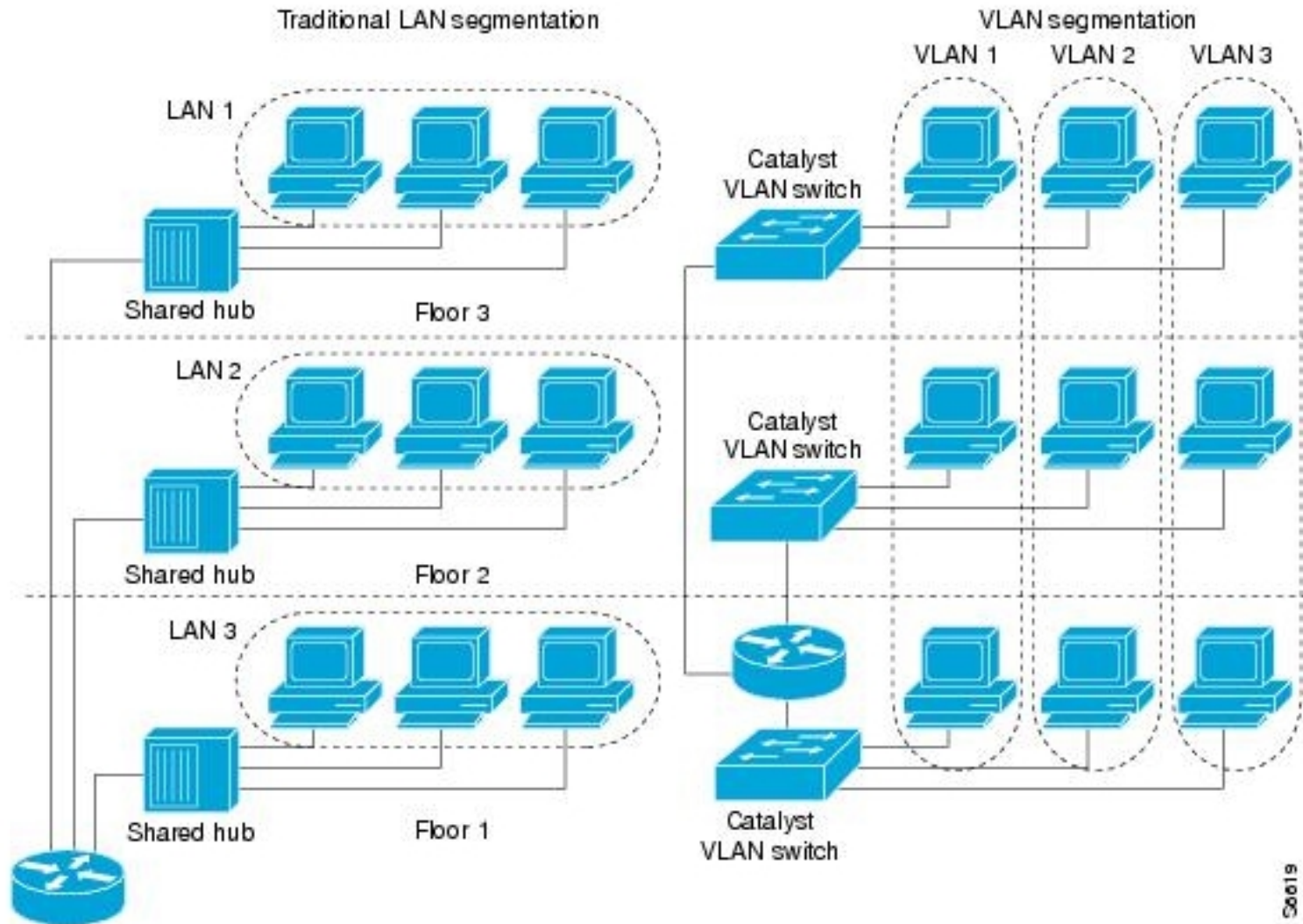*Networking*

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Network Considerations

- ⊙ Bandwidth Considerations:
  - o Network infrastructure at a conference site **MUST** comfortably allow for the required bandwidth.

- ⊙ Things to Consider:
  - o **Local Area Network (LAN)** - from computer to switch
    - Minimum - Fast Ethernet (100 Mbs)
    - Recommended – Gigabit Ethernet (1000 Mbs)
  - o **Network Backbone** - from switch to switch switch to router, and router to switch
    - Small conferences - Minimum Fast Ethernet (100 Mbs)
    - Large conferences - 1 Gbs Ethernet (1000 Mbs)
  - o **Internet Connection Bandwidth** – from the router to Internet Service Provider (ISP)
    - Minimum – *10-20 Mbs*
    - Recommended – *40+ Mbs* (Faster the better! ☺)
    - Bandwidth Segmentation between Delegates and Staff

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Network Segmentation - LAN vs VLAN

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Network Segmentation - VLANs

- ◎ Switched VLANS *(Virtual Local Area Networks)*
  - ○ Requires professional networking personnel and support.
  - ○ Gives you the ability to segment your network *virtually* instead in hardware.
  - ○ Advantages to a VLAN network:
    - Performance: improves performance by not slowing down other users sharing the network.
    - Security: VLANs improve security by isolating systems into separate networks. Traffic (and security) between networks can then be controlled via Firewalls and ACLs at the network level.
    - Management: Adds, moves, and changes are achieved by configuring a port into the appropriate VLAN and not via hardware changes.

- ◎ Example: Network Layout for IPAC12'
  - ○ **VLAN1** – Proceedings Office, Author Reception, Business Office
  - ○ **VLAN2** – Speaker Prep and Auditorium(s)
  - ○ **VLAN3** – Internet Café and Wireless

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VLAN Example: iPac'12
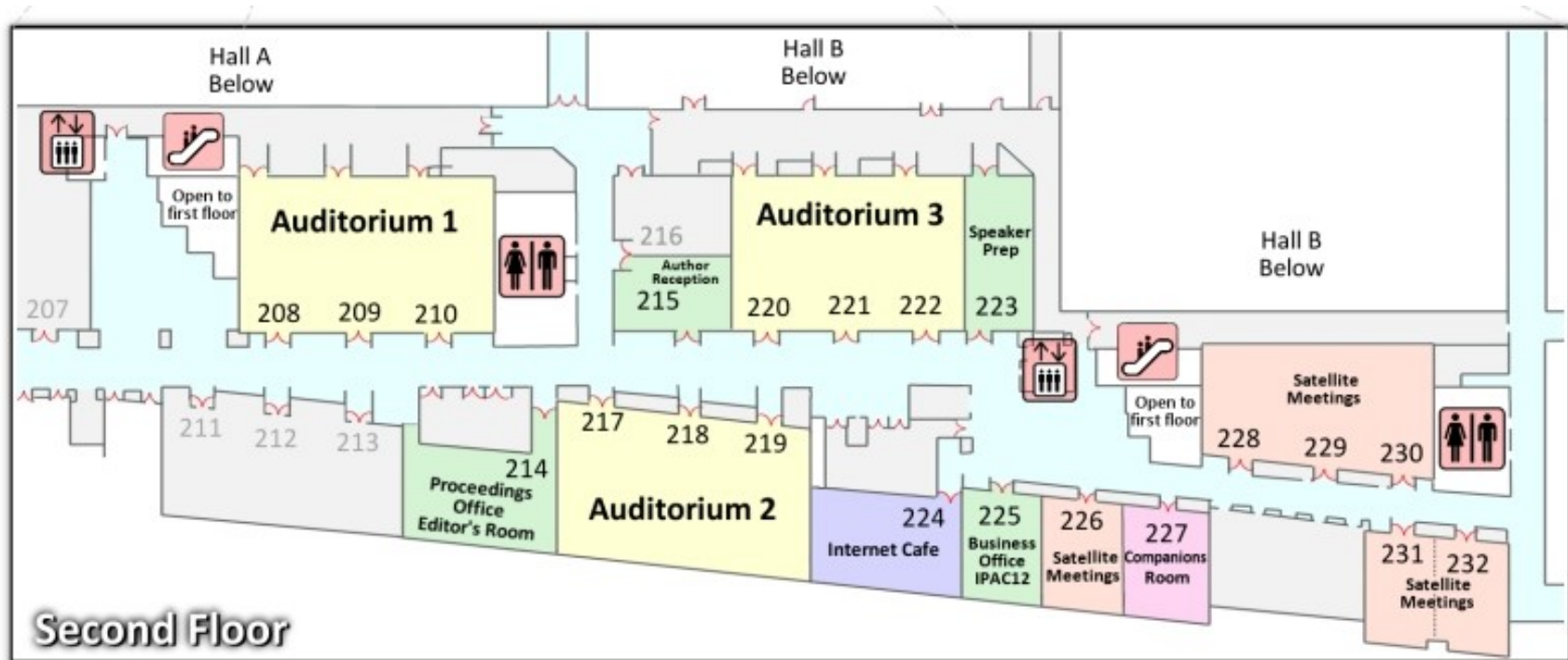
o **VLAN1** – Proceedings Office, Author Reception, Business Office

o **VLAN2** – Auditoriums 1,2, 3, and Speaker Prep room

o **VLAN3** – Internet Café

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Network Segmentation - LANs

- ⊙ Unmanaged Switched Networks:
  - o Simple, flat LAN network where all systems share the same network.
  - o Security must be handled at the system level.
    - Microsoft's Workgroups add a layer of separation and provide password protection on your network shares.
    - Microsoft's firewall should be turned on and configured properly on all computers
    - Ensure Anti-virus software is installed
    - Make sure public wireless network is separated from the rest of the network!

- ⊙ Example: Network Layout IPAC'15
  - o Two Isolated/Dedicated Networks
  - o Staff Network Segment (40Mbs) – All Staff Offices
  - o Delegate Segment (150Mbs) – Wireless and Internet Café

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Network Connections

◉ Ensure there are enough Ethernet Ports in each room for: *Computers, Printers and Switches.*

◉ The *Proceedings Office* requires additional ports to accommodate the use of personal laptops.

◉ Wired connections for laptops are preferred for greater reliability and performance.

◉ Test all cable connections after everything is setup.
  - By one estimate, nearly 70 percent of all network-related problems can be traced to either:
    - *poor cabling techniques or*
    - *problems with the cabling components*

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Example: Network Overview: IPac'12

Convention Center Internet/Network/Wireless

Name	Rm.	Drops	Hubs	Wireless
Plenary Sessions	Hall B	1	1 – 8 port	
Auditorium 1	209	1	1 – 8 port	
Auditorium 2	218	1	1 – 8 port	
Auditorium 3	221	1	1 – 8 port	
Proceedings Office	214	1	2 – 16 port	25 users
Author Prep. Rm.	215	1	1 – 8 port	
Speaker Prep Rm.	223	1	1 – 16 port	
Internet Cafe	224	1	2 – 16 port	25 users
IPAC12 Office	225	1	1 – 16 port	
Hall C	Hall C			500 users
Sum Total				

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Example: Network Overview: IPac'15

Name	Room	Drops	Switches	Wireless
Proceedings Office	E11c	7	(6) 8-port	25 Users
Speaker Preparation	E10d	2	(2) 8-port	5-10 Users
Author's Reception	E11a	1	(1) 8-port	5-10 Users
Internet Café	E10c	2	(2) 8-port	25 Users
Registration	Lobby	1		750+ Users
Business Office	E10a	3	(2) 8-port	
Parallel Sessions	B21a	1	(1) 8-port	None
Parallel Sessions	B21b	1	(1) 8-port	None
Parallel Sessions	B21c	1	(1) 8-port	None
Industrial Exhibition	Exhibition Hall			2500-3000 Devices

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Options for IP Addressing
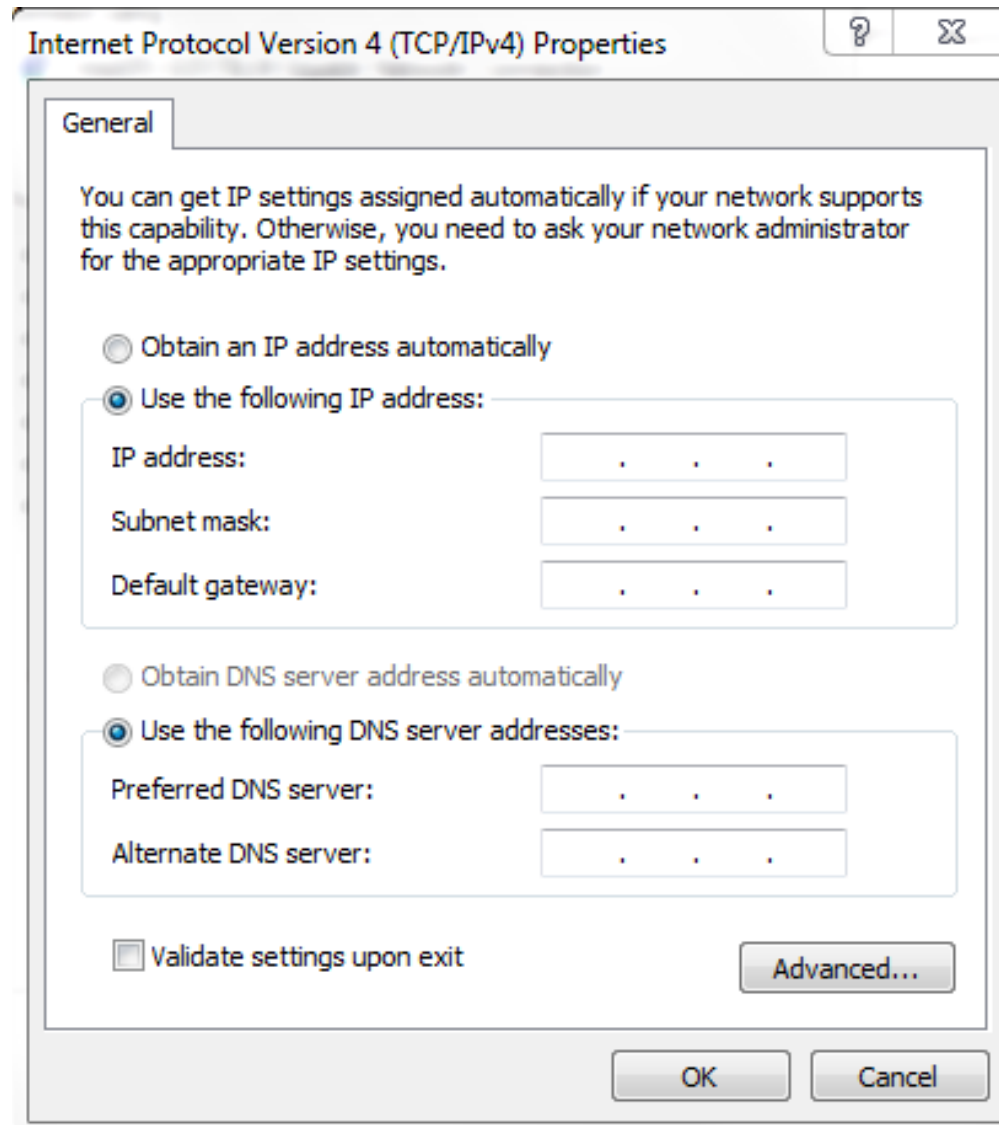
⊙ **Static IP Setup:** *(preferred)*

- o Manual Configuration of:
  - ▪ IP address
  - ▪ Subnet mask
  - ▪ Default gateway
  - ▪ DNS Servers

- o *Simple and robust solution.*
- o *Host to IP mapping well know and does not change.*

- o *Configuration is a bit time consuming.*

⊙ **Dynamic Setup (DHCP):**

- o Automatic Configuration of:
  - ▪ IP address
  - ▪ Subnet mask
  - ▪ Default gateway
  - ▪ DNS Servers

- o *Fast and easy setup*
- o *Host to IP mapping not always well know and can change.*

- o *Static DHCP can be used to ensure Host to IP mapping is consistent but this requires a great deal of up front work.*

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Network IP Assignment

Internet Protocol Version 4 (TCP/IPv4) Properties

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

○ Obtain an IP address automatically
● Use the following IP address:

IP address: .   .   .
Subnet mask: .   .   .
Default gateway: .   .   .

○ Obtain DNS server address automatically
● Use the following DNS server addresses:

Preferred DNS server: .   .   .
Alternate DNS server: .   .   .

☐ Validate settings upon exit   Advanced...

OK   Cancel

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Wireless Standards

IEE 802.11 b, a, g, n *(example combinations b,g,n a,n b,g)*

o **Pros of 802.11b** - lowest cost; signal range is good and not easily obstructed
  Cons of 802.11b - slowest maximum speed; home appliances may interfere on the unregulated frequency band

o **Pros of 802.11a** - fast maximum speed; regulated frequencies prevent signal interference from other devices

o **Cons of 802.11a** - highest cost; shorter range signal that is more easily   obstructed

o **Pros of 802.11g** - fast maximum speed; signal range is good and not easily obstructed
  Cons of 802.11g - costs more than 802.11b; appliances may interfere on the unregulated signal frequency

o **Pros of 802.11n** - fastest maximum speed and best signal range; more resistant to signal interference from outside sources
  Cons of 802.11n - costs more than 802.11g; the use of multiple signals may greatly interfere with nearby 802.11b/g based networks.

802.11 ac   (new emerging standard)

o Is an evolution of 802.11n. Goal is to deliver higher levels of performance that are commensurate with Gigabit Ethernet networking.

o 5 GHz-only technology

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Wireless Considerations

⊙ A conference venue's wireless capability and it's limitations needs to be clearly understood.

- o Know what level of service they can and cannot offer.
- o Reasonable expectations should be clearly communicated and agreed upon with the facility conference manager.
- o Any guarantees should be in writing.
- o Investigate their hardware and don't always believe their claims about capabilities.
- o Remember that most participants will have more than one device.

⊙ **Weaknesses should be addressed in advance!**

- o Possibilities Remedies:
  - Adding more access points
  - Use High Density Access Arrays
  - Using portable access points
  - Consider third party vendor wireless setup

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Wireless Recommendations

- **Demand Enterprise Grade Hardware!**

- **High Density Xirrus (XR-2436) Arrays**
  - Access Arrays for high volume areas
    - *Exhibition Hall*
    - *Break Area Outside of Sessions*
    - *Registration Area/Poster Sessions*
  - Each Array capable of hosting 750-1500 simultaneous devices(we assume ~750).
  - Mobile for easy coverage tuning

- **Cisco Aironet Access Points**
  - Wireless Access Points used throughout the venue for low volume areas (30+)
  - Each AP capable of supporting 30-40 simultaneous devices
  - Portable access points can be used for quick coverage fixes

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Wireless Example: IPAC'14

⦿ **High Volume Areas: Exhibitor and Poster Areas**

⦿ **Wireless for 1200-1300 Users**

- o 32 Wireless Access Points for entire venue
- o 19 dedicated for the poster sessions and the industrial exhibition level
- o Portable access points for quick coverage fixes
- o Peak load saw 650+ devices

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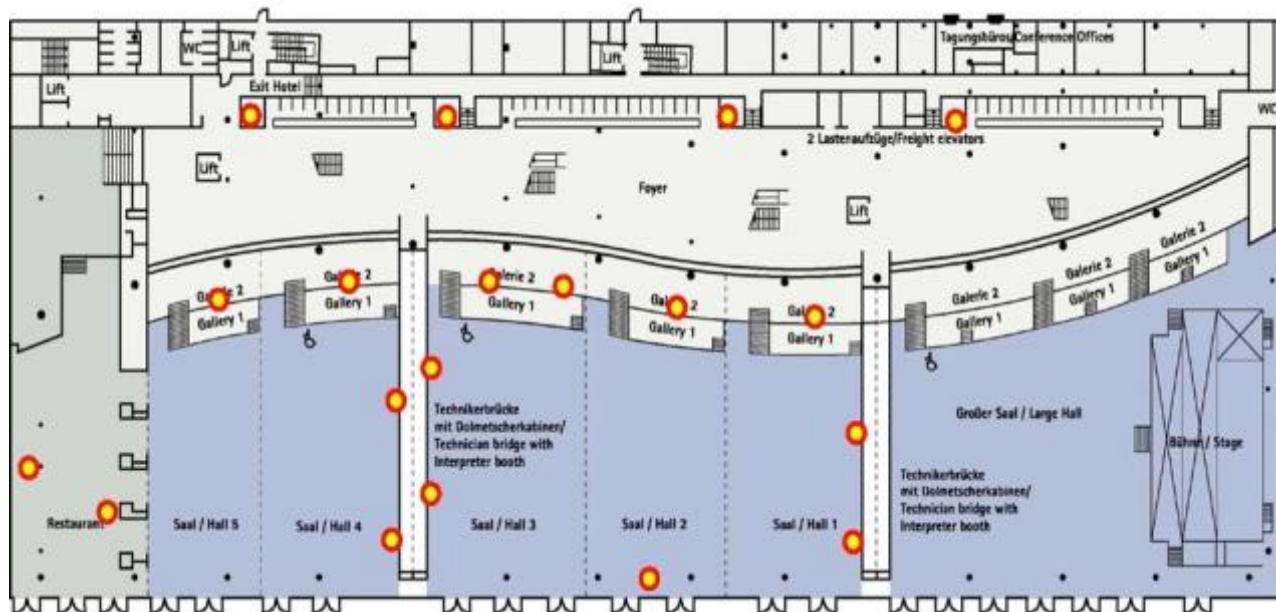
Wireless Example: IPAC'14

Exhibitor and Poster Areas

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Wireless Example: IPAC'15

- ⊙ Sized for 2500 and 3000 Devices and 1500-2000 Delegates

- ⊙ High Density Xirrus (XR-2436) Arrays
  - o Access Arrays for high volume areas (3)
    - *Exhibition Hall*
    - *Break Area Outside of Sessions*
    - *Registration Area/Poster Sessions*
  - o Each Array capable of hosting 750-1500 simultaneous devices(we assumed ~750).
  - o Mobile for easy coverage tuning

- ⊙ Cisco Aironet Access Points
  - o Wireless Access Points used throughout the venue for low volume areas (30+)
  - o Each AP capable of supporting 30-40 simultaneous devices
  - o Portable access points for quick coverage fixes

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Wireless Example: IPAC'15

Exhibition and Registration

Xirrus WAA (XR-2436)　　**Cisco WAP (Aironet)**

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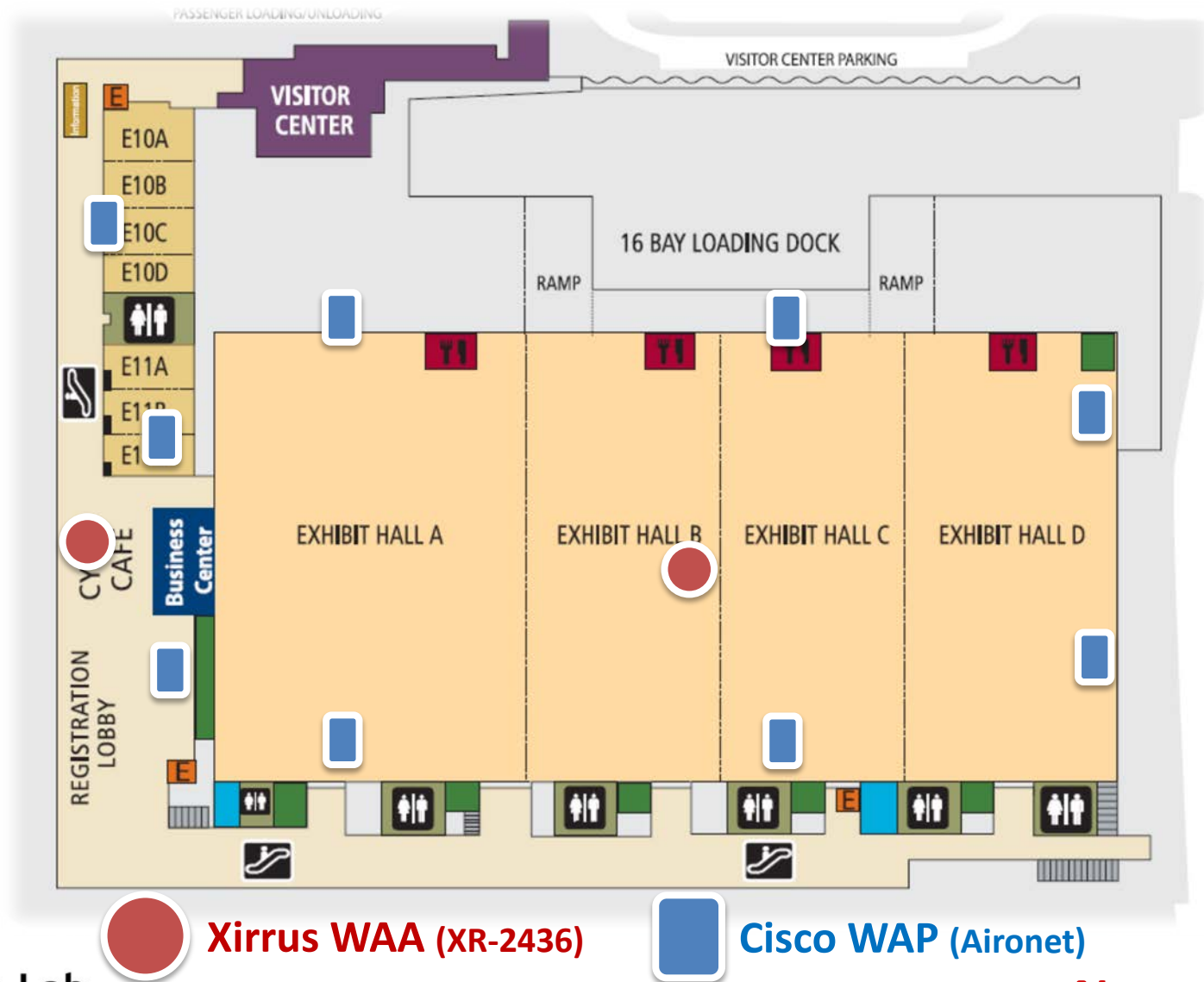
Wireless Example: IPAC'15

Exhibitors and Posters

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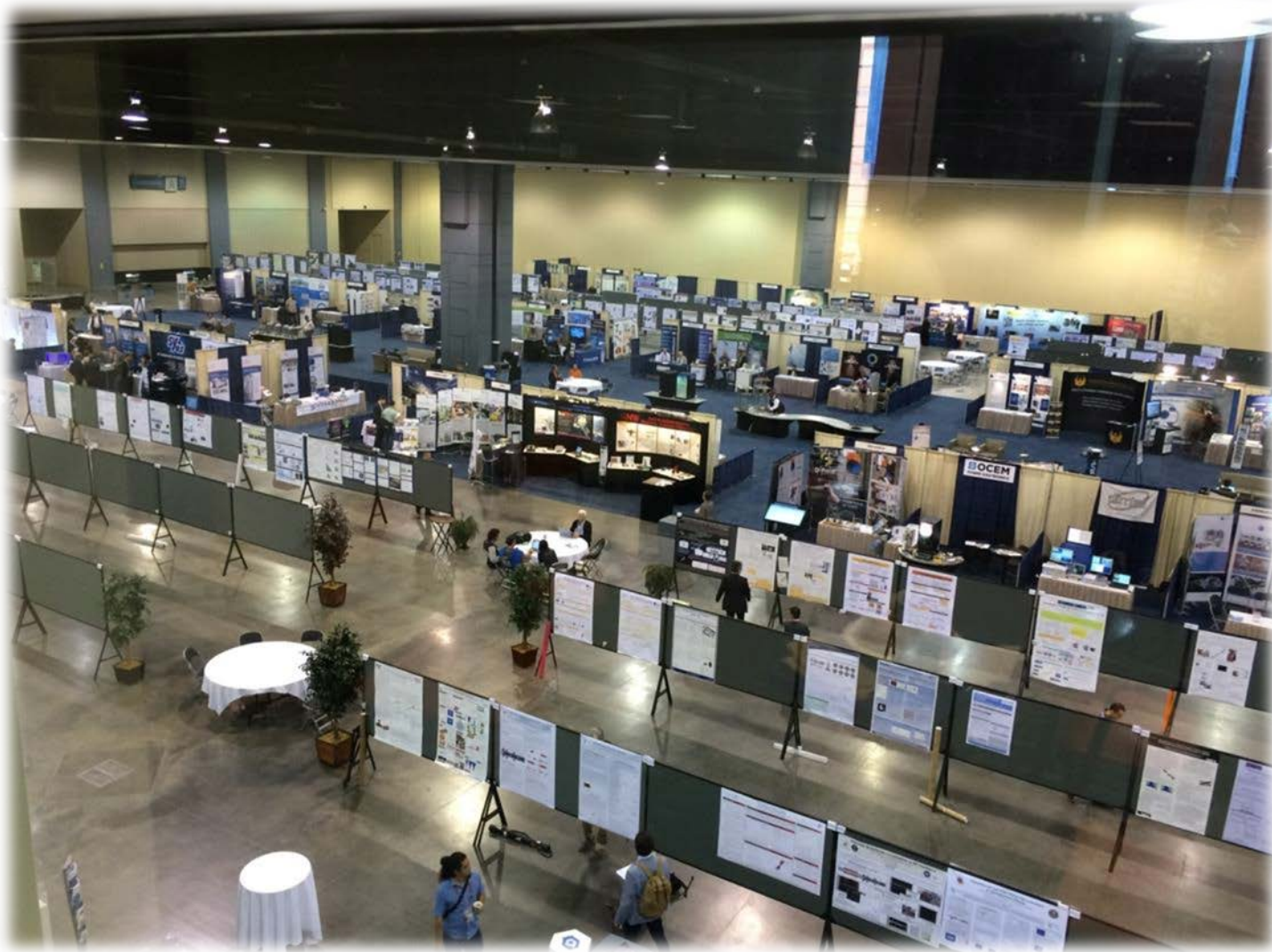
Hardware

Typical Hardware *(Conference Size Dependent)*

- ◉ Proceedings Office
    - o 10 - 20 Computers
    - o 1 - 2 Printers

- ◉ Author Reception
    - o 2 - 5 Computers

- ◉ Internet Café
    - o 10 - 20 Computers
    - o Laptop Spaces

- ◉ Business Office
    - o 2 - 5 computers
    - o 1 Multi-Function Printer

- ◉ Registration
    - o 1 - 2 Laptops

- ◉ Presentation Management**
    - o PC and Mac Support
    - o 2 - 4 Windows and 1 Mac Laptop

- ◉ Auditorium(s)**
    - o 1 PC and Mac support for each auditorium
    - o 1 Spare for each on-hand
    - o 1 Timer for each auditorium

- ◉ Satellite Meetings
    - o Laptop and Projector as needed

- ◉ Dot Boards
    - ◉ Laptop and Large Screen
    - ◉ 1 - 3 Typical

*** Ensure laptops and presentation software used in the Auditorium(s) are identical to those being used in the Speaker Prep room.*

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Example: Summary for IPAC'10

Number of Computers and Printers

	Windows PC		Macintosh	Printer
	Desktop	Laptop	MacBook	
Proceeding Office	23		3	2
Author Reception	5			
Speaker Presentation Office		3	2	
Auditoria		2	2	
Internet Cafe		20		
Paper Cafe	15			1
IPAC'10 Office	3	2		1
Others		4		1
Total	**46**	**31**	**7**	**5**

- 84 computers & 5 printers in total

WECB01, JACoW Team Meeting / November 2010, BNL

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Hardware

Example: Summary for IPAC'12

Number of Computers, Monitors, Printers and their Locations:

Locations	Rm. #	Mac laptops	PC laptops	Desktops	Monitors	Printers	Scanner	Computers subtotal
Plenary Sessions	Hall B	1	1					2
Auditorium 1	209	1	1					2
Auditorium 2	218	1	1					2
Auditorium 3	221	1	1					2
Proceedings Office	214			25	25	2		25
Author Prep Rm.	215		1	4	4			5
Speaker Prep Rm.	223	2	3					5
Internet Café	224			20	20			20
IPAC12 Office	225		2	5	5	1	1	7
ePoster laptops	Hall C		15					15
Spare laptops	Satellite meetings		4					4
Confidence monitors	Hall B, 209, 218, 221				4			
Total Number		6	29	54	58	3	1	89

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Hardware

Example: Summary for IPAC'14

⊙ **PC Workstations (42)**

⊙ **iMac Workstation (2)**

⊙ **24" Monitors** (1920x1080) **(42)**

⊙ **Windows Laptops (6)**

⊙ **MacBook Laptops (5)**

⊙ **Network Switches (10)**

⊙ **Printers (4)**

  ○ HP LaserJet 500 color M551 (3)
  ○ HP Multi-Function (1) – *Not used*

⊙ **Backup Server (1)**

  ○ Editor's Workstation with 500GB drive and 16 GB RAM

⌘ **Spares**

  ○ 24" Monitors (4)
  ○ Editor's Workstation (6)
  ○ Internet Workstation (2)
  ○ Windows Laptop (2)
  ○ Mac Laptop (1)
  ○ Toner Cartridges for Printer

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Hardware

Example: Summary for IPAC'15

- ⊙ **PC Workstations (~40)**
- ⊙ **Mac Mini Workstations (2)**
- ⊙ **Backup/CIFs Server (1)**
  - ○ Editor's Workstation with extra drive (500GB)
- ⊙ **24" (1920x1200) Monitors (42)**
- ⊙ **Presenter Laptops (6)**
- ⊙ **General Purpose Laptops (10)**
  - ○ Timers, Dotting Boards and Loaners
- ⊙ **MacBook Laptops (6)**
- ⊙ **8-Port Network Switches (16)**

- ⊙ **Printers (5)**
  - ○ HP LaserJet Color CP425DN (2)
  - ○ Brother Color Multi-Function 9840N (3)

- ⊙ **Dot Boards (3)**
  - ○ 40" Sony Bravia
  - ○ ThinkPad Laptop

- ⌘ **Spares**
  - ○ 24" Monitors (2 – *Not Enough!*)
  - ○ Editor's Workstation (2)
  - ○ Presenter Laptops (1)
  - ○ Timer Laptops (1)
  - ○ Mac Laptops (1)
  - ○ Toner Cartridges for Printer

Hardware

Recommended Hardware

Since this is a moving target, JACoW maintains recommendation and documentation pages:

- o Proceedings Office: Recommended Computer Hardware

  http://www.jacow.org/index.php?n=Editors.RecommendedHardware

- o JACoW Information for Organizers

  http://www.jacow.org/index.php?n=Editors.HomePage

- o Previous IT Reports

  http://www.jacow.org/index.php?n=Editors.ITReportsPreviousExperiences

Currently Recommended PC

⊙ Recommended Windows PC

- o Intel® Core™ i7 (3100 MHz)
- o 8 GB memory
- o 128 GB SSD
- o High-end graphics card that supports video transcoding, 1 GB memory
  - NVIDIA hardware h.264 encoder built into Kepler GPUs
  - NVidia Geforce GTX 750
- o 27" PC monitor, 2560 x 1440 resolution, 16:9, *(real monitor, not a TV!)*
- o 1 Gb Ethernet Adaptor

⊙ Minimum Windows PC

- o Intel® Core™ i5 (2500 MHz)
- o 4 GB memory
- o 500 GB harddisk
- o Mid-range graphics card that supports 2D and 3D acceleration, 512 MB
  - o Readon 7500
  - o NVidia Geforce GTX 650, or better models
- o 22" PC monitor, 1920 x 1200 resolution, 16:10, *(real monitor, not a TV!)*
- o 100 MBit Ethernet

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Currently Recommended Mac

◉ Recommended - 27" iMac

- o Intel® Core™ i7 (3100 MHz)
- o 8 GB memory
- o 512GB SSD
- o NVIDIA GeForce GT 755M, 1 GB
- o 2560 x 1440 resolution
- o 1 Gb Ethernet Adaptor

◉ Minimum - 13.3" MacBook Pro

- o Intel® Core™ i5 (2500 MHz)
- o 4 GB memory
- o 500 GB harddisk
- o NVIDIA GeForce GT 650M, 512 MB
- o 1280 x 800 resolution (the resolution of this MacBook is so low that you should provide an extra monitor for it with a higher resolution)
- o 100 MBit Ethernet

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Hardware

Currently Recommended Laptops

◉ Recommended PC

- o Intel® Core™ i7 (2600 MHz)
- o 8 GB memory
- o 256GB SSD
- o High-end graphics card that supports video transcoding, 1 GB
- o 2560 x 1440 resolution (lower resolution may suffice)
- o 1 Gb Ethernet Adaptor

◉ Recommended Mac – MacBook Pro *(with retina display)*

- o Intel® Core™ i5 (2600 MHz)
- o 8 GB memory
- o 256 GB SSD
- o NVIDIA GeForce GT 650M, 1Gb
- o 2560 x 1600 resolution
- o 1 Gigabit Ethernet

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Hardware

Currently Recommended Printers

- ◉ Proceedings Office: 2 are recommended
  - ○ HP Color LaserJet **PostScript** Enterprise *(CP4525dn)*
    - *100+ sheet multipurpose – tray 1*
    - *500 sheet – tray 2*
    - *HP Jetdirect Gigabit Ethernet*
    - *Embedded print server memory 1GB (1024 MB)*

- ◉ Business Office: Light duty printer
  - ○ HP LaserJet *(P2050dn)*

- ◉ Spares – Be sure to have on hand!
  - ○ toner cartridges
  - ○ paper

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Hardware

Example Hardware – IPAC'14

⊙ Proceedings Office: Editor's Workstation

- ○ Fujitsu Esprimo P720, E90+, Intel Core i5
- ○ 8 GB RAMM
- ○ 256 GB SSD
- ○ 24" Fujitsu B24W-6 LED Display (1920x1200)

⊙ Speaker Preparation: Presenter's Laptop

- ○ Fujitsu Lifebook E753 Intel Core i5
- ○ 15,6" TFT, 8 GB RAMM (2560x1600)
- ○ 256 GB SSD

⊙ Printers: HP LaserJet M551

Example Hardware – IPAC'15

◉ Proceedings Office: Editor's Workstation

- ○ Dell Precision T1700, Intel Xeon Quad Core 3.5Ghz
- ○ 8 GB 1600Mhz RAM
- ○ 512MB NVIDIA Quadro® NVS 310
- ○ 256 GB Crucial MX200 SSD
- ○ 24" Dell Ultrasharp U2412M (1920x1200)

◉ Speaker Preparation: Presenter's Laptop

- ○ Dell M4800 Intel Quad Core i7 2.9Ghz
- ○ 16GB 1600Mhz RAM\
- ○ 15,6" TFT (1920x1080) Display
- ○ DP, VGA and HDMI Output

◉ Printers:

- ○ HP Color LaserJet CP4525DN
- ○ Brother Multi-Function 9840N

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Hardware

Computers – Renting vs. Buying

⊙ Renting: the pros

- o Cost savings - you can save over half the cost of purchasing outright
- o Renting can provide delivery to and pickup from the venue

⊙ Renting: the cons

- o Not all rental companies are equal
- o Check references from previous users
- o Make sure they carry reasonably current hardware
- o Make sure they have good reputation for responding quickly to customer needs.
- o Short configuration window.

⊙ Purchasing: the pros

- o Hardware can be procured early, giving more configuration time.
- o Hardware specs will likely be much better than rentals.
- o If your institution can use the systems after the conference, this may actually be the cheapest option.

⊙ Purchasing: the cons

- o Can be 2 to 3 times the cost of renting.
- o Ownership after the conference may not be clear cut.
- o Delivery, Storage and Retrieval need to be considered.

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Hardware

IPAC'15 Renting vs. Buying

Items	Rooms	Quantity	Purchase	Rental	Cost	Rental
Dell T1710	Editorial Office	22	1200	225	26400	4950
Dell T1710	Author's Reception	4	1200	225	4800	900
Dell T1710	Internet Café	10	1200	225	12000	2250
Dell T1710	Business /Staff Offices	4	1200	225	4800	900
Laptop(M4800)	Speaker Preparation	6	1800	300	7200	1800
Laptop(Mac)	Speaker Preparation	4	2500	285	10000	1140
Laptop(M4800)	Auditorium 1, 2,3	3	1800	300	5400	900
Laptop (Mac)	Auditorium 1, 2,3	3	2500	285	7500	855
Laptop (General)	Dot Boards/Times	10	1200	300	12000	3000
Dell 24" Monitor	ALL	44	240	95	10560	4180
Sony TV/Monitor	Dot Boards/Auditoriums	6	900	575	5400	3450
					106,060	*24,325*

Component	Total
Computers	44
Laptops	23
Monitors	44

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Planning and Preparation

⊙ **Time**

o Plan enough time for proper set up:

- *Time is needed for installation, configuration and testing.*
- *Even Cloning takes 15-20 minutes per system.*
- *Particular care should be taken with the auditorium computers that will be handling large audio/video presentations.*
- *Start as early as you can!*

⊙ **Power**

o Remember to estimate the power supply needs of each room.

- A 500W power supply can potentially pull ~4.61Amps (that's a max and probably not what its drawing).
- 4-5 systems per 15A circuit is generally safe.
- Printers can pull up to 850 W when printing (~7.7 Amps).
- Typical circuit are 15-20 Amps
- Bring extra power strips and extensions cords!!!

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Preparation: IPAC'12 (Rentals)

Systems delivered a week ahead of conference for configuration.

Hardware

Preparation: IPAC'15 (Purchased)

Systems purchased months ahead of conference.

Plenty of time for configuration.

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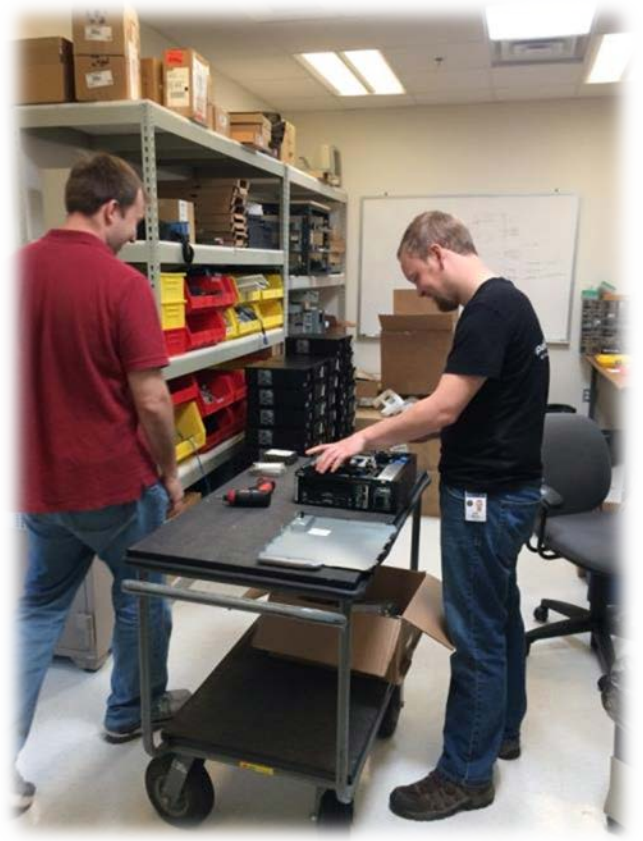
Proceeding Offices: IPAC'12
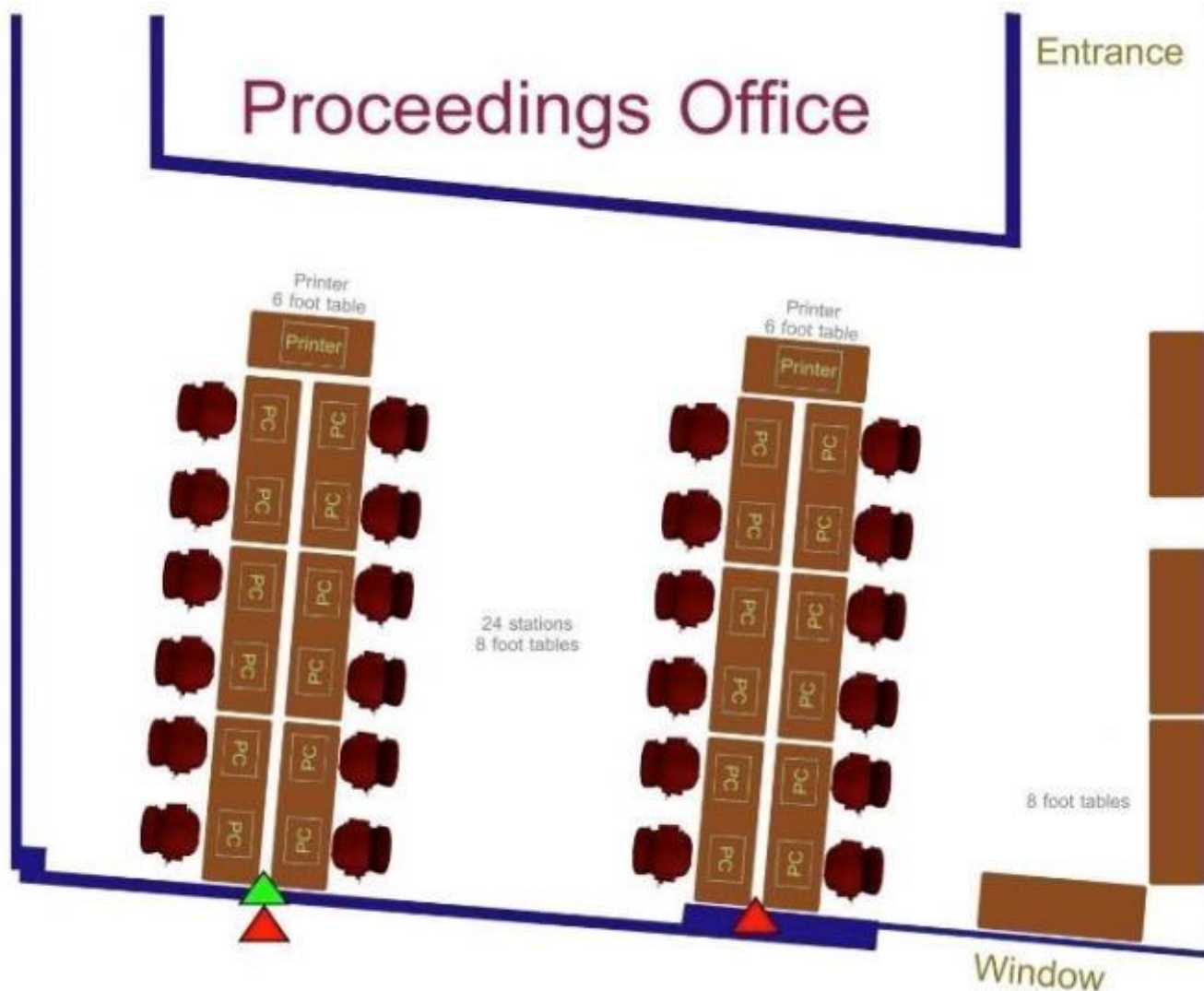
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Proceeding Office: IPAC'12

Hardware

Proceeding Office: IPAC'13

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Hardware

Proceeding Office: IPAC'13

Hardware

Proceeding Office: IPAC'14

Hardware

Proceeding Office: IPAC'14

Hardware

Proceeding Office: IPAC'15

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Proceeding Office: IPAC'15

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Hardware

Proceeding Office: IPAC'15

Hardware

Author's Reception: IPAC'12

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Hardware

Author's Reception: IPAC'12

Hardware

Author's Reception: IPAC'12

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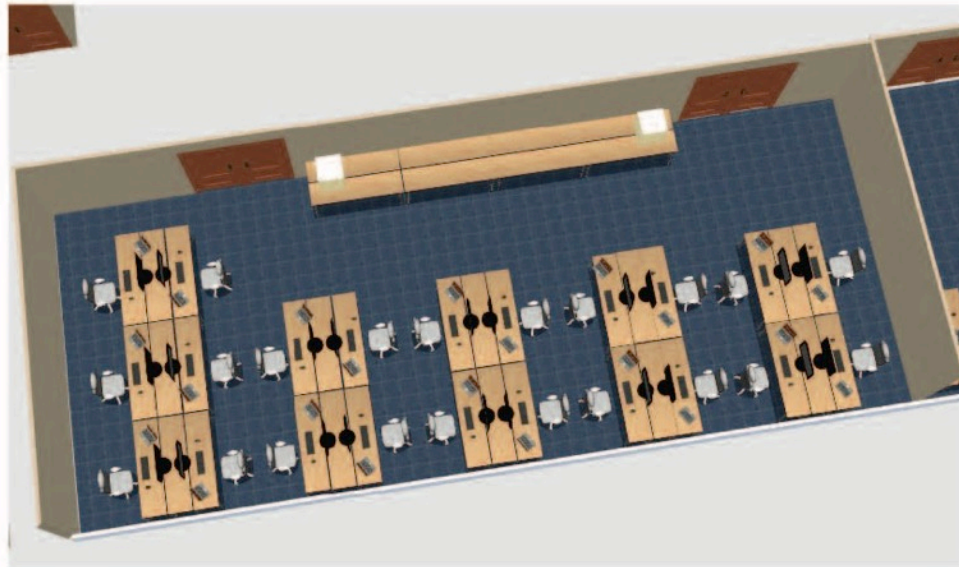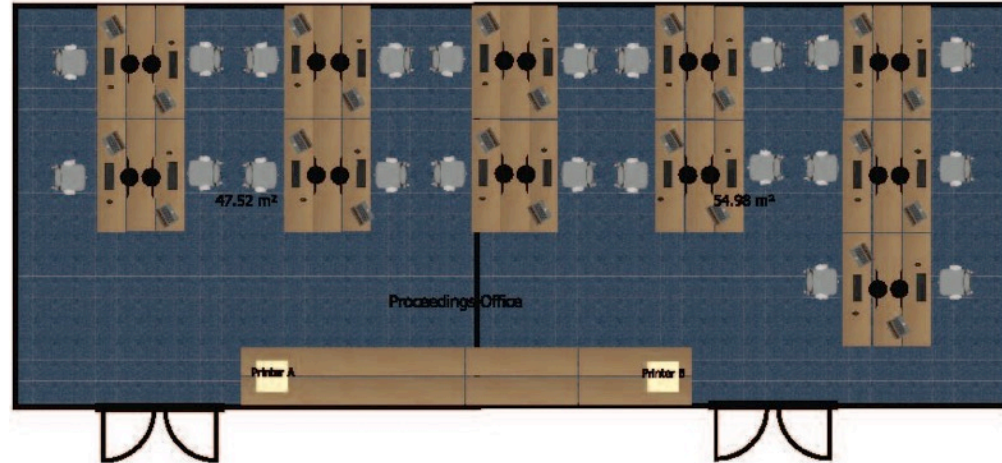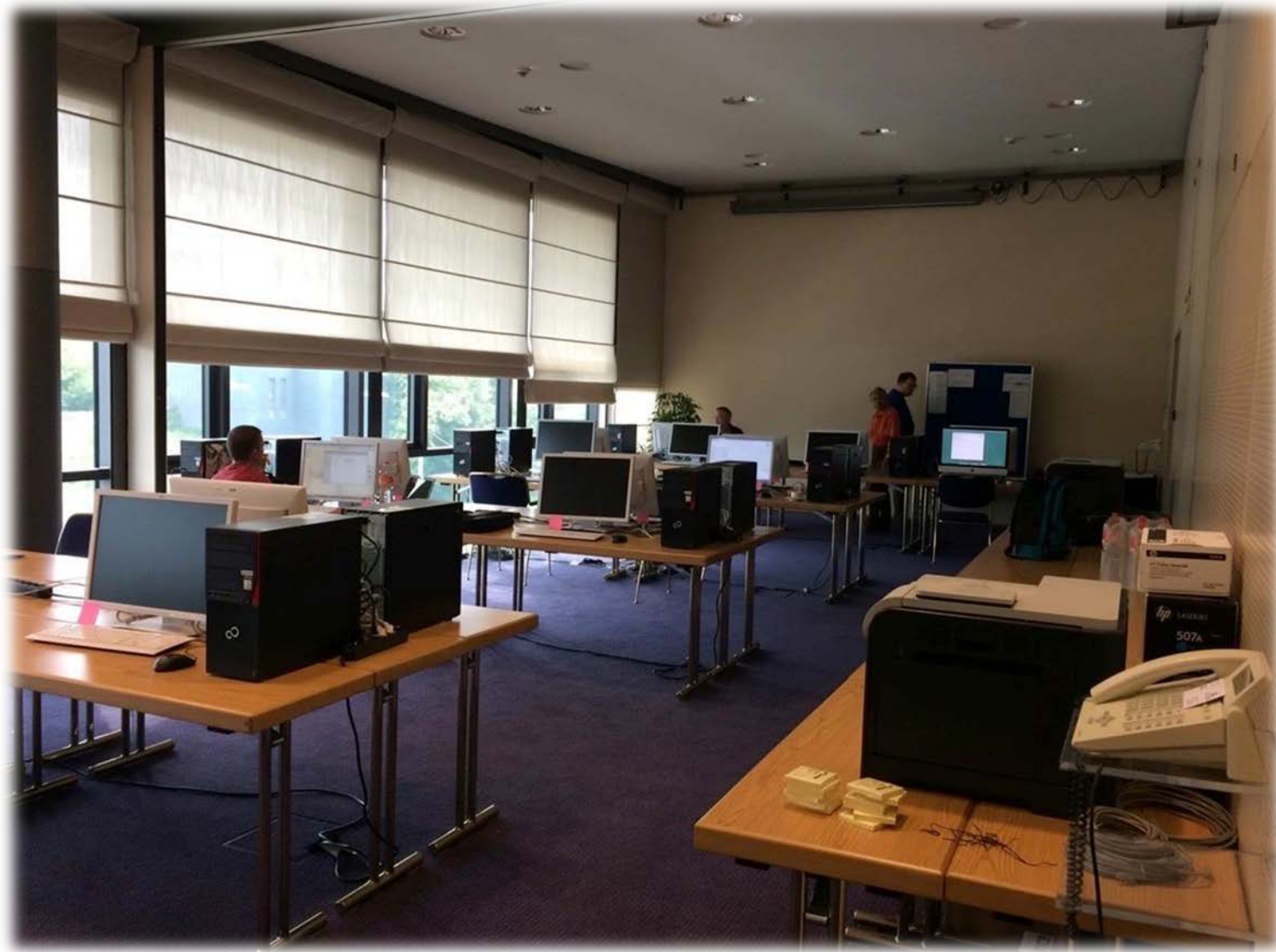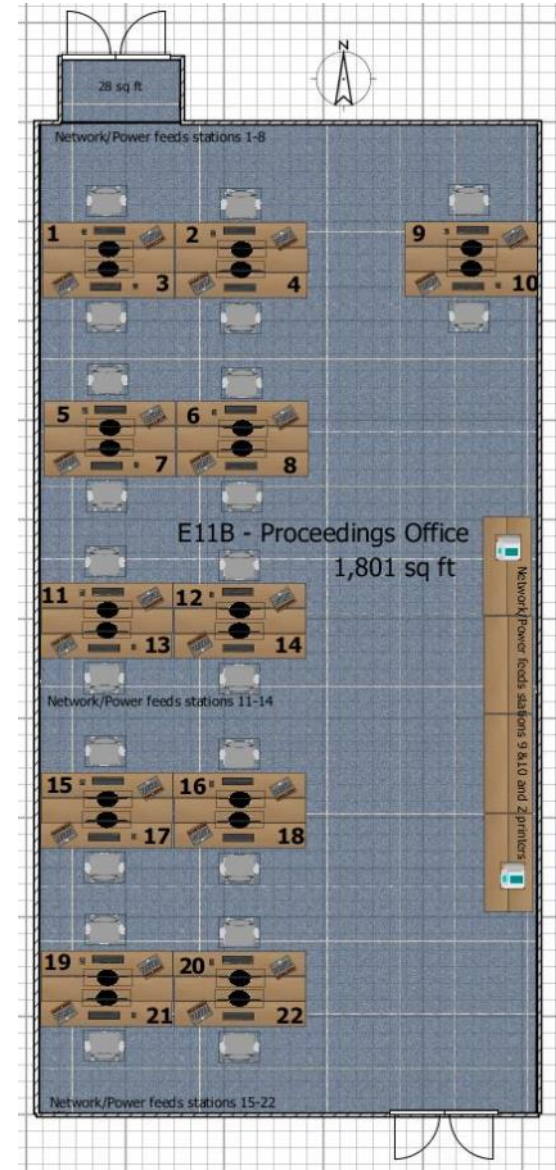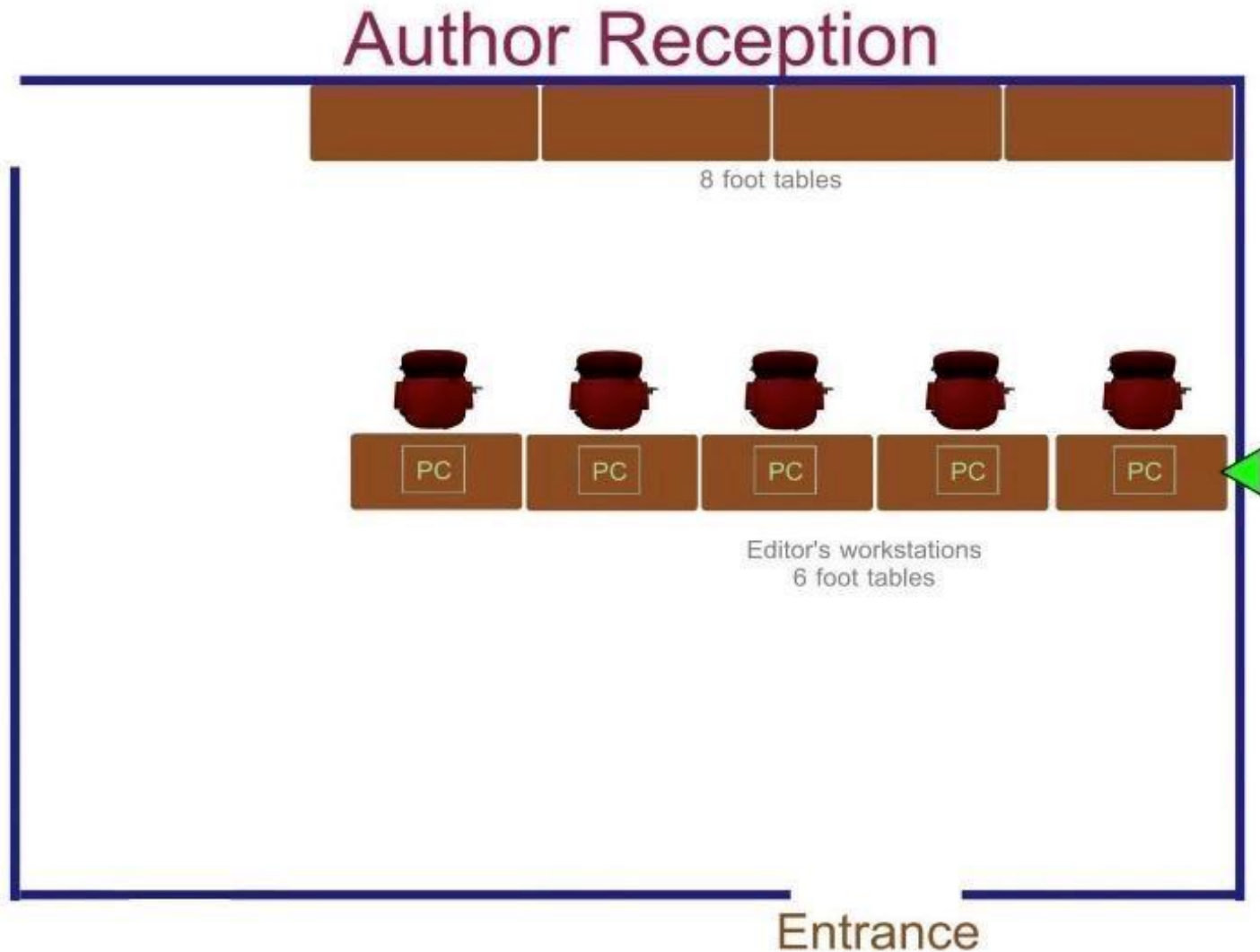
Author's Reception: IPAC'14

Author Reception
47.52 m²

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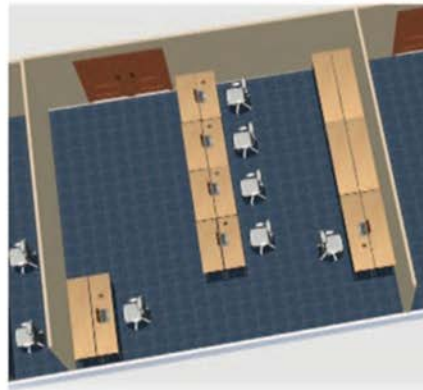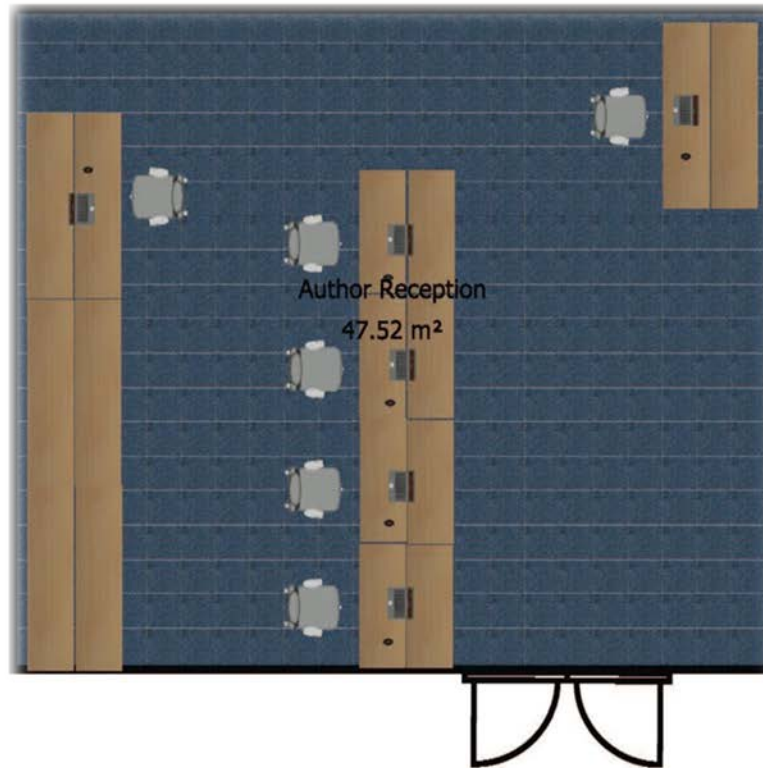
Author's Reception: IPAC'15

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Hardware

Author's Reception: IPAC'14

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Hardware

Speaker Preparation: IPAC'14

Speaker Preperation
47.52 m²

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Hardware

Speaker Preparation: IPAC'14

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Speaker Preparation: IPAC'15

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Hardware

Business Office: IPAC'12

Business Office (Rm225)

Business Office: IPAC'12

Hardware

Business Offices: IPAC'15

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Internet Cafe: IPAC'12

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Internet Cafe: IPAC'13

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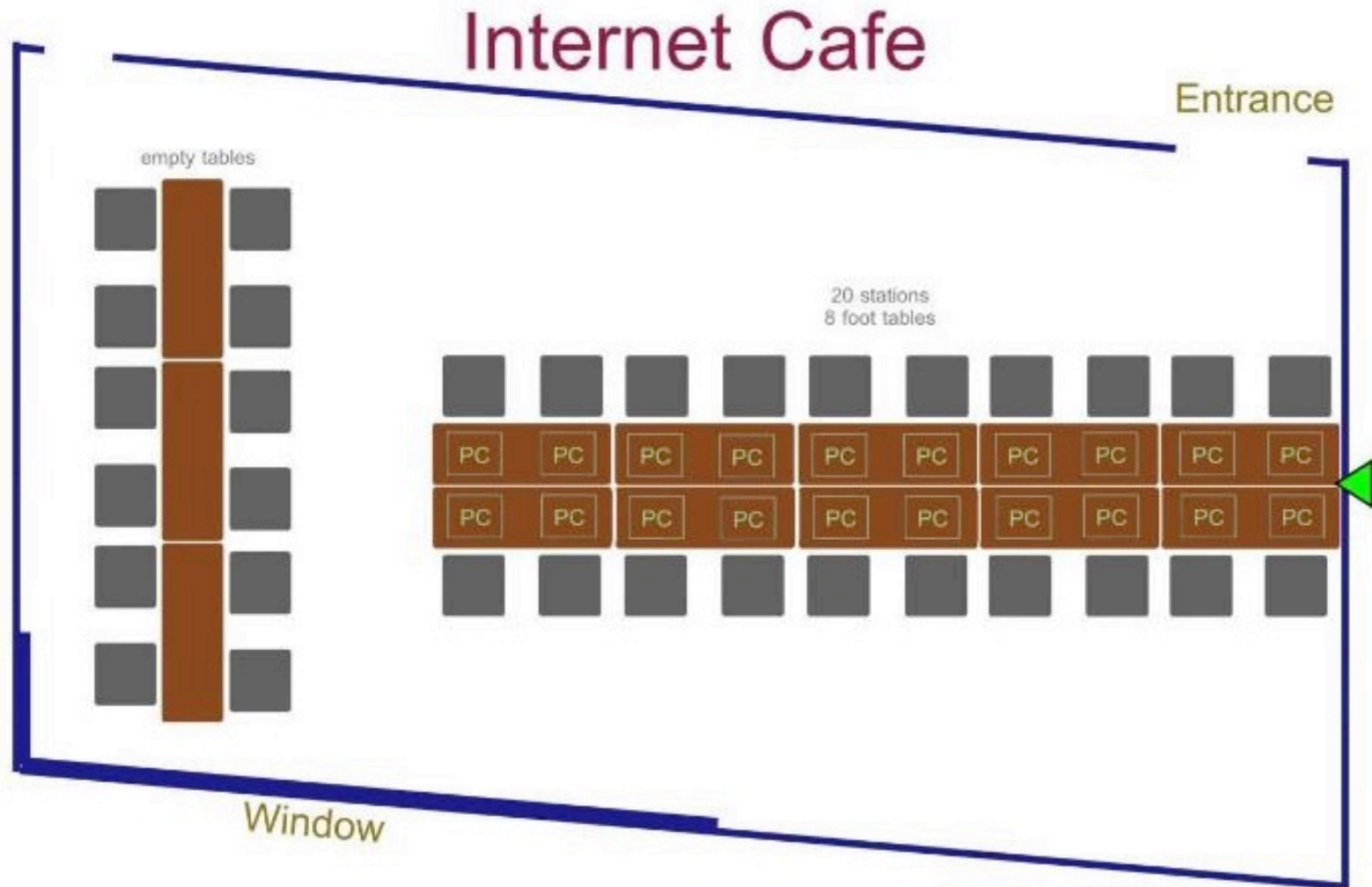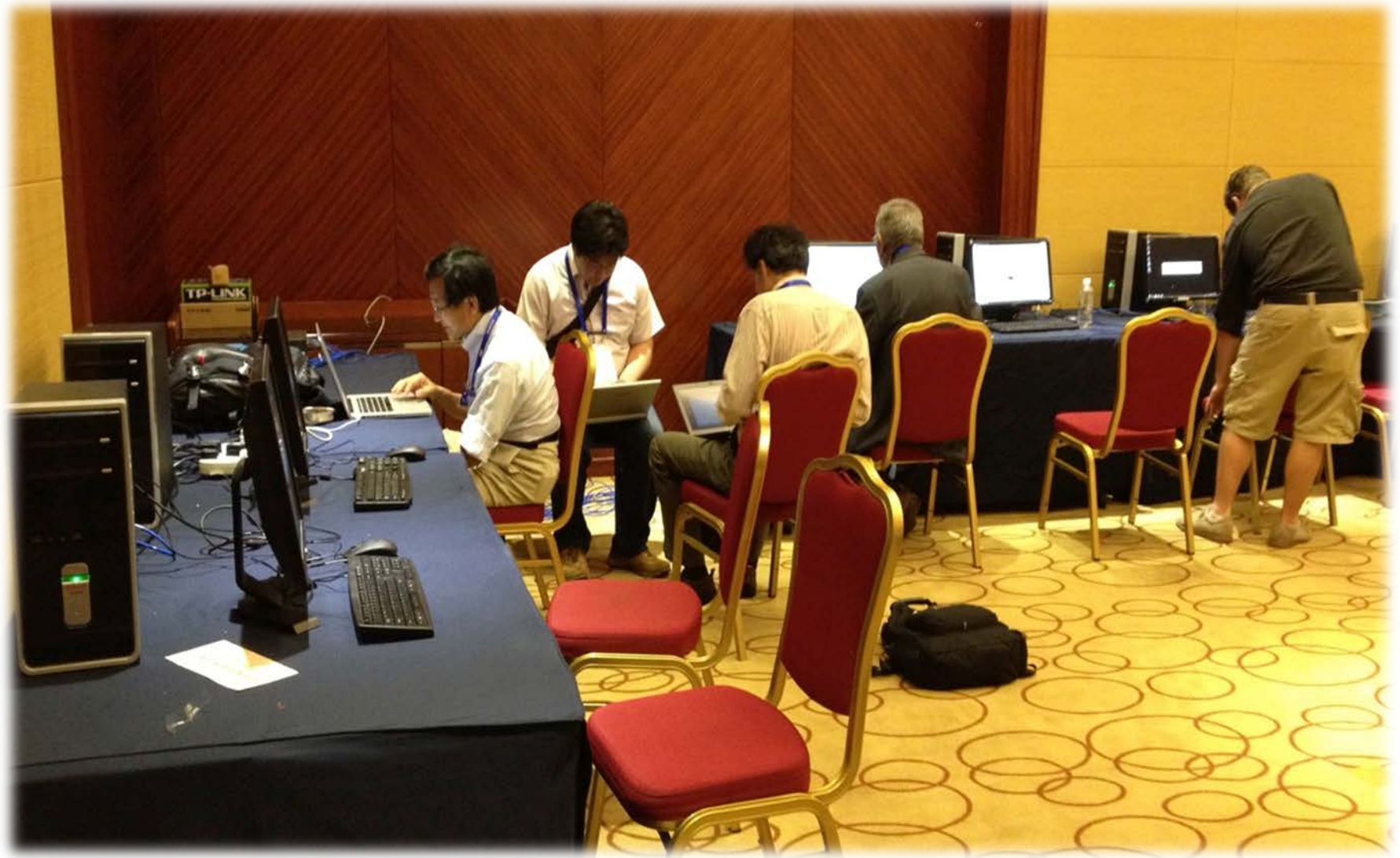
Internet Cafe: IPAC'15

Hardware

Software

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Software

Since this is also a moving target, JACoW maintains recommendation and documentation pages:

- o Recommended Software List

  http://www.jacow.org/index.php?n=Editors.RecommendedSoftware

- o Recommended Settings List

  http://www.jacow.org/index.php?n=Editors.SoftwareSettings

- o Automatic Software Bundle – Courtesy of Raphael

  http://www.jacow.org/index.php?n=Editors.HomePage
  Made Available by request to JACow Chair

- o JACoW Software Licenses
  - Adobe Acrobat Pro 9
  - Enfocus PitStop 11 - 30 day trial licenses

  http://www.jacow.org/index.php?n=Editors.JACoWSoftwareLicenses

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Recommended List for Windows

- Windows 7 64 bit *(patched!)*
- Microsoft Office 2010 *(patched!)*
- LibreOffice
- Internet Explorer
- Firefox
- Google Chrome
- Adobe Acrobat Professional 9 *(patched!)*
    - JACoW licenses
    - JACoW Acrobat configuration
    - JACoW Distiller - JobOptions properly installed
- Enfocus Pitstop Professional 11
    - JACoW licenses of 30-day trial
    - JACoW MediaBox ActionList
- Text Editors:
- Gvim for Windows
    - Notepad++
    - WinEdit (30 day trial)
    - EditPlus
- 7-Zip
- Quicktime
- Ghostview, GSView
- Evince (PS/PDF viewer)
- ssh client: e.g., PuTTY
- Anti-Virus software

- IrfanView
- MiKTex
- TeXnicCenter and/or Texmaker and/or TeXStudio as a Tex GUI
- JACoW *LaTeX (class file properly installed!)*
- VLC
- JACoW PS Printer Driver
- GIMP
- Paint.NET
- DoubleCommander (OpenSource) or SpeedCommander (30-Day Trial)

Critical Software

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Software

Recommended List for Mac

- ⦿ Mac OSX 10.6
- ⦿ MS Office
- ⦿ LibreOffice
- ⦿ Firefox
- ⦿ Google Chrome
- ⦿ JACoW LaTeX *(class file properly installed!)*
- ⦿ LaTeX
- ⦿ GIMP
- ⦿ Adobe Acrobat Professional 9 *(patched!)*
  - o JACoW licenses
  - o JACoW Acrobat configuration
  - o JACoW Distiller – Job Options properly installed
- ⦿ Enfocus Pitstop Professional 11
  - o JACoW licenses 30 day trial
  - o JACoW MediaBox ActionList

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Software

Recommended List for Linux

- ⊙ An Ubuntu-based distribution, latest version
- ⊙ LibreOffice
- ⊙ Firefox
- ⊙ Google Chrome
- ⊙ TeXLive
- ⊙ JACoW LaTeX *(class file properly installed!)*
- ⊙ LaTeXila
- ⊙ GVIM
- ⊙ EMACS
- ⊙ GIMP

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Software - Tools

⊙ Patching
  o Make sure all Critical and Important updates are installed through Windows Update before installing software!
  o Patches can be sequential. Re-run Windows update until all updates are installed!

⊙ Software Installers
  o NSIS (Nullsoft Scriptable Install System) – nullsoft.com
  o Ninite – installs or updates multiple apps at once – ninite.com
  o JACoW's Software Bundle

⊙ Disk Imaging/Cloning

  o Software (Clonezilla, Acronis, Norton Ghost, etc.)
  o Hard disk duplicators
    • Disk Jockey Pro, Aleratec, etc.
    • Cheap and Effective (~$400)

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NSIS (Nullsoft Scriptable Install System)

⊙ NSIS is a professional open source system to create Windows installers.

http://nsis.sourceforge.net
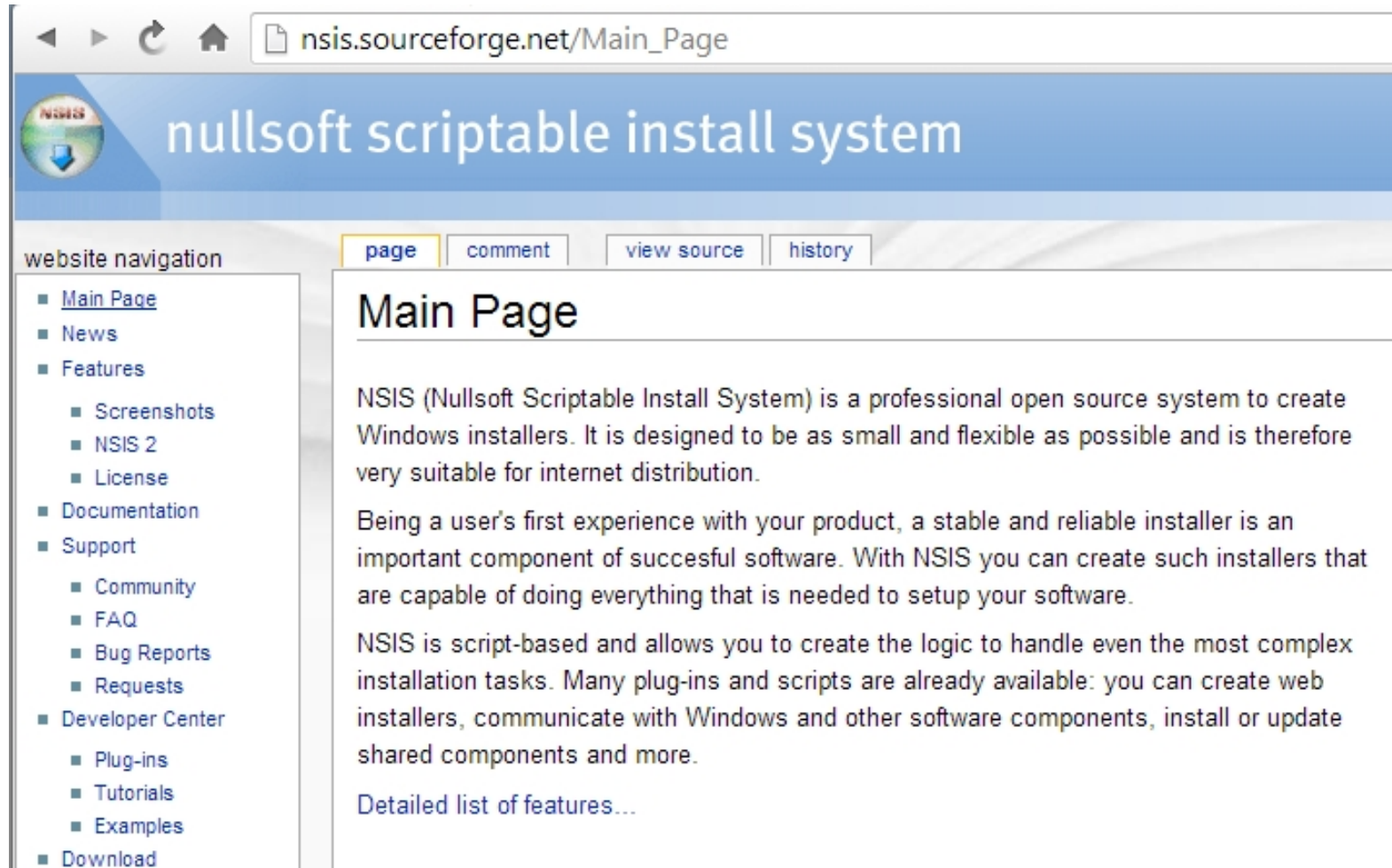
Ninite.com

- Create instant software bundles
- Works with Windows, Mac and Linux

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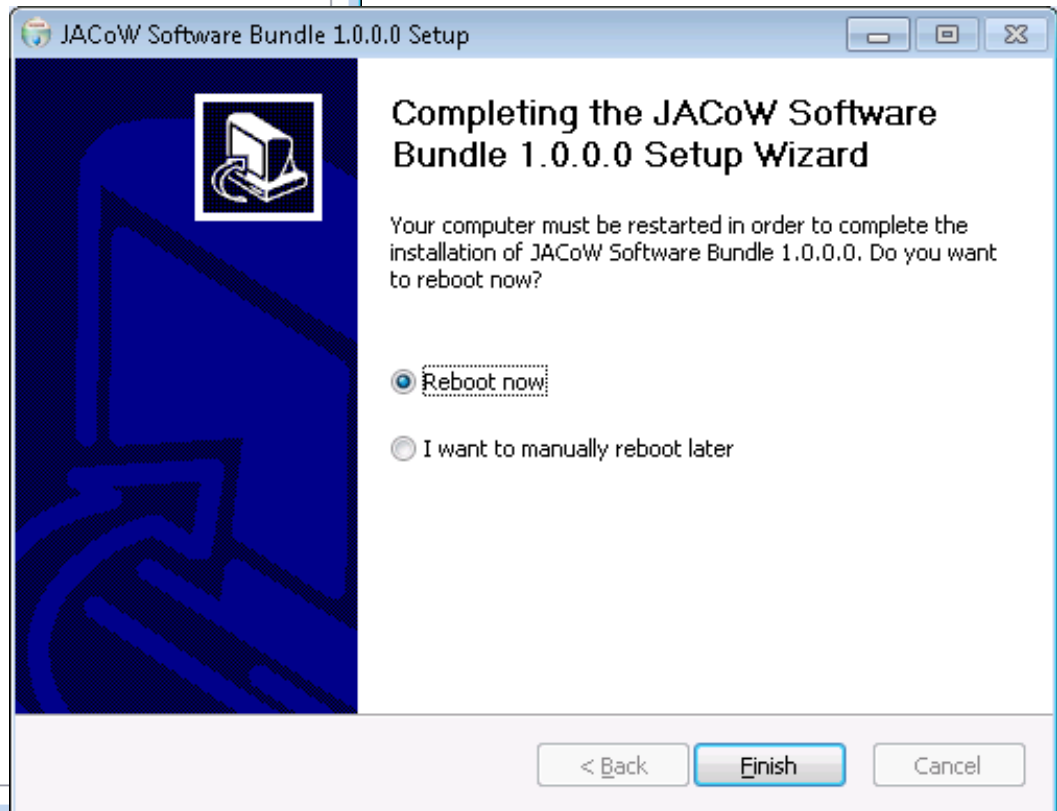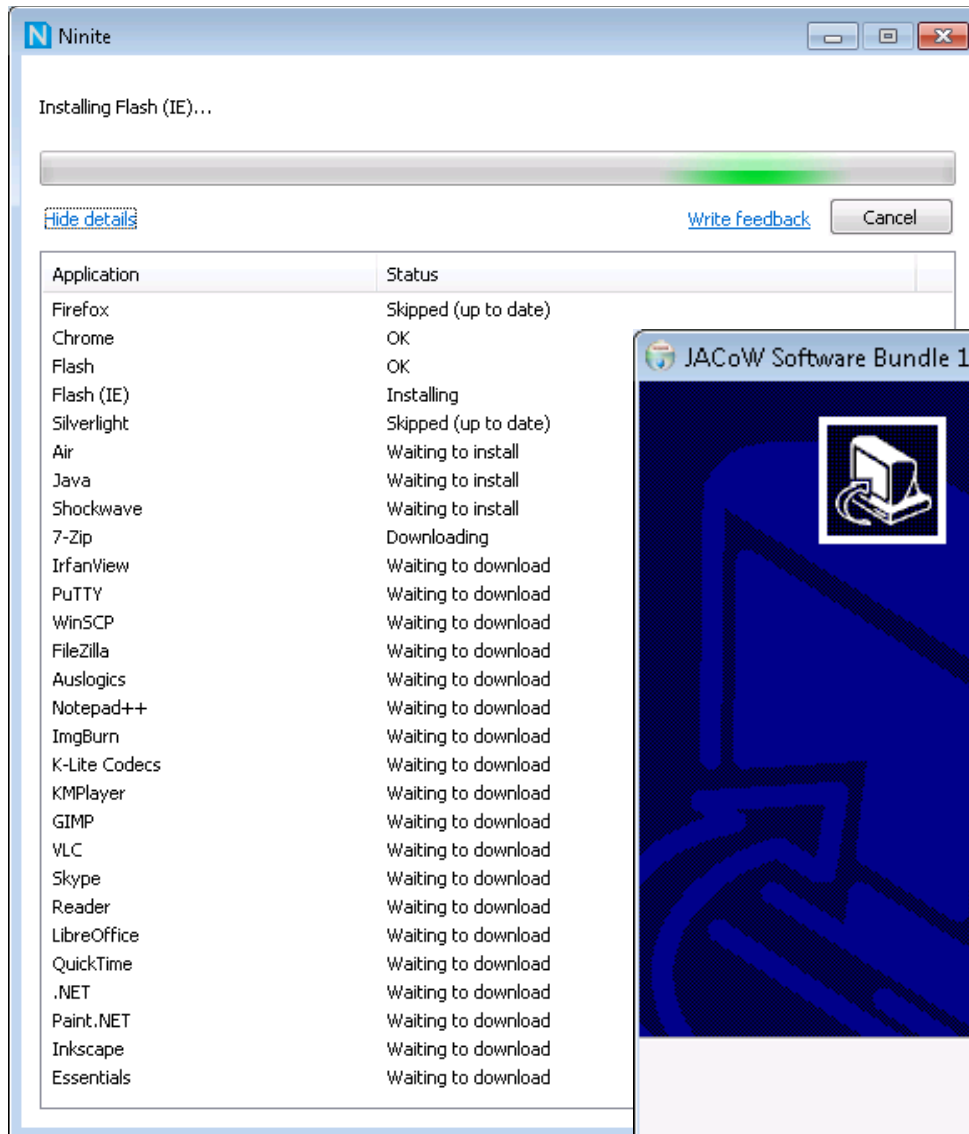
JACoW Software Bundle

⊙ Steps to install the software bundle

    o Download JACoW_Software_Bundle.exe *(by request to JACoW Chair)*

    o Run JACoW_Software_Bundle.exe as Administrator

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Software Tools
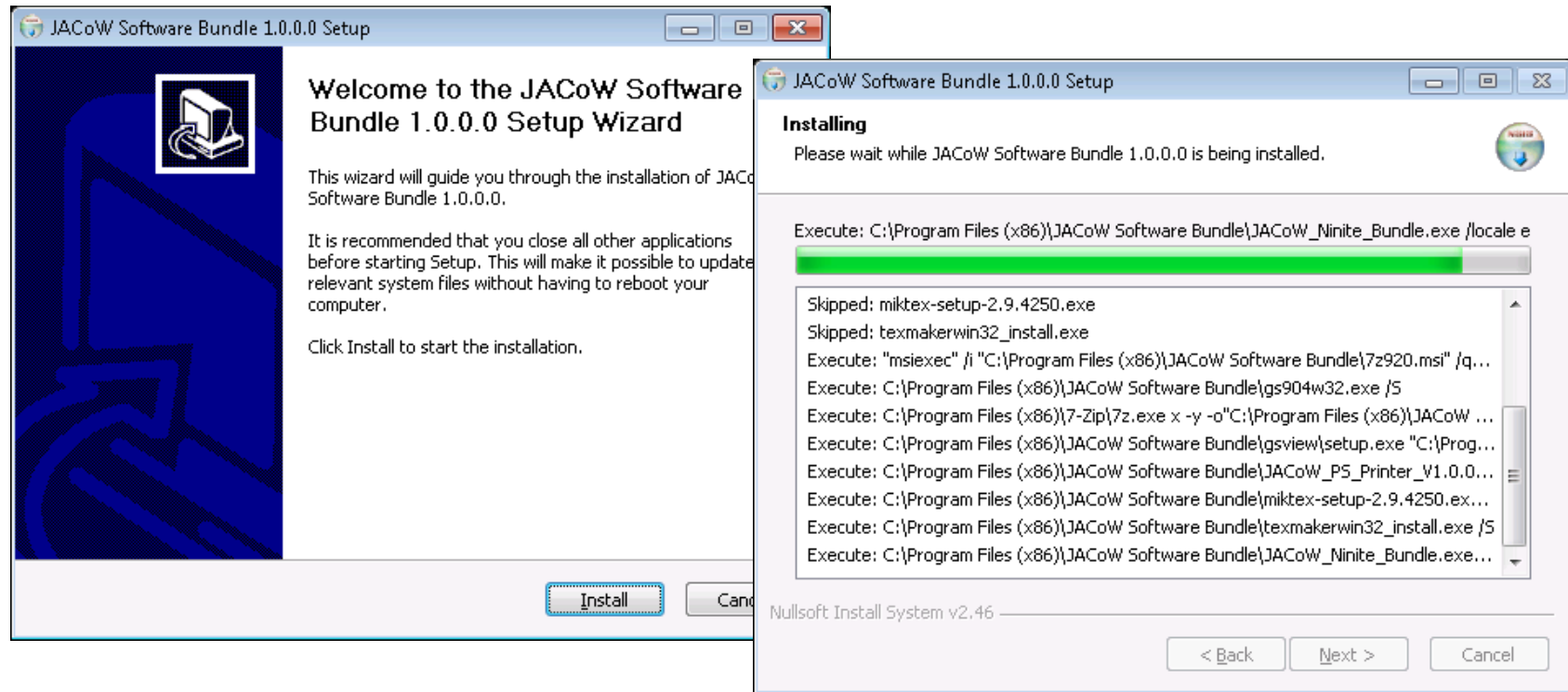
JACoW Software Bundle

Software Tools

Software – Final Configurations

- ⦿ Create a user that is not the built in Admin account (ipacuser) for the configuration. This will survive "sysprep."
- ⦿ The JACoW Bundle will create a folder on the Desktop called "JACoW Supplemental Files"
  - o This will contain documentation to finalize the configuration.
  - o JACoW ***Acrobat Preferences*** properly configured
    - • Example: Acrobat should be configured so that "Actual size" is chosen and NOT "Scaled to fit" when printing.
    - • See "Manual on Setting up Acrobat 9 and PitStop 11"
      In folder "JACoW Supplemental Files," or
      http://jacow.org/uploads/Editors/Acrobat9PitStop10.pdf
  - o *"SplitAnimations.ppa"* is a PowerPoint Plug-In needed for slide processing
  - o JACoW ***Distiller Job Options*** properly installed
  - o JACoW ***PostScript Printer Driver***
  - o *JACoW **MediaBox ActionList*** needs to be installed in PitStop

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Software

Software – Final Configurations

⊙ Default program for PostScript files should be Distiller.

⊙ Tex(maker) needs to be configured to use MiKTeX

⊙ Microsoft Word

- o Set "Do not scale A4 -> Letter when printing"
- o Set "Save/Embed fonts in file"

⊙ Browsers

- o The default home page should be SPMS. But it should not be the default 'home' page because it clears the session cookies.
- o Set editor.html for the current conference to the home page.

 https://appora.fnal.gov/pls/ipac15/editor.html

Software – Cloning/SysPrep

- Review your master system carefully! Anything missing will have to be fixed on all systems.

- Before cloning, you generalize the master system and prepare it to start in Windows Welcome.

- Generalizing the image removes any hardware-dependent information from it, resets the activation timer, and cleans up Windows 7 so that you can duplicate the image on other computers.

  o *The default Admin account information will be lost so make sure you have configured everything with a different user!*

- Running SysPrep

  1. Open SysPrep

  2. In the System Cleanup Action list, select *Enter System Out-of-Box Experience (OOBE)*.

  3. Select the *Generalize* check box.

  4. In the Shutdown Options list, select *Shutdown.*

  5. Click OK to run SysPrep and shut down the computer.

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Software

Software – Cloning/Sysprep
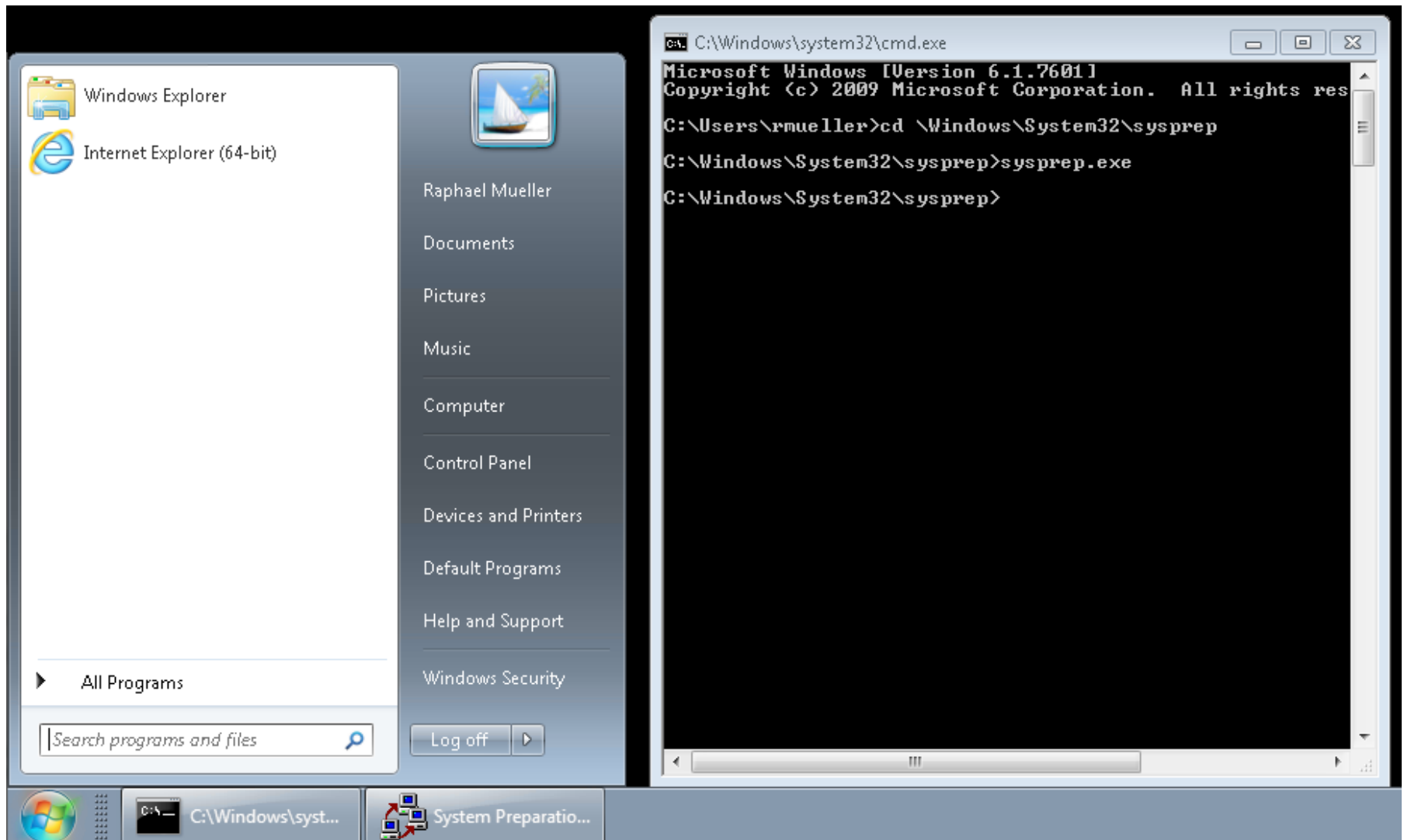
Software *Cloning Tools*

- ◉ *Clonezilla* is a free, open source cloning tool that runs from a "Live CD." *Best choice from my perspective!*
- ◉ Commercial Software:
  - o Acronis True Image
  - o Norton Ghost (old and outdated)

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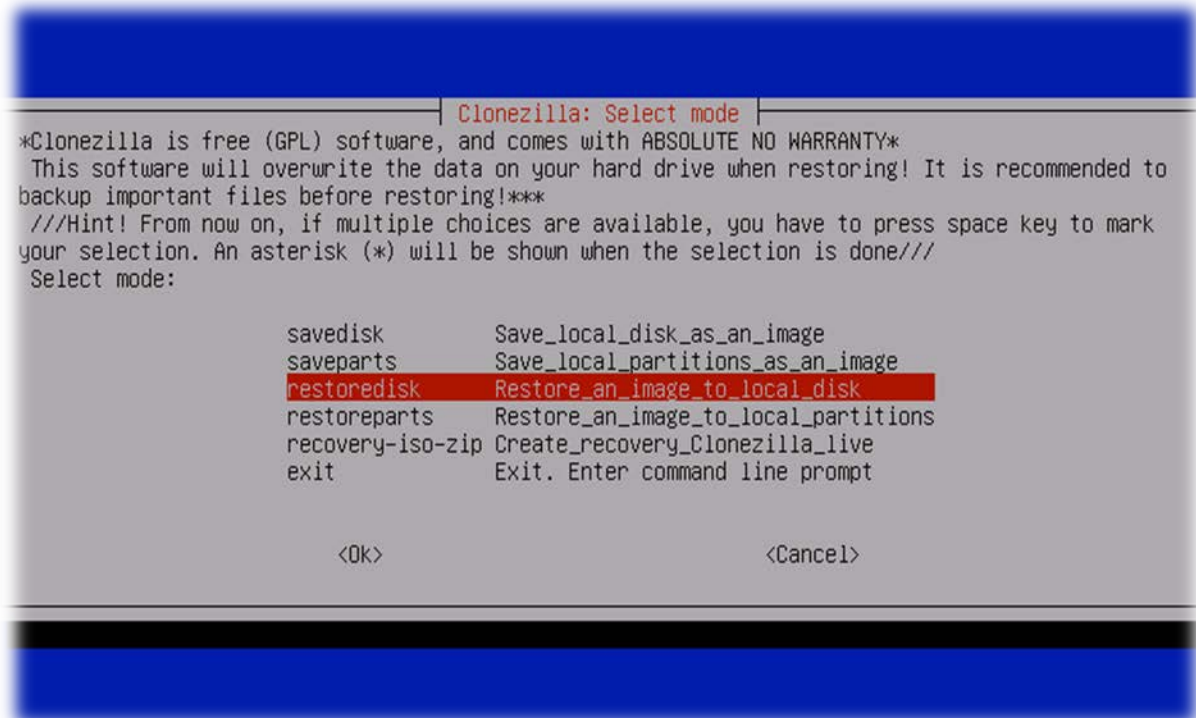
Hardware Cloning Tools *(IPAC'15)*

$400   *3 Copies in 12 Minutes for a 256Gb SSD*

Aleratec Copy Dock

Hardware Cloning Tools (IPAC'12)

⊙ Disk Jockey Pro – iPac'12

- o Hard Disk Duplicator
- o Disk Jockey Elite - ~$700

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Software

Speaker Timer

⦿ Web Application: HTML and JavaScript

- ○ *Source: http://www.jacow.org/index.php?n=Tools.Software*
- ○ Easy to Modify
- ○ Runs on any OS
- ○ Auto start Firefox to run local copy
- ○ No network connection necessary!

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Software Tools

Other Considerations

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Web and File Server Considerations

Participants

iPac'12

- The final months before a conference are the Web and File Server's busiest in terms of load.
- During a conference editors are continually downloading and uploading papers and source files from the File Server.
- *The reliability and connectivity to the Web and File Server from or at the venue is very important!*

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Other Things to Consider

NA-Pac'11 – Paper Upload Traffic
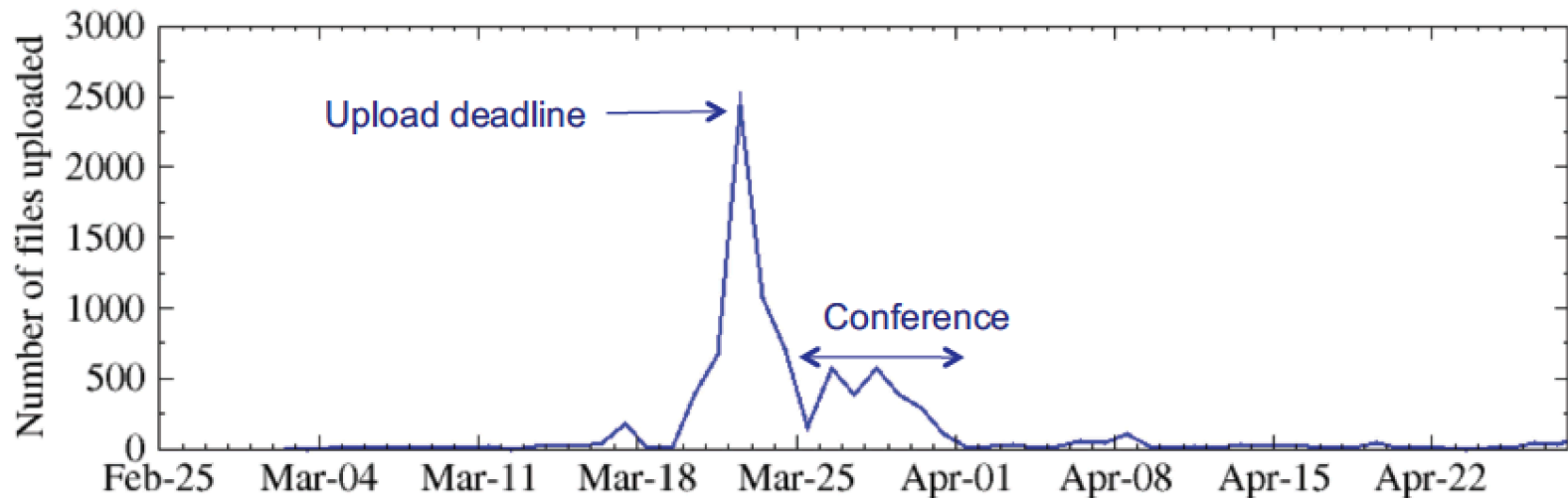
- ◉ Server traffic basically flat until ~1 week before deadline.

- ◉ Peak traffic was ~250 files/hr. on paper upload deadline.

- ◉ Bandwidth was comparable during conference editing.
  - o Most files were larger (postscript/PDF, presentation files)

- ◉ Occasional uploads during post-conference processing.

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Other Things to Consider

Backups

⊙ Proceedings Office

   o Work stored in a PO folder on the desktop needs to be backed up *(hourly if possible)*.

⊙ Local File Server

   o If using a local file server for the SPMS stored files, be sure to have a backup strategy.

⊙ Speaker Preparation

   o A local backup of all the talks for the day is downloaded from SPMS as part of the normal workflow in case of network transfer problems.

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Other Things to Consider

Backups - Methods

⊙ SyncBack – free and paid versions

- o Can use a PO system as the target for backups.
- o Windows 7 allow up to 20 connections to shares.

  (XP has a limit of 10)

- o A Linux systems with a Samba or FTP shares is also a simple solution.

⊙ Rsync via cygwin – *opensource*

- o Can use custom rsync scripts
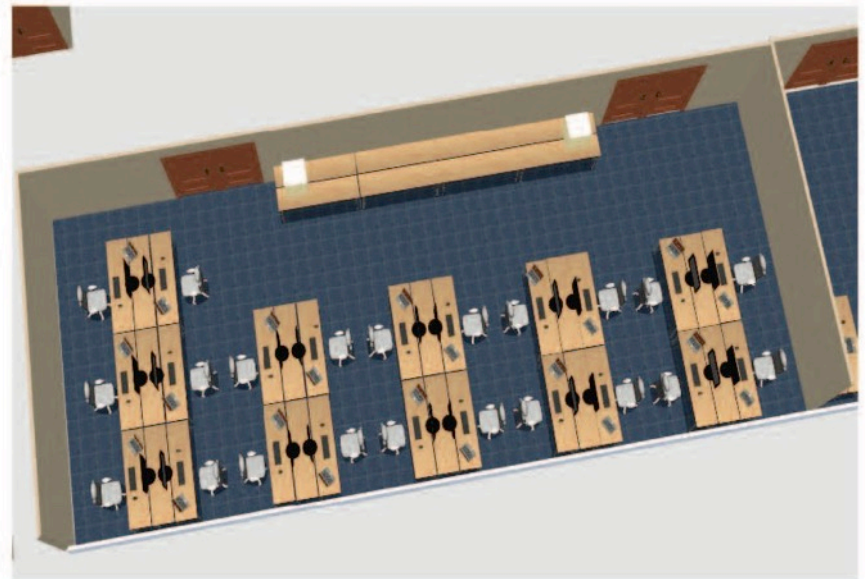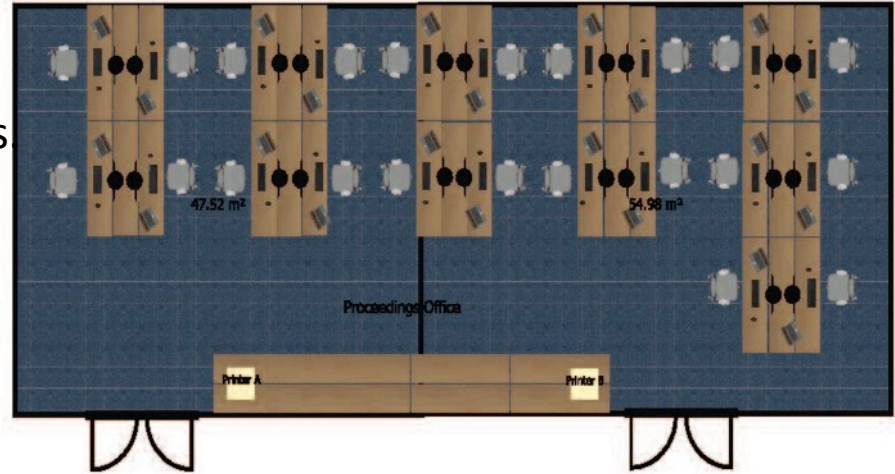- o Write custom bash scripts and run via Task Scheduler

⊙ Local Script using xcopy or robocopy

- o Write batch scripts and run via Task Scheduler

robocopy \\server\share\directory" "C:\program files (x86)\program" /E /IS

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Other Things to Consider

Space Planning

- ⊙ Layouts should be created for all IT spaces.
- ⊙ Layouts can be created with *Sweet Home 3D* *(sh3d)*
    - o *Free* interior design application
    - o https://www.**sweethome3d**.com
- ⊙ Helps to avoid surprises – everything fits!

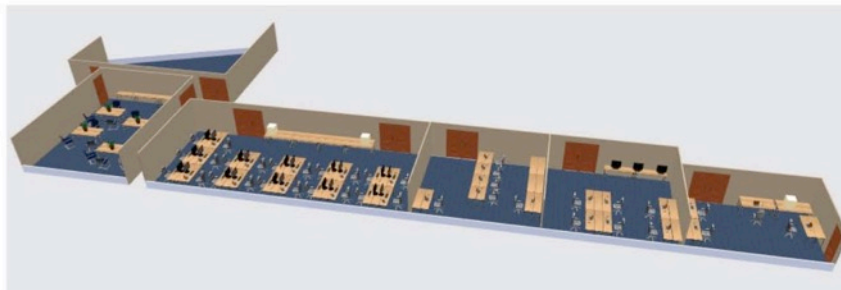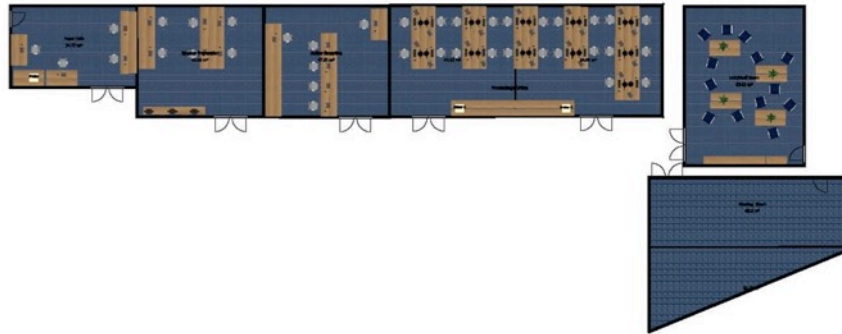Jefferson Lab

Other Things to Consider

Space Planning
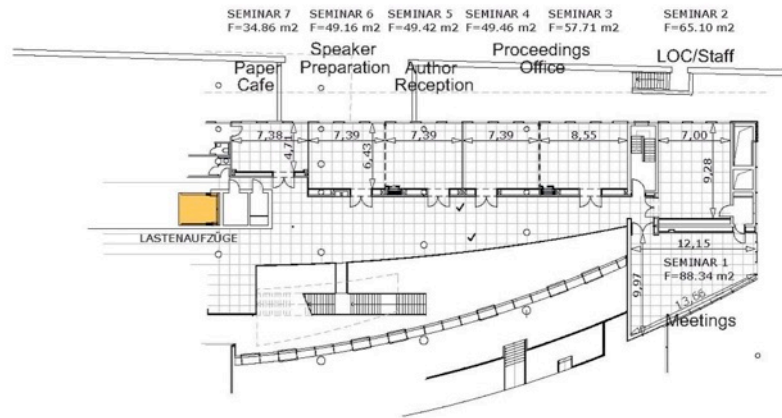
Space Planning

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Ergonomics - Workspaces

⊙ Proceedings Office and Author's Reception
   o Deep enough to work with printed papers.
   o Enough space for laptop and to put other gear.
   o Extra chairs (and space) for visiting authors.

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Ergonomics - Chairs

⊙ Proceedings Office and Author's Reception

- o Ergonomic, height adjustable chairs.
- o Editors sit in them for 8-12 hours a day for up to 10 days.

Ergonomics - Lighting

⊙ Proceedings Office and Author's Reception

  o Daylight is best, otherwise bright full spectrum light is a must.

  o Editors working this room for 8-12 hours a day for 10 days.

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Logistics

⊙ **Think about how you are going to get everything to the Venue!**

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Logistics

Advice for Future Planners

- Learn from Lessons from the past!
    - *Send as many people to as many conferences as you can.*
- Be Flexible!
    - *Don't think the requirements of your conference will exactly the same as the last one. (Printers?)*
- Bring extra:
    - *Power strips*
    - *Extension Cords*
    - *Monitors*
    - *Stock up on sleep*

- Spending lots and lots of time with the network people beforehand pays off.
- Having people with experience in Speaker Prep made it run like clockwork. Send a Speaker Manager to at least one conference for training.
- A/V and IT should perhaps be separate people. It is a bit too much to do both.
- Include/Draft intelligent dedicated people as early in the process as you can. You can't do it alone. Bring as many people as they will allow you.

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Advice for Future Planners

⦿ *Don't expect to get anything done at your regular job starting about a month before the conference!*

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Advice for Future Planners

⊙ *You will do a lot more than IT!*

More Information

◉ JACoW Information for Organizers

http://www.jacow.org/index.php?n=Editors.HomePage
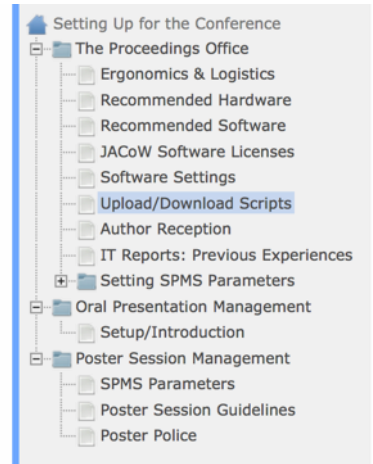
◉ Previous IT Reports

http://www.jacow.org/index.php?n=Editors.ITReportsPreviousExperiences

◉ Recommended Software List

http://www.jacow.org/index.php?n=Editors.RecommendedSotware

◉ Proceedings Office: Recommended Hardware

http://www.jacow.org/index.php?n=Editors.RecommendedHardware

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Q & A

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