The Electronic Parliamentary Bench

User and Technical Perspectives

Assembly of the Republic

PORTUGAL

Carlos Galrão – carlos.galrao@ar.parlamento.pt
Pedro Nascimento – pedro.nascimento@ar.parlamento.pt

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Topics

- Main Objectives
- Challenges / Problems Encountered
- User Perspective
- Technical Perspective
- Costs
- New Projects

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Main Objectives

- Transform session hall in a conference room, equipped with modern technologies
- Install a presentation system to allow the front rows and speakers tribune to project images
- Allow MPs to access internal and external information during sessions
- Take advantage of construction works in session hall
- Installation of structured cable infrastructure

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Challenges / Problems Encountered

- Session Hall is classified as National Monument
- Reduced space to have computers
- Equipments durability
- Noise, heat and power consumption of 250 equipments
- Mobility since there is no fixed seats per MP
- Each Political Party has it’s own infrastructure (Active Directory Domain, File Server, Mail, Print)

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User Perspective – Video Presentation - BEP

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BEP – Electronic Parliamentary Bench Identification

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User Perspective – Video Presentation – Voting and Projection System

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Demonstration of the BEP
Electronic Parliamentary Bench voting system

Quorum verification

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User Perspective

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Technical Perspective – Monitor

- LCD 15” TFT
- Precision Touch Screen
- Pixel Area - 0.297 x 0.297 mm
- Visible Area - 304.1 x 228.1 mm
- Brightness - 250 cd/m2
- Contrast - 400:1
- Max Screen Resolution – 1024 x 768 pixels
- Angle View – H 80º + 80º; V 80º + 80º
- 16 million colors
- Response Time – 15ms(R) and 10ms (F)
- RCA, S-Video and 15 pins Sub-D
- Weight – 6Kg
- FCC-B, EC and UL Certification

Monitor LCD 15" to built-in table with elevator, XGA, PC, Mac and Video

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Technical Perspective – Keyboard and Multimedia BOX

Multimedia BOX

- USB Ports
- Microphone Input
- Headphones Output
- Smartcard Reader

Keyboard

- Thin Keyboard
- Integrated TouchPad

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Technical Perspective – Computer

Computer

- Inside a locked cabinet
- MPs have no access
- Reset is made when the monitor is retracted

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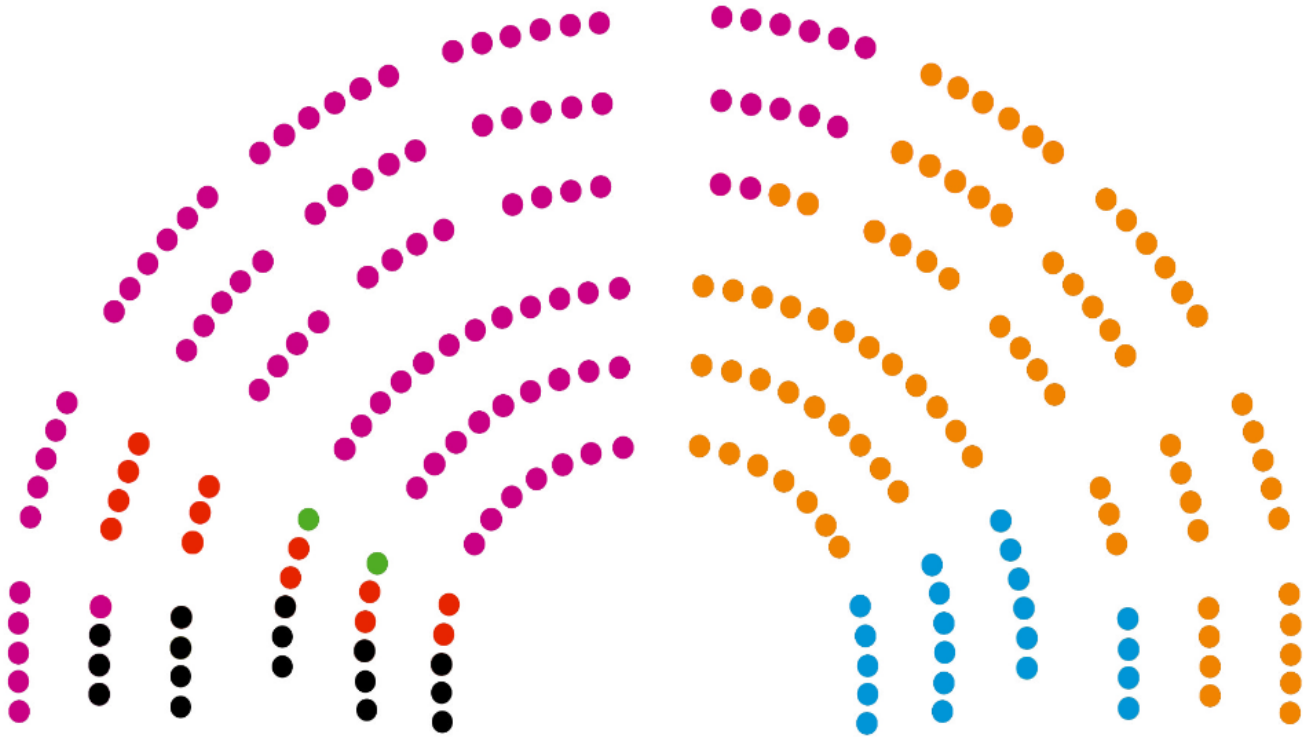
Technical Perspective – How does it work?

Workstation
BEP - GP1

Workstation
BEP - GP2



Workstation BEP:

- Each Political Party (GP) has its own VLAN network
- Depending on the network that the workstation is in, the logon screen changes to reflect the Political Party (GP)
- Workstations have 0 configuration, all settings come from network servers

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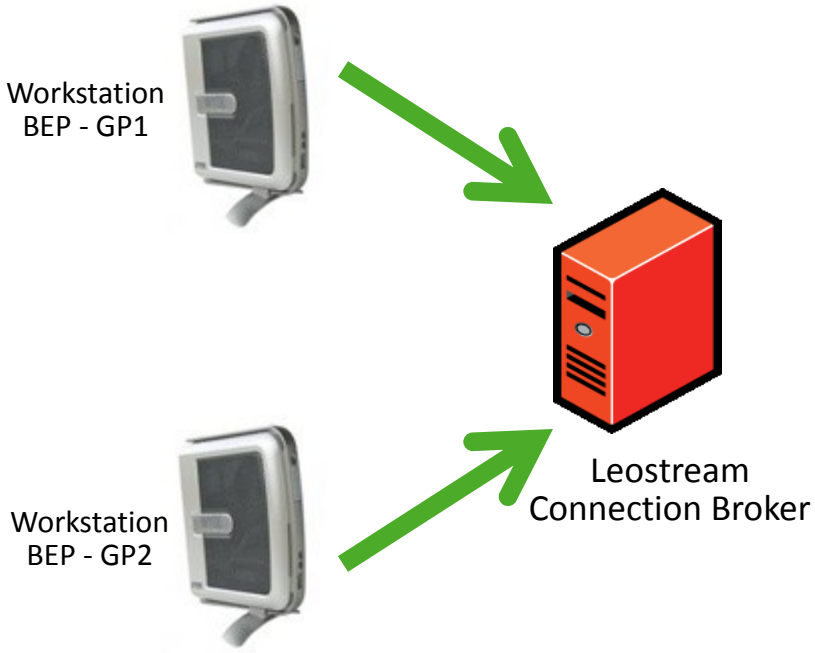
Technical Perspective – How does it work?



1 – Workstation connects to Connection Broker and User enters authentication credentials

- Allows Login to Workstation using username and password or smart card
- Different settings by Political Party (GP) for authentication
- Optional Smartcard

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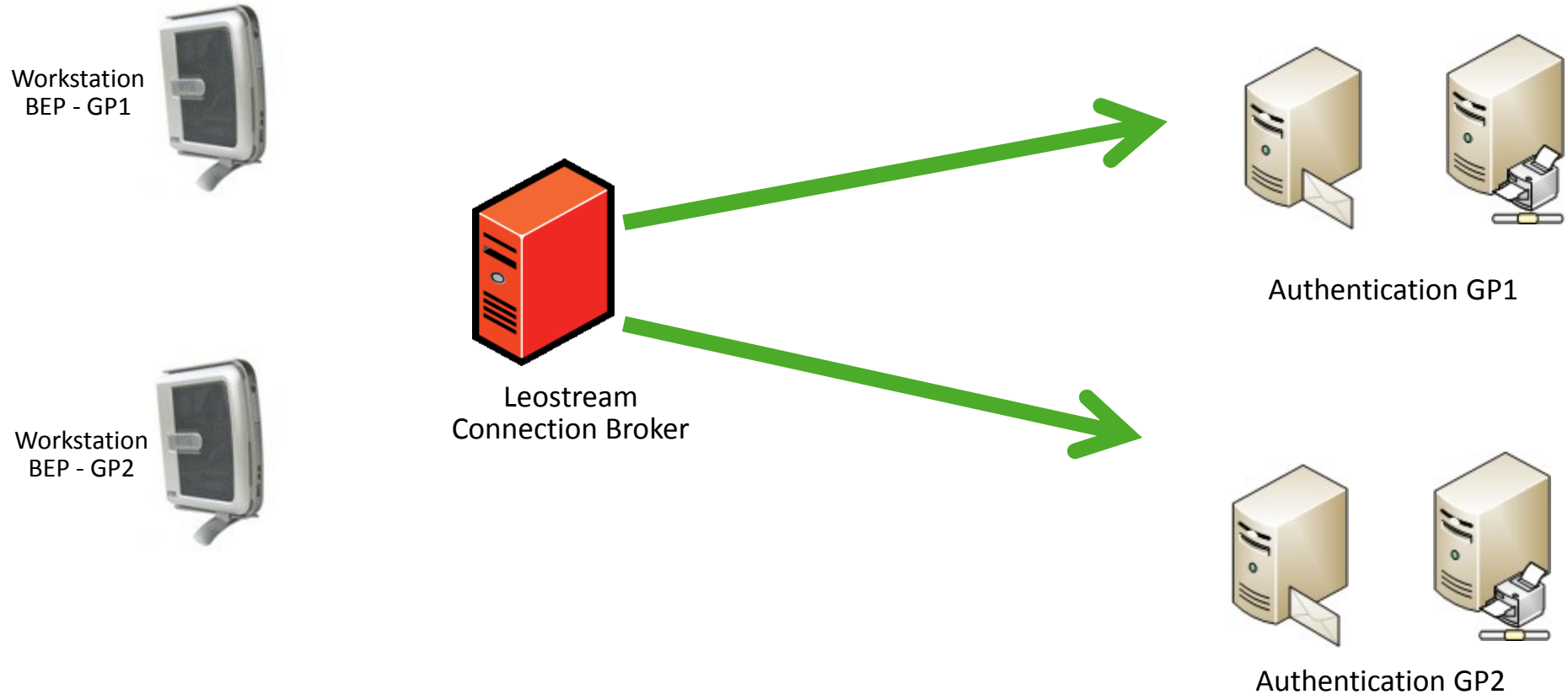
Technical Perspective – How does it work?



2 – Credentials validation

- Leostream Connection Broker goes to the Political Party's (GP) domain controllers to validate if username and password or smartcard are correct

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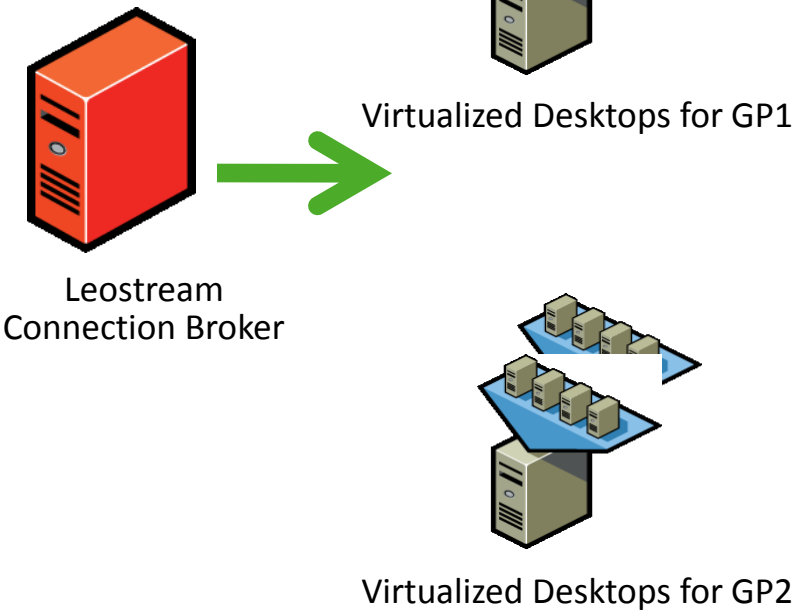
Technical Perspective – How does it work?



3 – Leostream Connection Broker goes to Virtual Infrastructure

- Determines if user has Virtual Machine assigned
- If no virtual machine is assigned, it assigns one available
- If no virtual machine is available, it creates one based on a pre-created Template

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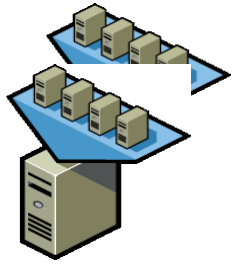
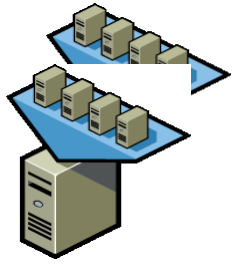
Technical Perspective – How does it work?





4 – Workstation BEP connects to Virtual Machine

- Workstation uses RDP 6.2 to connect to to VM
- Logs in automatically with given username / password or smartcard
- Opens previous session of user

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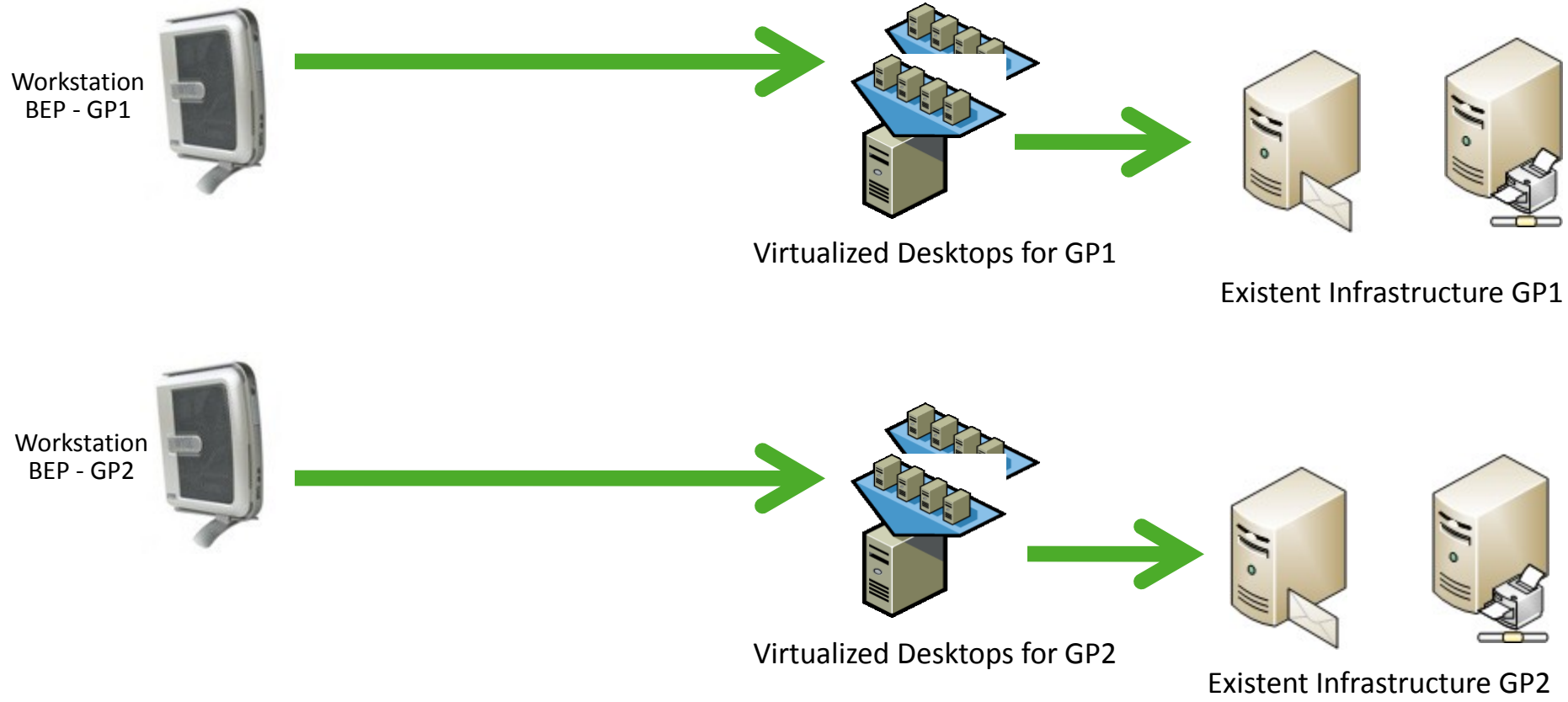
Technical Perspective – How does it work?



5 – User gets desktop and available applications (Windows or Linux)

- Leostream Connection Broker is “removed” from connection
- Users work with virtual machine as if it was a physical desktop
- Users can access Email, File and Print Server, Internet, internal information and databases

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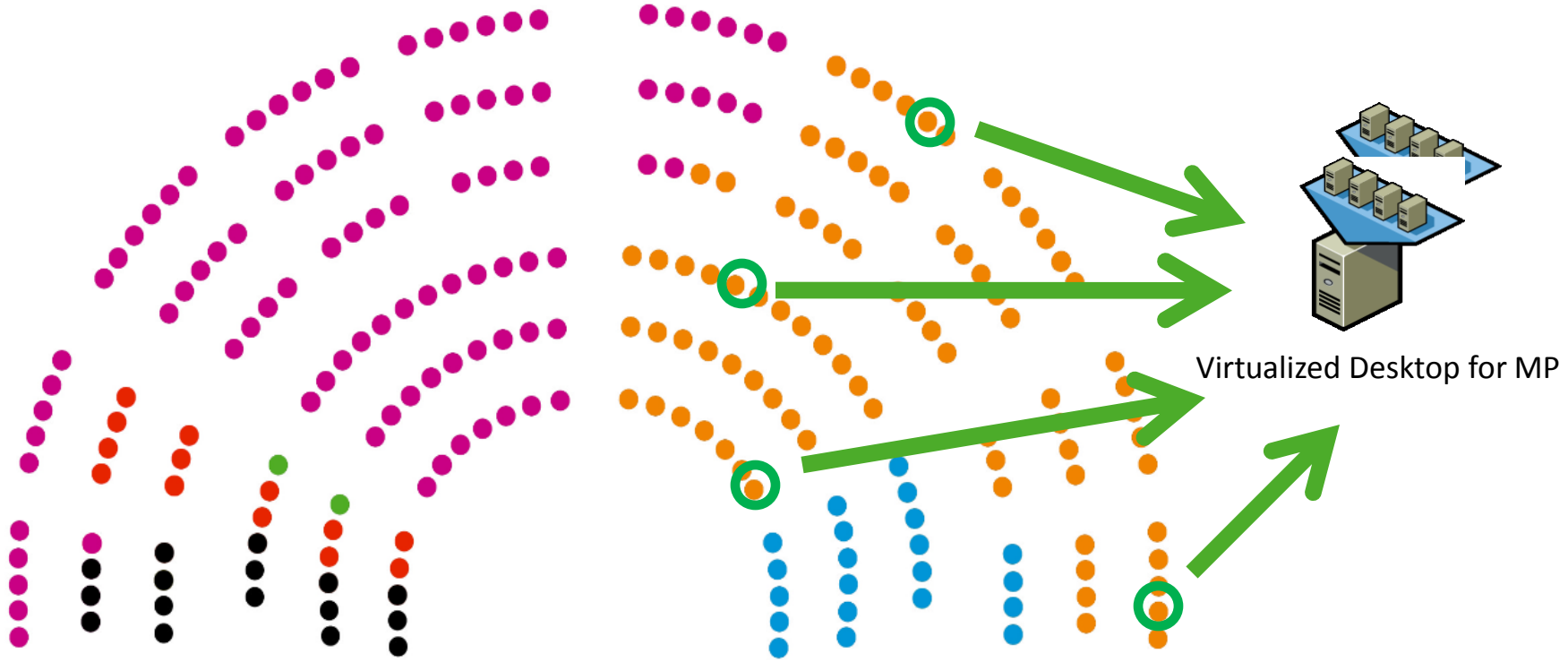
Technical Perspective – How does it work?



6 – User always gets the same desktop

- Regardless of the location the MP is at, he always gets the same virtual machine
- Open Programs and Documents are not lost when MP changes seat
- MP always works in the same virtual machine, so all his settings and configurations (Favorites, Mapped Printers, Wallpaper, Desktop Icons, etc) are always the same

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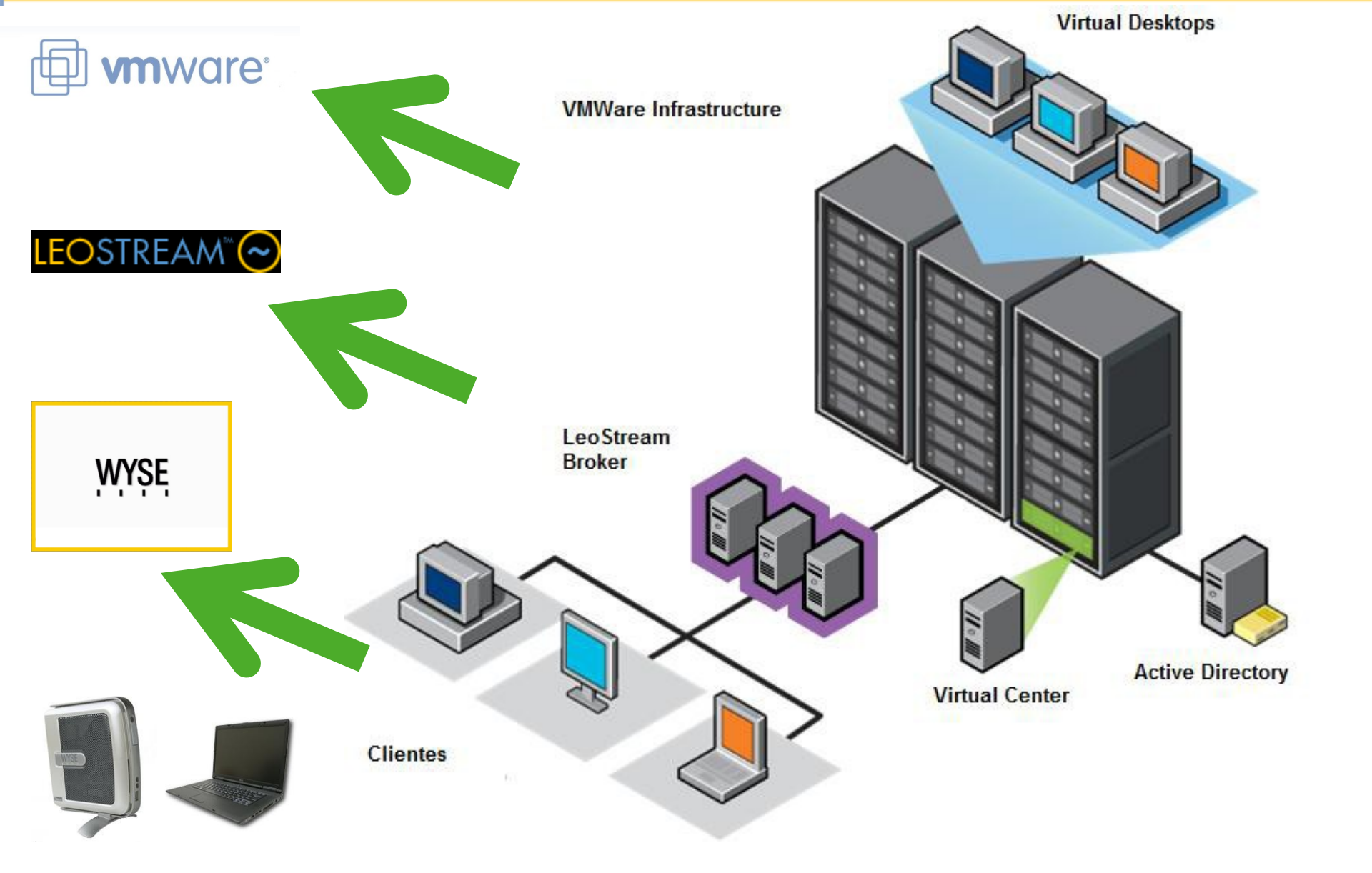
Technical Perspective – What makes it work?



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Technical Perspective – What makes it work? – Thin-Client

Wyse V10L

Processor	Via C7 Eden 800GHz
Memory	128MB Flash/128MB DDR RAM
Physical characteristics	Height: 7.9 inches (201mm) Width: 1.8 inches (46mm) Depth: 7.1 inches (180mm) Shipping Weight: 8 lbs. (3.6kg)

WYSE

http://www.wyse.com

Wyse X90

Processor	VIA C7-M ULV 1.2GHz
Memory	1GB RAM / 1GB Flash standard configuration Other configurations available: 2GB RAM / 1GB Flash
I/O peripheral support	4 USB 2.0 ports (3 left/1 right) 1 VGA port 15-pin D-Sub for external monitor 1 DVI-D port for external monitor SD card slot for additional storage 1 Express 34/54 slot (PCI-E based for additional performance and 3G wireless access)
Networking	10/100/1000 Base-T fast Ethernet (RJ-45) Integrated Wireless 802.11b/g/n

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Technical Perspective – What makes it work? – Thin-Client

	Traditional Desktop	Traditional Laptop	Thin-Client
Average Price	750€	1.100€	400€
Weigh	15 Kg	2 Kg	1.5 Kg
Size	46x45x17cm	31x23x4cm	20x18x5 cm
Power	238W/h	35W/h	15W/h
Produced Heat	High	Medium	Low
Noise Levels	High	Medium	Low
Maintenance Costs	High	High	Low
Operations Costs	High	High	Low

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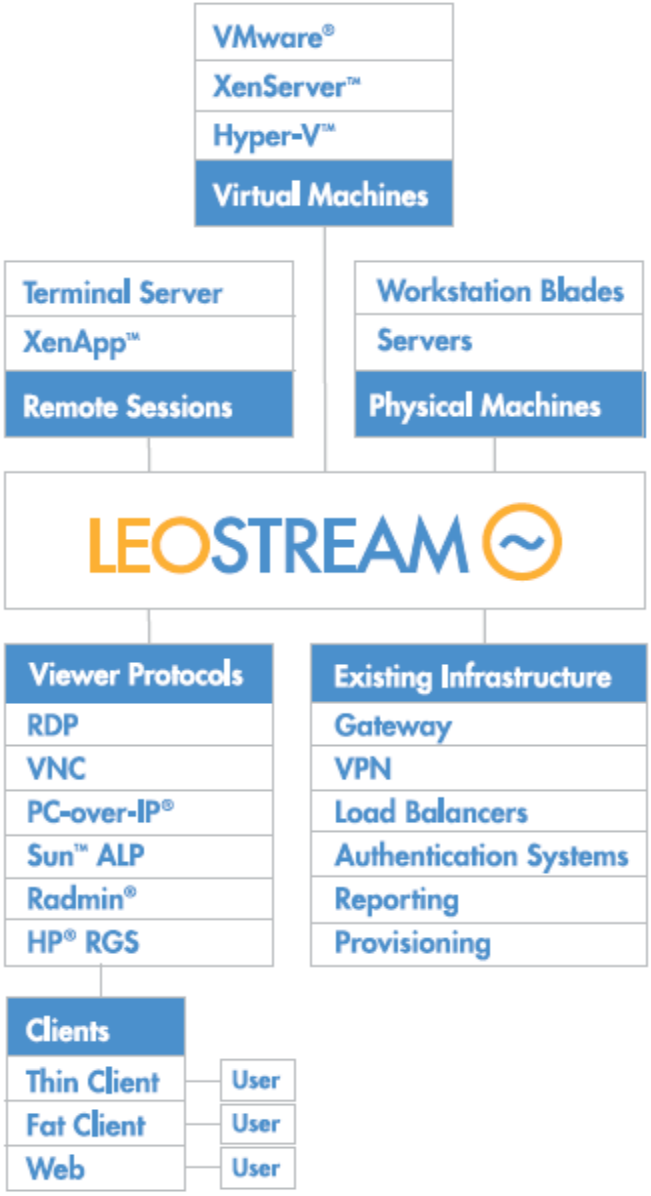
Technical Perspective – What makes it work? – Leostream



Leostream Connection Broker

- Thin-Client connection point
- Links the Physical with Virtual Machines
- Allows the use of both Fat and Thin Clients
- Allows the use of multiple Active Directory Domains
- Supports username/password and Smartcards
- Provides Virtual Machine Provisioning
- Supports different provisioning rules per domain
- Provides secure RDP connections
- Detailed usage reporting
- Software Appliance designed for Virtualization
- Simple and Easy installation with Central Database
- Easy Management through Web Interface

http://www.leostream.com

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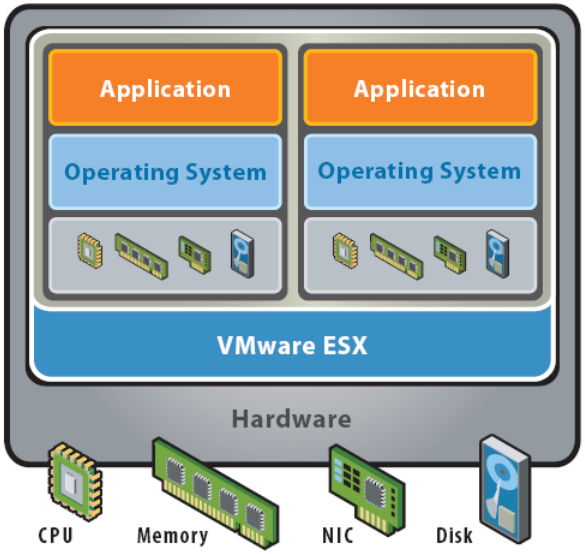
Technical Perspective – What makes it work? - Virtualization

- Virtualization is a process that, through hardware segmentation, allows executing innumerous operating systems in a single physical equipment. Each virtual machine is a full working operating system, safe and with complete isolation like it was an independent computer. With virtualization it's possible to store several virtual machines in a single physical server. This allows a Datacenter to operate more efficiently and with significant lower costs

- A virtual machine is identical to a physical machine since it has BIOS, boot process and devices such as hard drives, networks cards, RAM memory, video cards. It's called virtual machine since all hardware devices are virtual

http://www.vmware.com



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Technical Perspective – What makes it work? - Virtualization

Key Features

- **VMware vCenter Server** provides a central point of control for virtualization management, essential for administering infrastructure and application services, with deep visibility into every aspect of virtual infrastructure, automation of day to day operational tasks and the scalability to manage large datacenter environments.
- **VMware vStorage VMFS** is a high performance cluster file system which abstracts away the complexity of storage hardware from applications. VMFS allows efficient sharing and controls concurrent access to storage by virtualized servers.
- **VMware vStorage Thin Provisioning** allows storage purchases to be deferred until they are really required, reducing storage spending by up to 50%.
- **VMware DRS** aggregates compute resources across many clusters and dynamically allocates them to virtual machines based on business priorities, reducing management complexity through automation. VMware DPM, included with VMware DRS, automates energy efficiency in DRS clusters by continuously optimizing the power consumed in a DRS cluster
- **VMware VMotion** eliminates the need to schedule application downtime due to planned server maintenance through live migration of virtual machines across servers with no disruption to users or loss of service.
- **VMware Storage VMotion** eliminates the need to schedule application downtime due to planned storage maintenance or during storage migrations by enabling live migration of virtual machine disks with no disruption to users or loss of service.
- **VMware High Availability (HA)** provides cost effective, automated restart within minutes for all applications in the event of hardware or operating system failures.
- **VMware Fault Tolerance (FT)** provides continuous availability, without any data loss or downtime, to any application.

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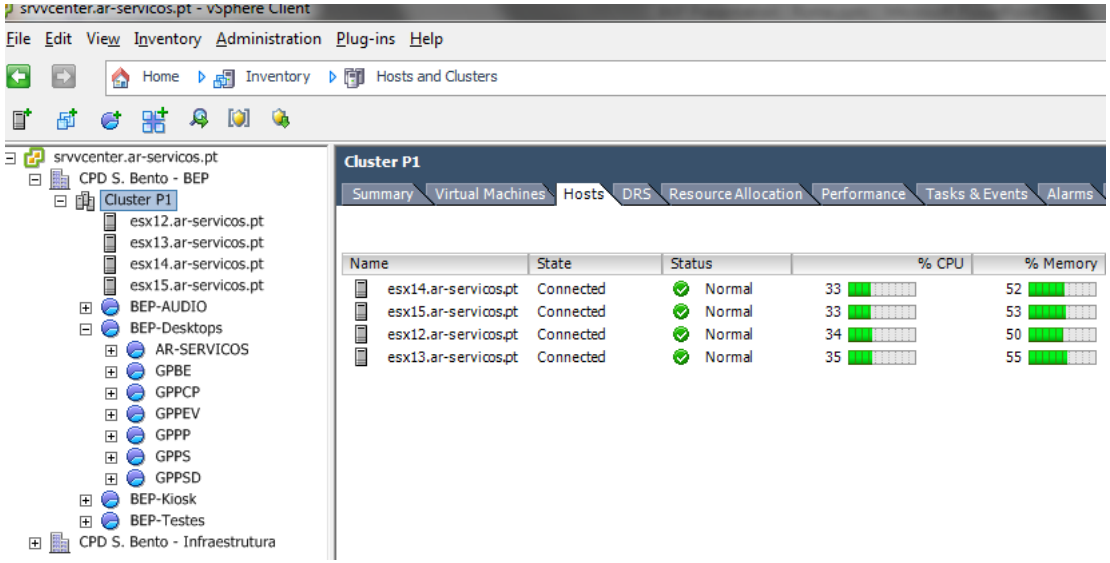
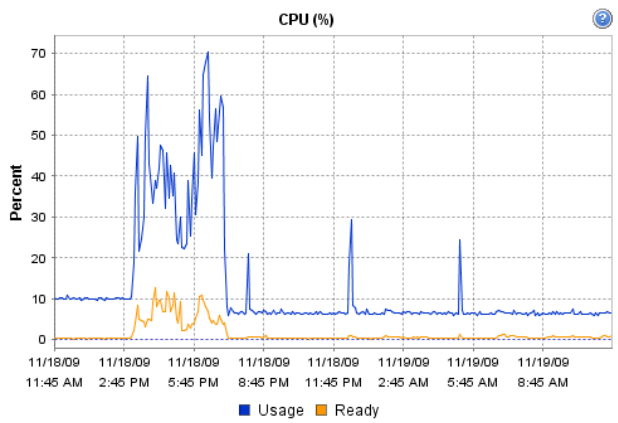
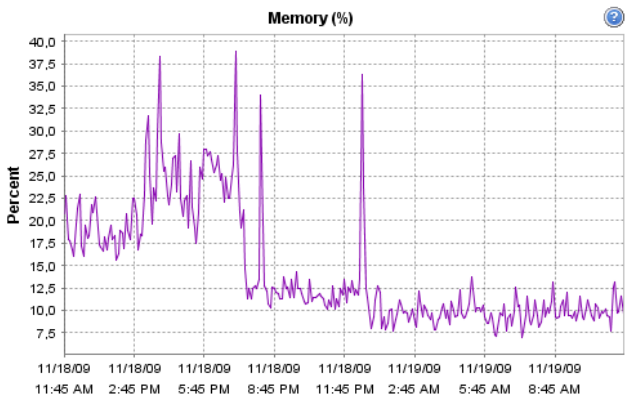
Technical Perspective – What makes it work? - Virtualization

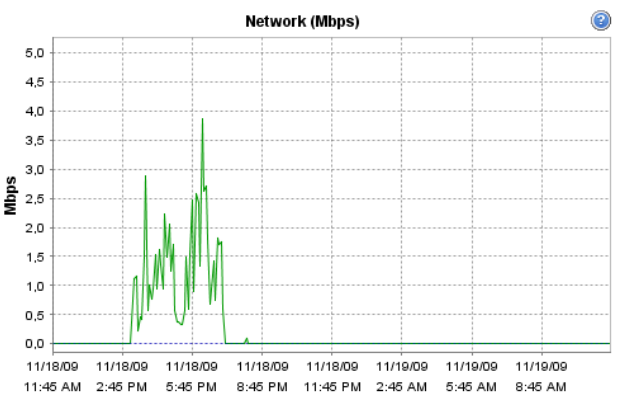


- 4 Physical Hosts
  - 4 x AMD Quad-Core Proc
  - 128GB RAM
  - 8 NIC 1000Mbps
  - 2 FC Cards 4Gb/s
- Storage EVA8100 with 16TB

- 4 Virtual Servers
- 270 Virtual Machines for MPs
- 60 VMs for test purposes







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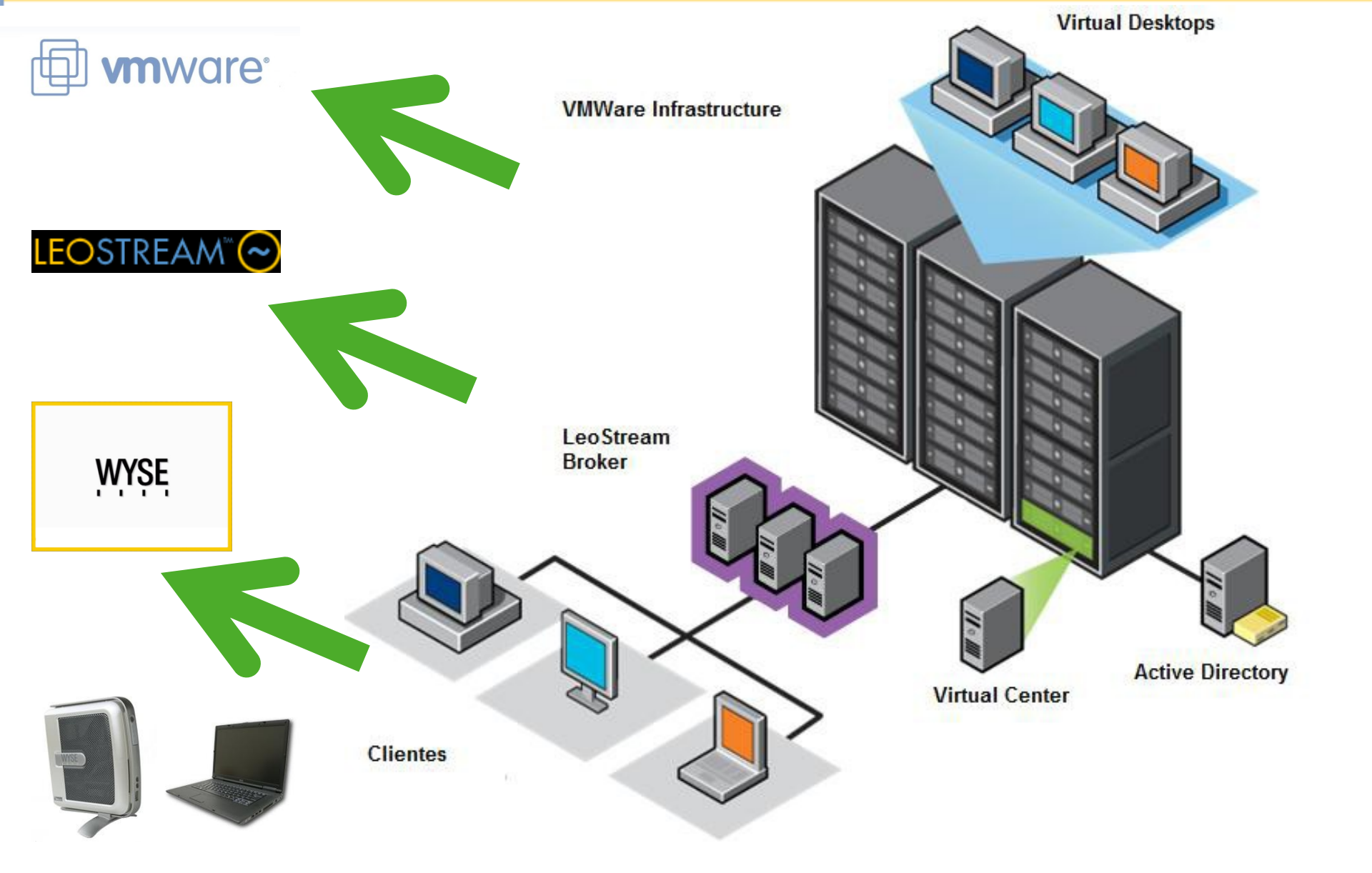
Technical Perspective – What makes it work?



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Costs

Front-Office		
Hardware	Monitor	297.500€
	Wyse V10L	78.400€
	Keyboard + Multimedia Box	31.850€
Software	Wyse USB Redirector	5.500€
	Wyse Multimedia Accelerator	5.500€
Back-Office		
Hardware	Blade Servers	37.000€
	EVA Storage Disks	52.000€
Software	License Vmware	28.800€
	License Leostream	15.000€
Maintenance		17.000€
Installation Services		66.750€
	TOTAL	**635.300€**

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New Projects - SIP

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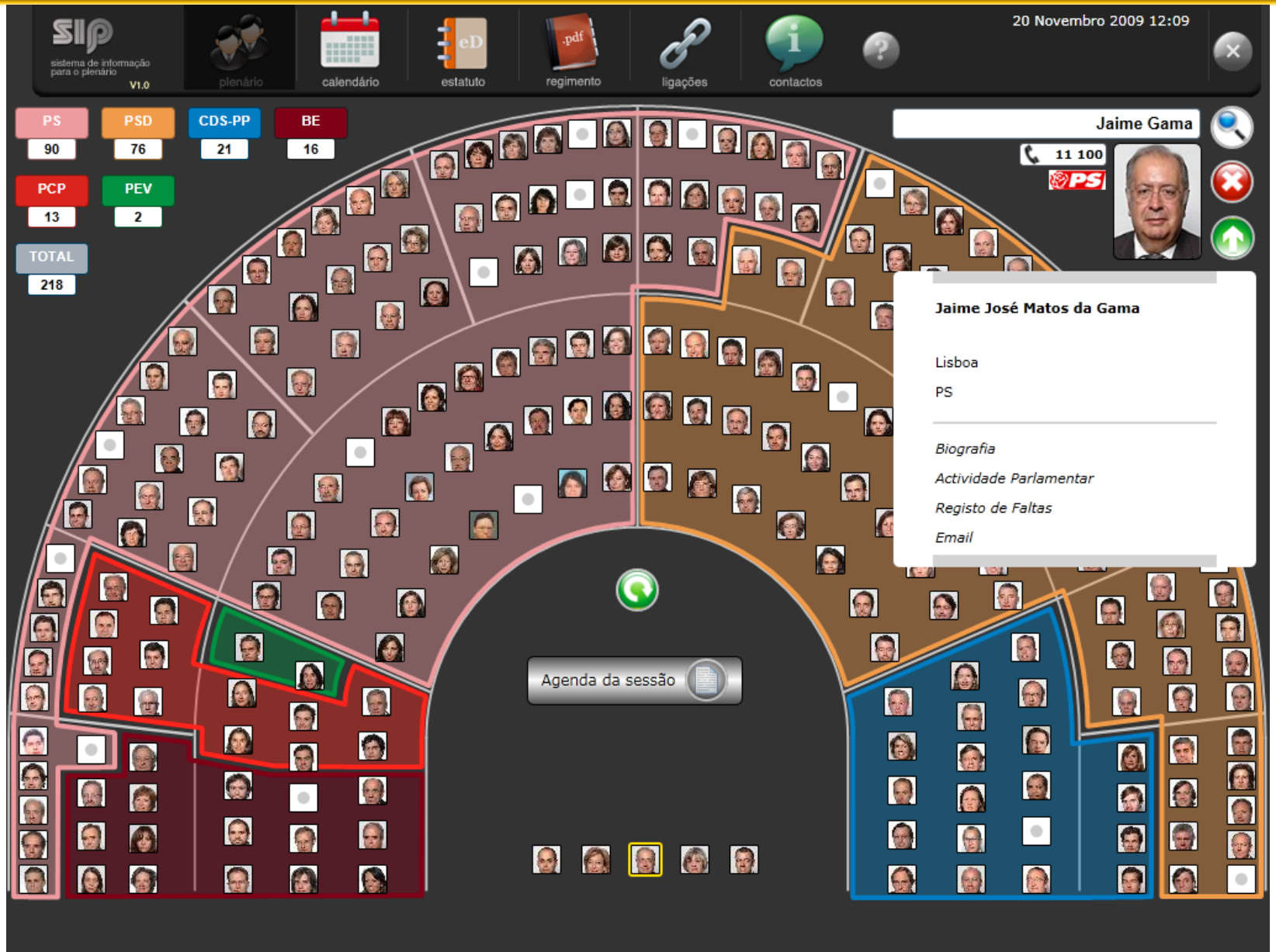
New Projects - SIP



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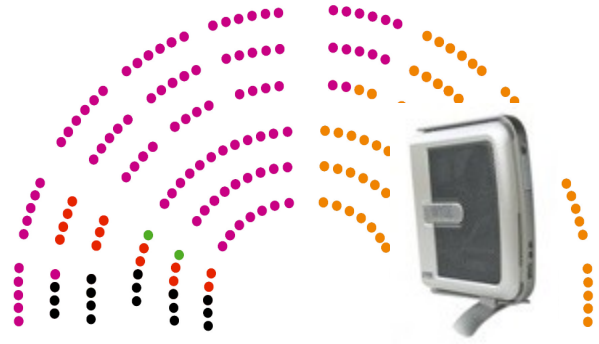
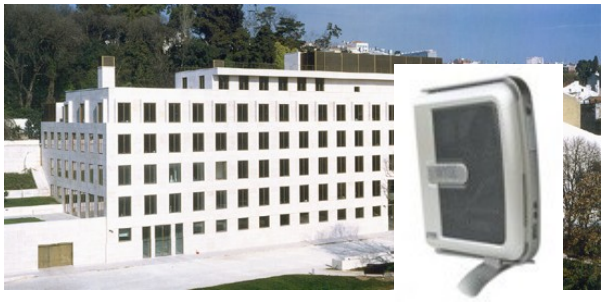
New Projects – Office and Remote Access



(Session Hall)

Workstation
BEP



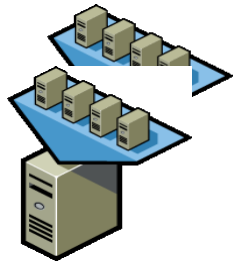
(Office)

Workstation
BEP

Typical
Desktop

Internet
Connection

Leostream
Connection Broker



Virtualized Desktops for GP1

Questions?

User and Technical Perspectives

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