Mz - "Managing z"

A systems management tool for z/VM and Linux

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Agenda

- Introductions
- One question
- Why? What? Who? and How?
- Why Open source?
- Function provided
- Command line vs. Web interfaces
- Documentation
- One more question
- Demonstration

Introductions

- Who am I?
  - Michael MacIsaac
  - 26 years at IBM
  - Lots of different jobs
- Who are you?
  - Who has tried Mz?
  - To do z/VM and Linux systems management:
    - Do you *"roll your own"*?
    - Use a single encompassing tool?
    - Use some tools, some *"roll your own"*?

Virtualization Cookbook (bunny trail)

- Residency completed June 29
- Update for z/VM 6.3, SLES 11 SP3, RHEL 6.4
- Many topics added
  - Installation of Non-SSI z/VM 6.? system
  - Multipathing of FCP/SCSI disks
  - Address z/VM HYPERPAV
  - AutoYast on SLES
  - Describe VIR2REAL EXEC
  - Section on Kiwi on SLES
  - Beef up "z/VM Live Guest Relocation" chapter
  - Add section on z/VM "LOGON BY" for audit trails
  - Section on the "Linux Terminal Server"
  - Add a CRON Service Virtual Machine for z/VM
  - Define command-specific z/VM privilege class
  - Red Hat Sattelite server
  - SLES "Live CD" installation (???)
  - Example of setting up hipersockets to z/OS

One question

- Q. Is there a lightweight, free, open source, powerful, fast, intuitive, solid, well-tested systems management tool for z/VM and Linux?

One question

- Q. Is there a lightweight, free, open source, powerful, fast, intuitive, solid, well-tested systems management tool for z/VM and Linux?
- A. Absolutely not!

One question

- Lightweight?
- Free?
- Open source?
- Powerful?
- Fast?
- Intuitive?
- Solid?
- Well-tested?

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Why? What? Who? and How?

- To solve the business problem of ***virtual server sprawl***
- To build the *foundation* before the *storefront*
  - 2 interns, summer of '08
- To prototype real-world requirements:
  - "No root login"
  - RPM history/reporting
  - OVF reference implementation
  - Device conflicts/reporting
  - Start and stop Linux (not poweron, poweroff)
  - z/VM health screen
- To help you the customer solve your IT needs and be successful

Why? What? Who? and How?

- What is Mz?
  - Mz ("Managing z") is a lightweight set of Linux bash scripts that provide both a command line and a Web interface for systems management of z/VM and Linux. These scripts work well between LPARs and CECs.

Why? What? Who? and How?

- What is Mz?
  - A systems management tool on z that is:
    - agentless, daemonless, databaseless, stateless
  - A tool with commands of the form **mz<verb><object>**
    - Linux verbs: **mk** (make), **ls** (list), **rm** (remove), etc
    - Objects: **server, client, tree, appliance, monitordata**, etc.
  - A tool with the Linux file system as its database
  - A tool that crosses CECs and LPARs with TCP/IP and SSH
  - Allow pings, copies and commands to all Linuxes in parallel
  - Command-line-centric, with a growing Web interface
  - Able to support 1st, 2nd and 3rd level Linux systems
  - A "poor man's" backup and monitoring tool

What? (cont'd)

CEC 1

LPAR 1 - z/VM	LPAR 2 - z/VM
Virtual Machine 1 Linux	Virtual Machine 4 Linux
Virtual Machine 2 Linux	Virtual Machine 5 Linux
Virtual Machine 3 Linux	Virtual Machine 6 Linux

CEC 2

LPAR 3 - z/VM	LPAR 4 - z/VM
Virtual Machine 7 Linux	Virtual Machine 9 Linux
Virtual Machine 8 Linux	Virtual Machine 10 Linux

What? (cont'd)

CEC 1

LPAR 1 - z/VM	LPAR 2 - z/VM
Virtual Machine 1 Administrative Linux	**Virtual Machine 1 Administrative Linux**
Virtual Machine 2 Linux	Virtual Machine 5 Linux
Virtual Machine 3 Linux	Virtual Machine 6 Linux

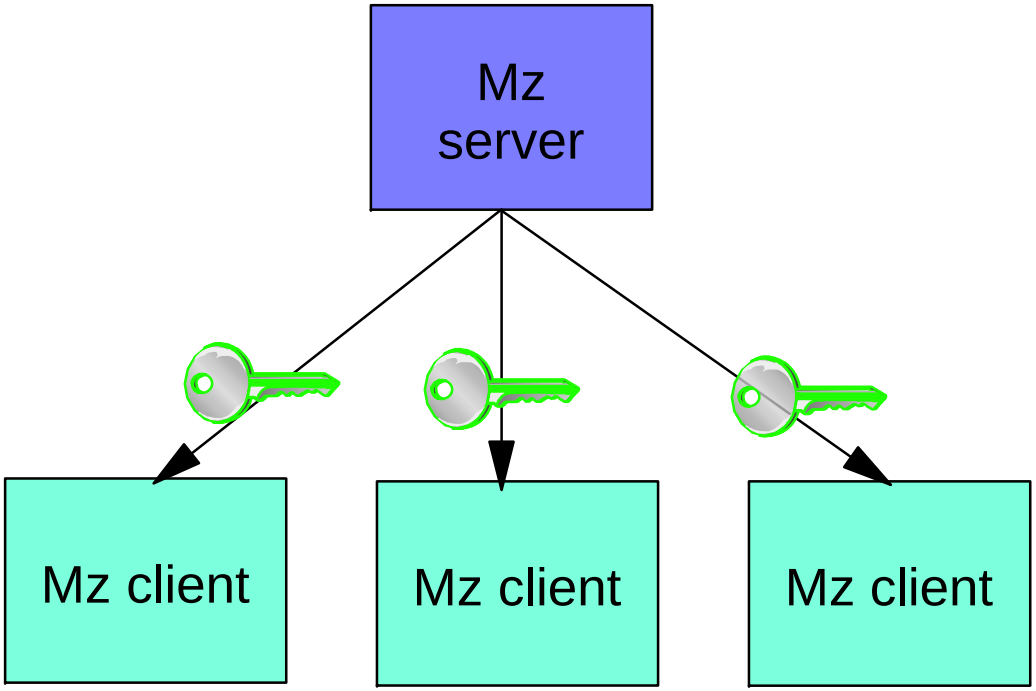
CEC 2

LPAR 3 - z/VM	LPAR 4 - z/VM
Virtual Machine 1 Administrative Linux	**Virtual Machine 9 Administrative Linux**
Virtual Machine 8 Linux	Virtual Machine 10 Linux

What? (cont'd)

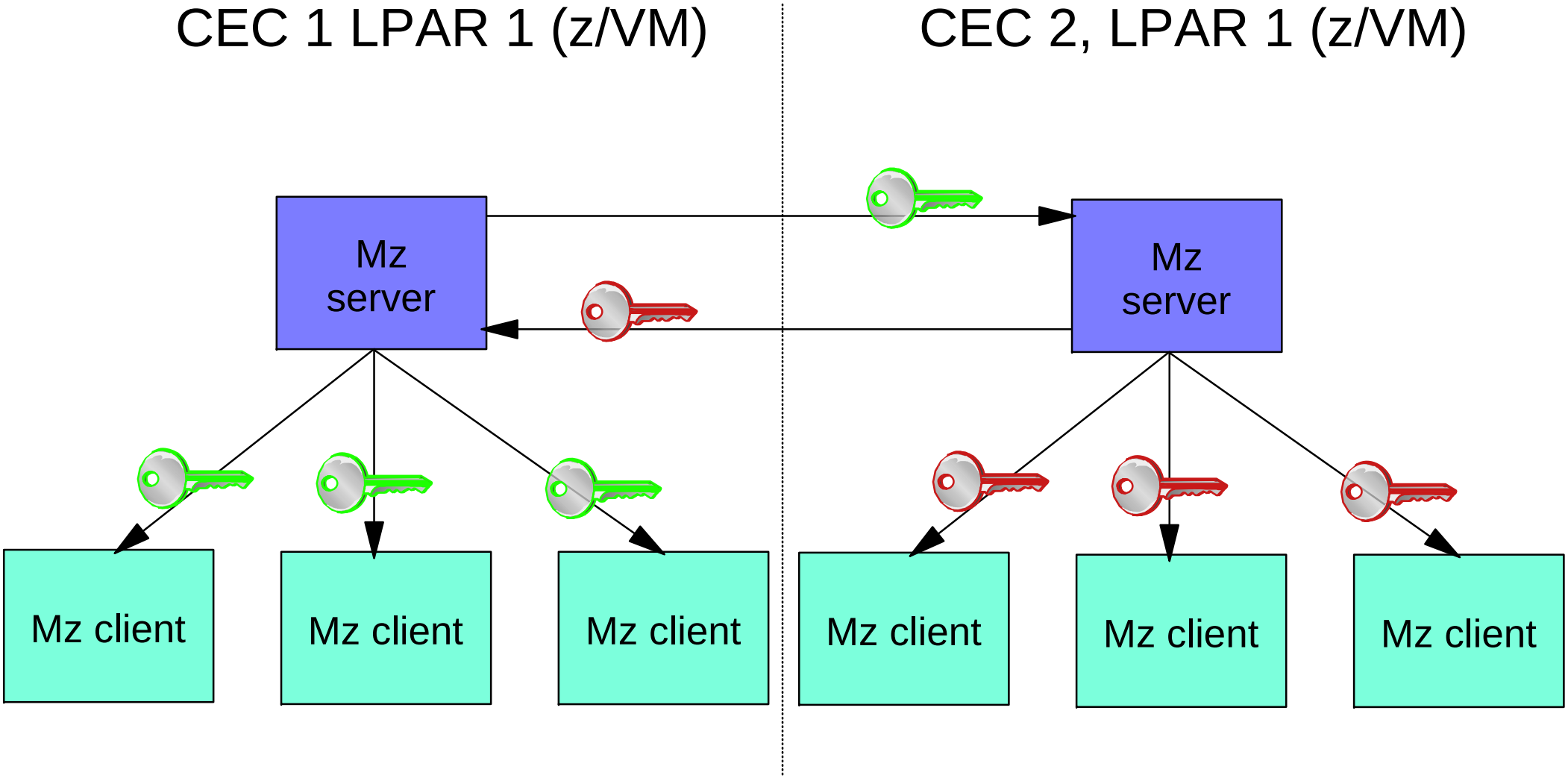
An Mz "server"

CEC 1 LPAR 1 (z/VM)

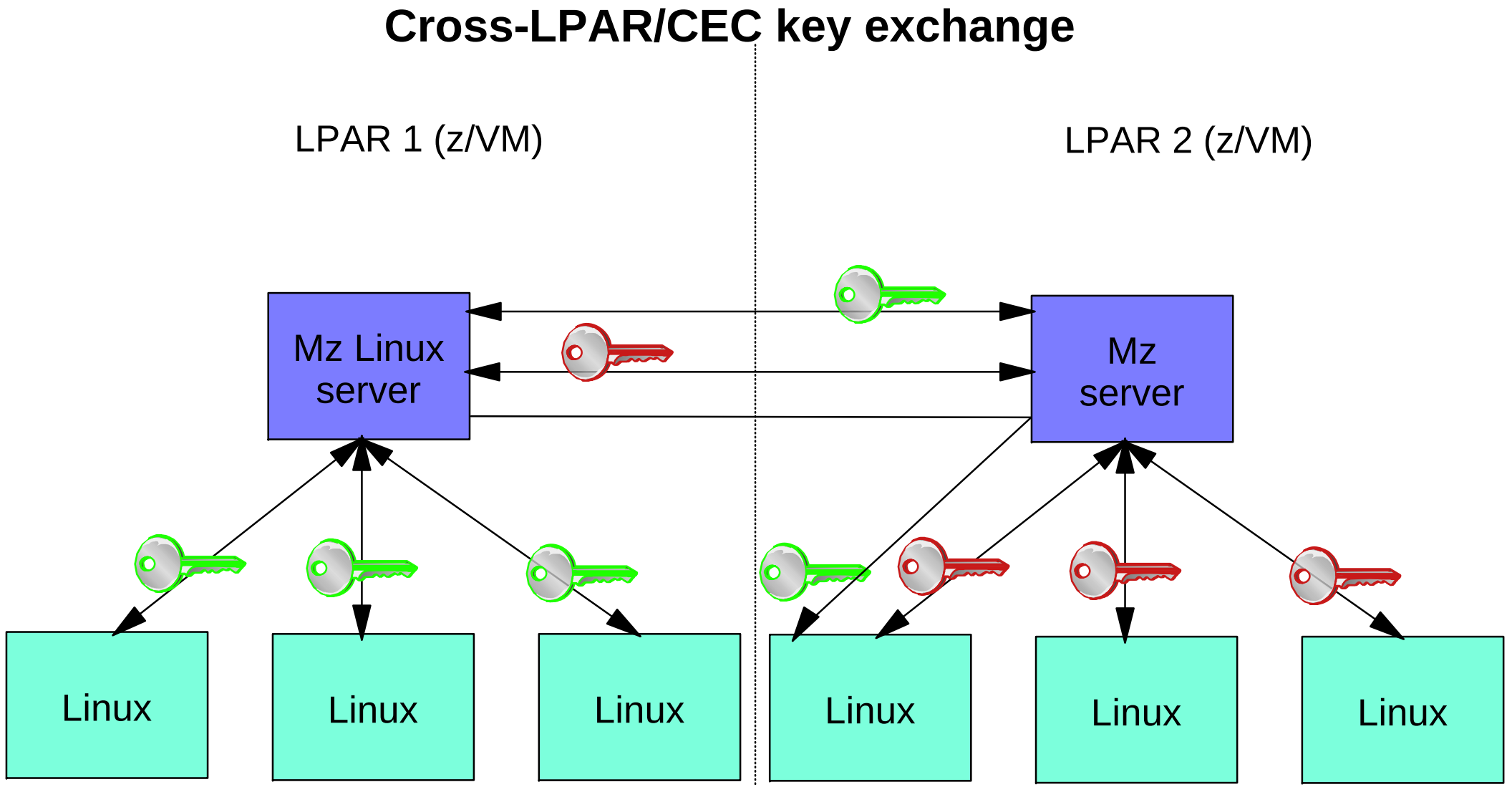


What? (cont'd)

An Mz "cluster"



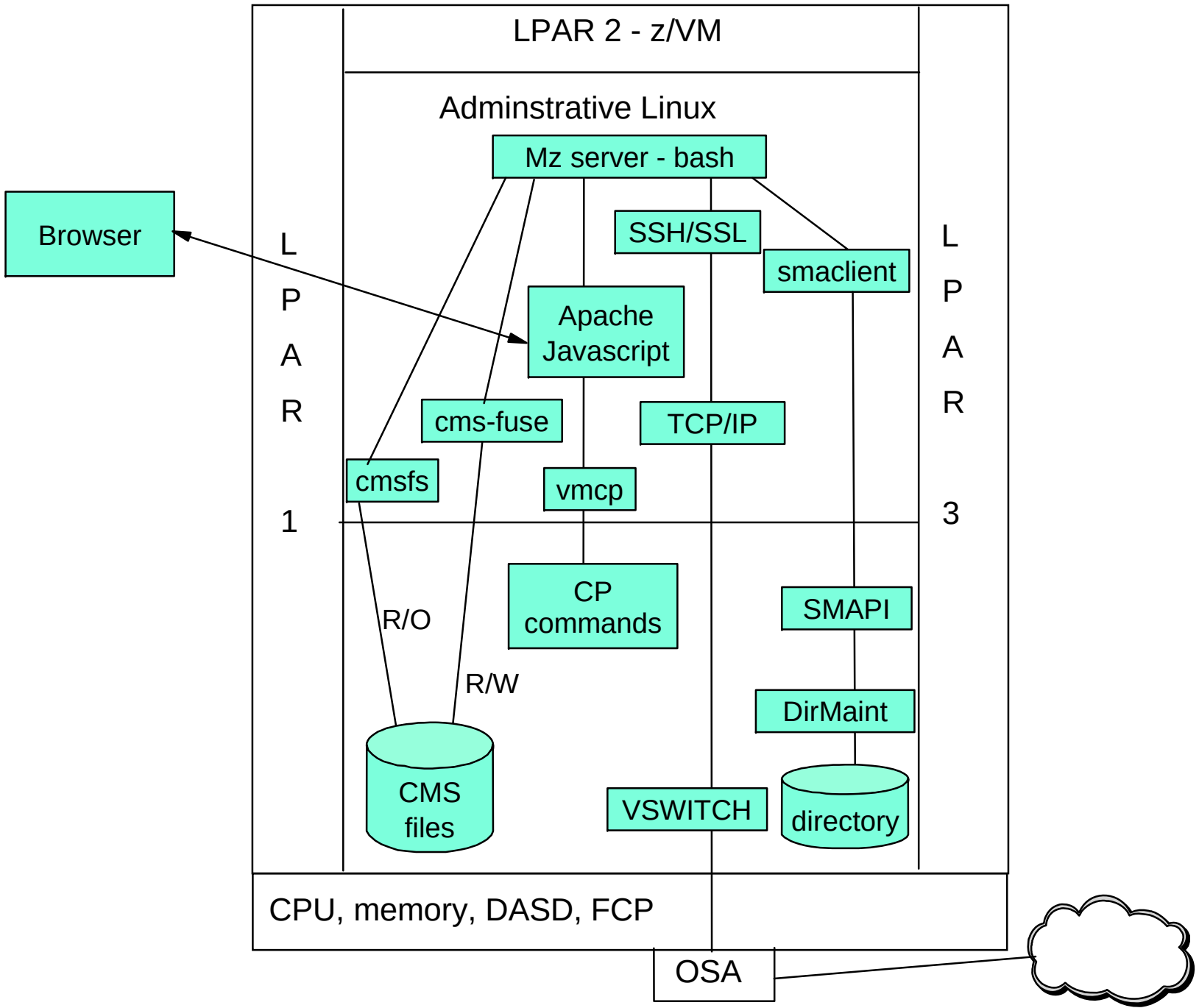
What? (cont'd)


Cross-LPAR/CEC key exchange
LPAR 1 (z/VM)
LPAR 2 (z/VM)
Mz Linux server
Mz server
Linux
Linux
Linux
Linux
Linux
Linux

Why? What? Who? and How?

- Coders
  - Myself
  - Marian Gasparovic
  - Two others (mentioned in the PDF)
- Collaborators
  - Carlos Ordonez
  - Alan Altmark
- Supporters
  - many (mentioned in the PDF)

Why? What? Who? and How?



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Why open source?

- It's the best software development model
  - Linux is the only cross-IBM-platform operating system (QED)
- To be able to "Release early, release often"
- To enable community contribution
- To be sure it's the best model:
  - Document reasonably well
  - Don't put out crap code
  - Don't abandon and leave dead projects

Function provided

- Captures z/VM and Linux hierarchy cross-enterprise
- Command line interface
  - Many **mz-verb-object** commands
- Web interface
  - **mzdevices**: show system devices in a table
  - **mztable**: show Linux, z/VM systems in a table
  - **mztree**: show a hierarchy of the tree
  - **mzhelp**: show a help screen
- **Description** and **owner** fields for all z/VM & Linuxes
- Capture and deploy with OVF
- *No-root* SSH support
- Monitoring
- Shared devices

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Command line vs. Web interfaces

- CLI is
  - funciton-centric for the sysadmin
- Web interface is
  - R/O except **Description** and **Owner** fields
  - Richer in drill down capabilities?

Documentation

- One manual as a PDF (~60 pages)
- Help flags
- CLI help command
- Web help page
- No man pages (yet)

One more question

- Q. Is or will Mz be cross-platform?
- A. No, possibly
- Potter's rule of systems management:
  - "The tempation in systems management is to try to abstract function and code across platforms. Resist that temptation - it is better to drill down into a platform-specifics sooner rather than later."
- However, `/var/lib/mz/systems/` could be
  - `/var/lib/mz/systemz/`
  - `/var/lib/mz/systemp/`
  - `/var/lib/mz/systemx/`
- **mzlstree** could also be **mplstree** and **mxlstree**
  - (some day, but I'm not coding it :))

Demonstration

- Network dependent...

Questions???

- Any questions?
- Reminder - Web site: http://sourceforge.net/projects/managing-z/

Mz vs. xCAT

- Both are:
  - Open source
  - CLI and "scripting" focused (bash vs. Perl)
  - SMAPI-driven, one system per z/VM LPAR
- Mz is:
  - Designed for System z
  - Not supported by IBM
- xCAT is:
  - Originally designed for System p then x
  - Supported by IBM
  - More mature
- "Mz could be helpful to xCAT as a RAD function-developing sandbox"