Leveraging VMWare ESX in Disaster Recovery Solutions

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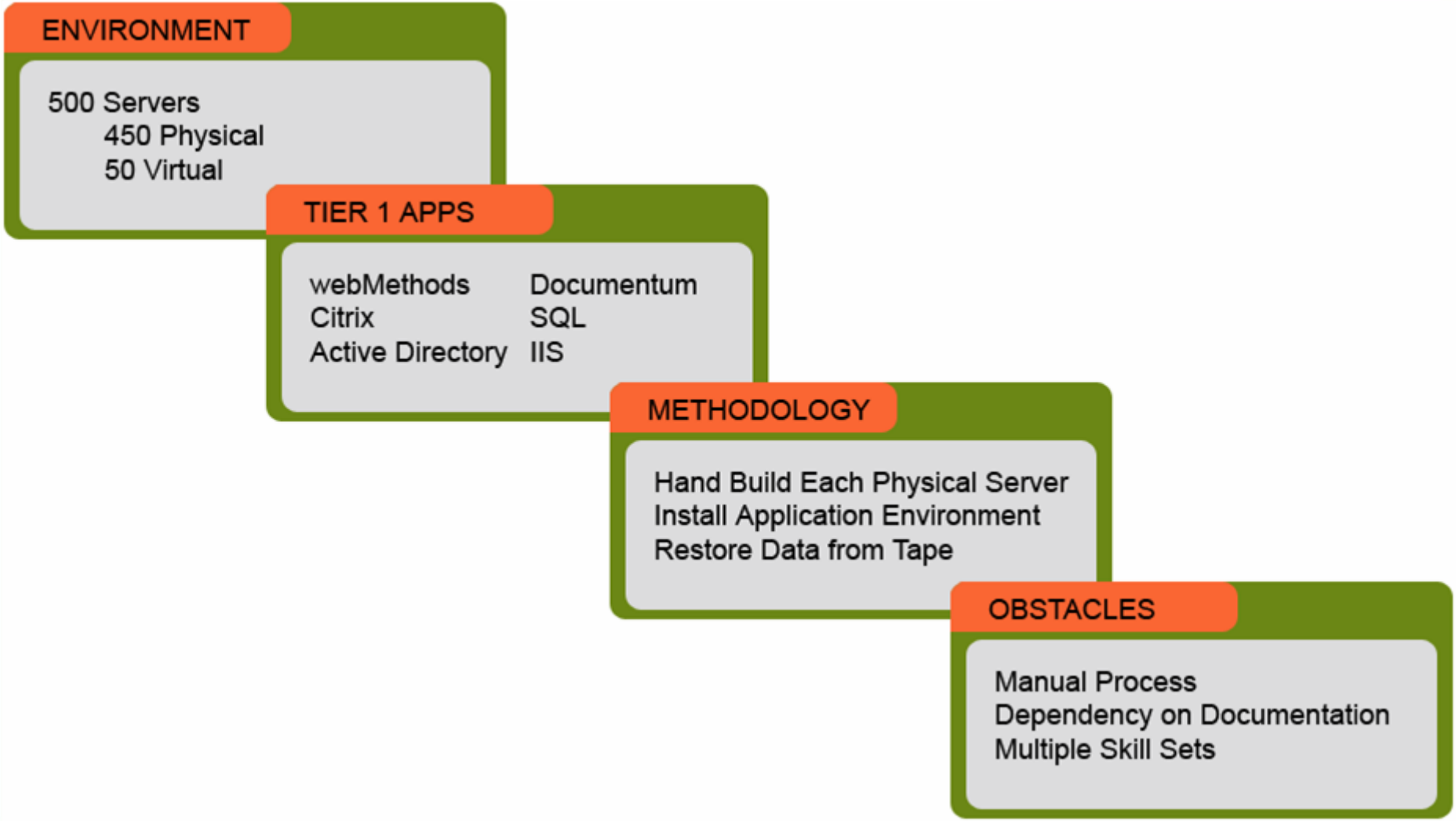
VMWORLD 2006

Benefits of Virtualization

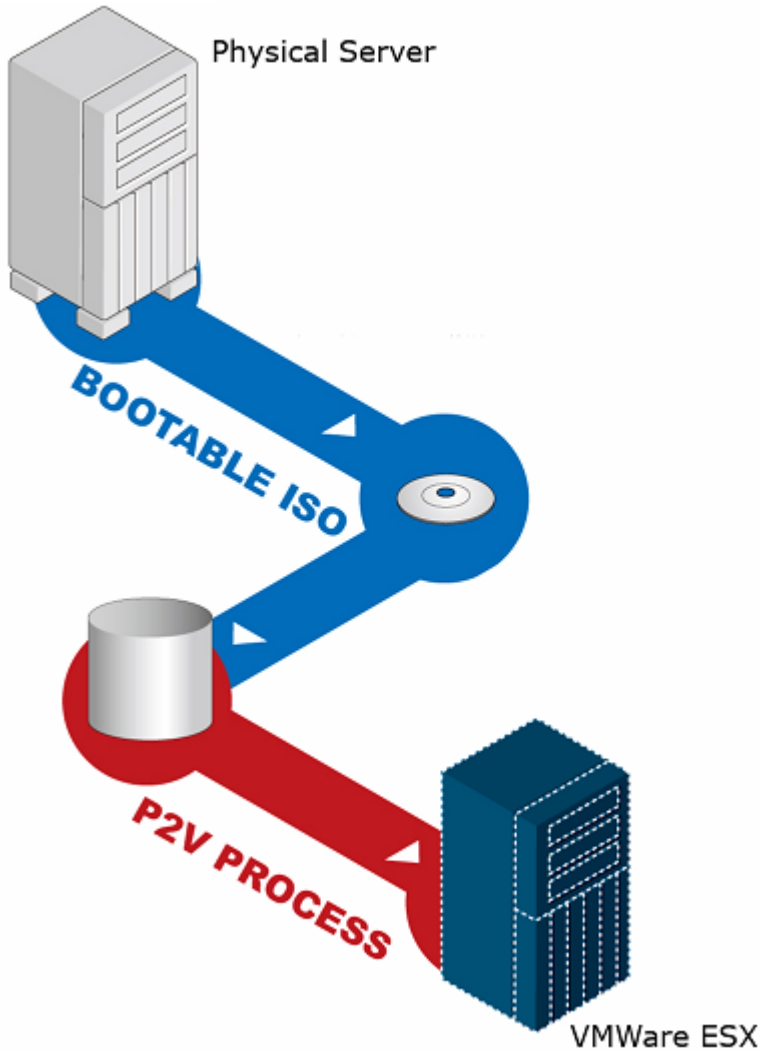
- Why Virtualization is Advantageous:
  - Portability
  - Simplification of Recovery Process
  - Decreased Recovery Time
  - Successful Recovery to Dissimilar Hardware

Case Study #1: Acme Health Services



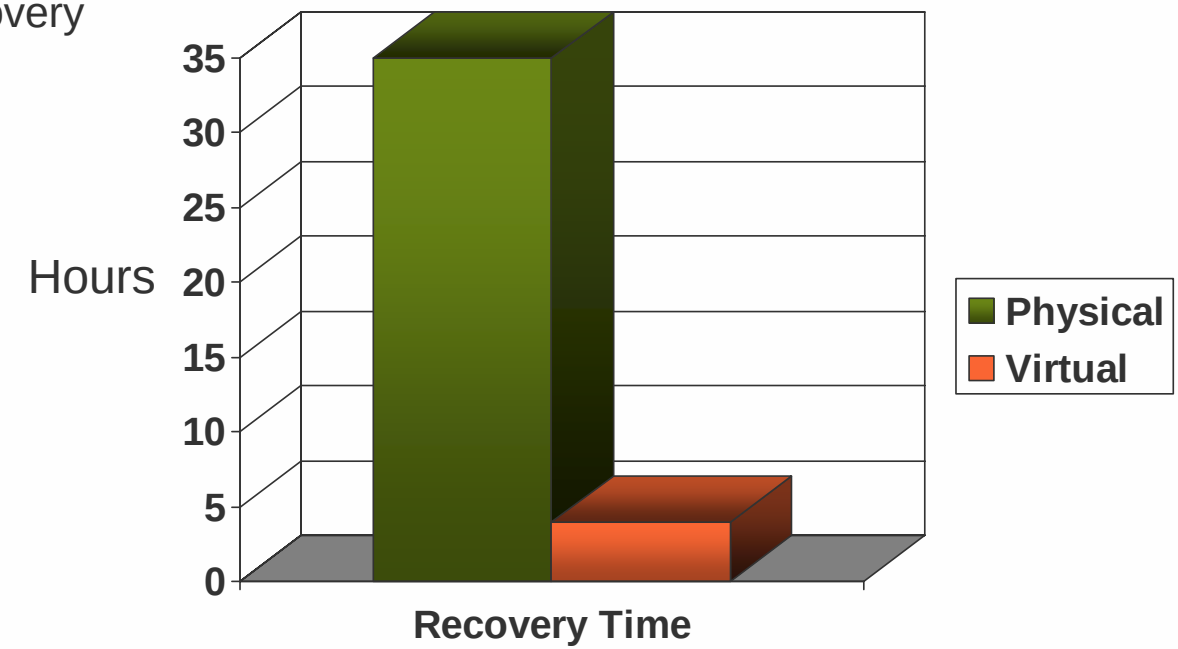
Case Study #1: Acme Health Services

- Ways to Improve
  - Virtualize Tier 1 Servers
  - Backup Virtual Machines
  - Reduce Complexity of Recovery
- Benefits of Improvement
  - Reduction in Downtime to the Business
  - Reduction in Lost Revenue
  - Decrease in Manpower Required



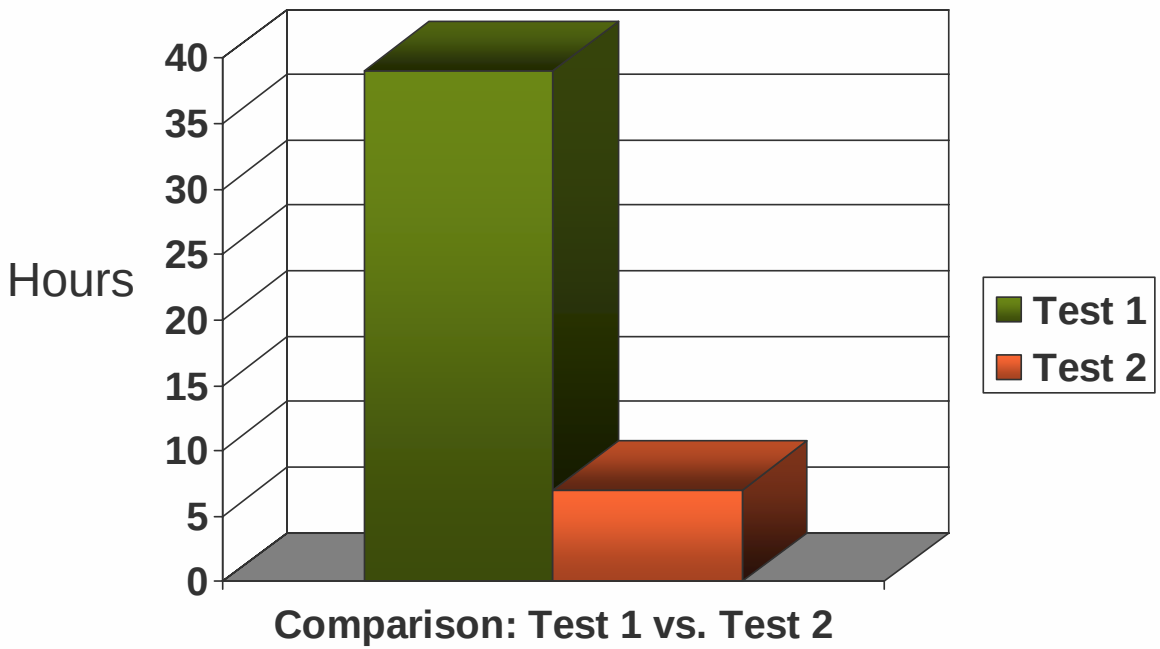
Case Study #1: Acme Health Services

- Disaster Recovery Test #1
  - Virtual Machine Domain Controllers
  - Physical versus Virtual Servers
    - Pitfalls During Physical Recovery
    - Ease of Virtual Recovery



Case Study #1: Acme Health Services

- Disaster Recovery Test #2
  - Complete Virtualized Recovery
  - ESXRanger for Recovery
  - Decreased Footprint
  - Decreased Cost



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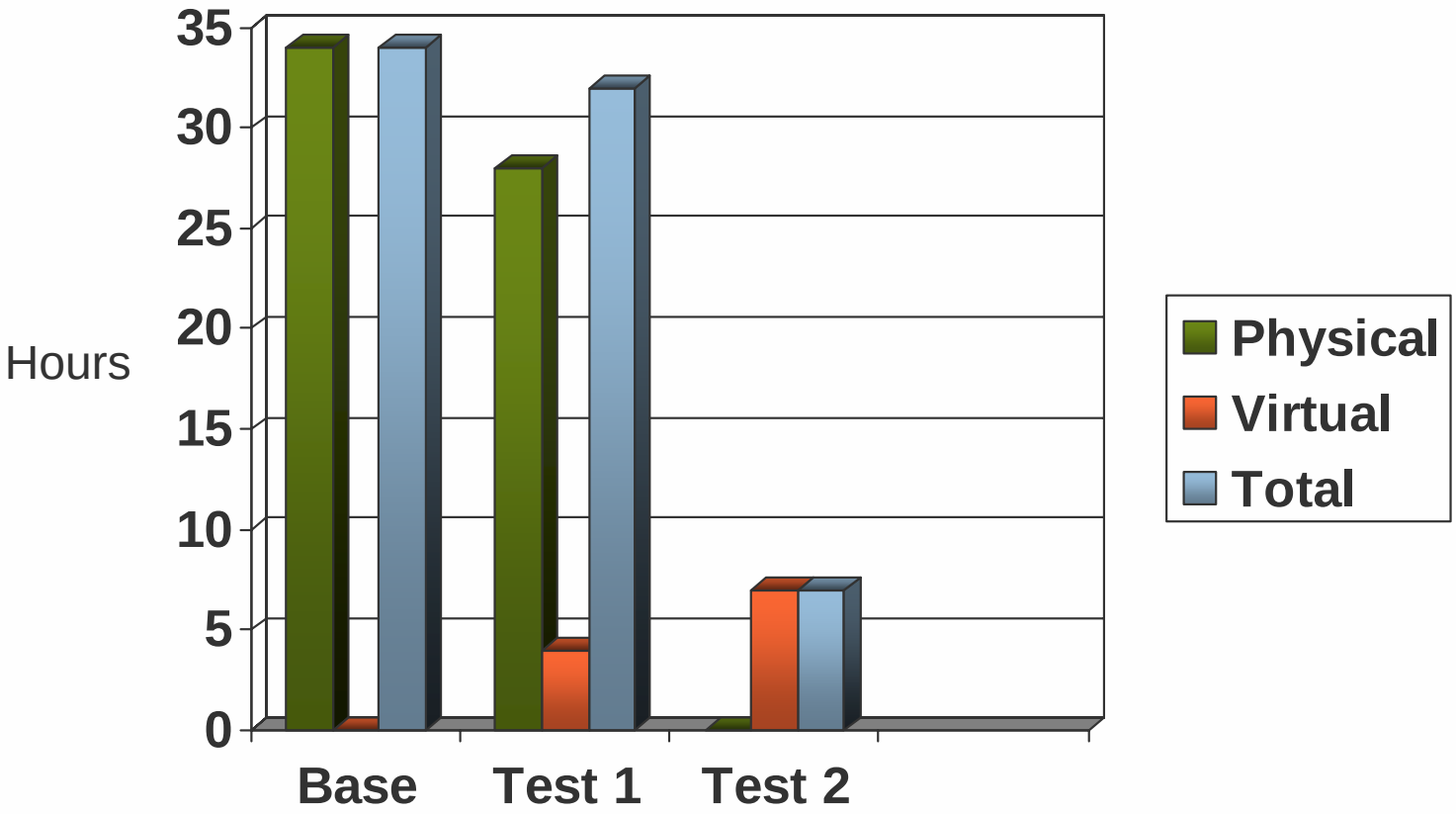
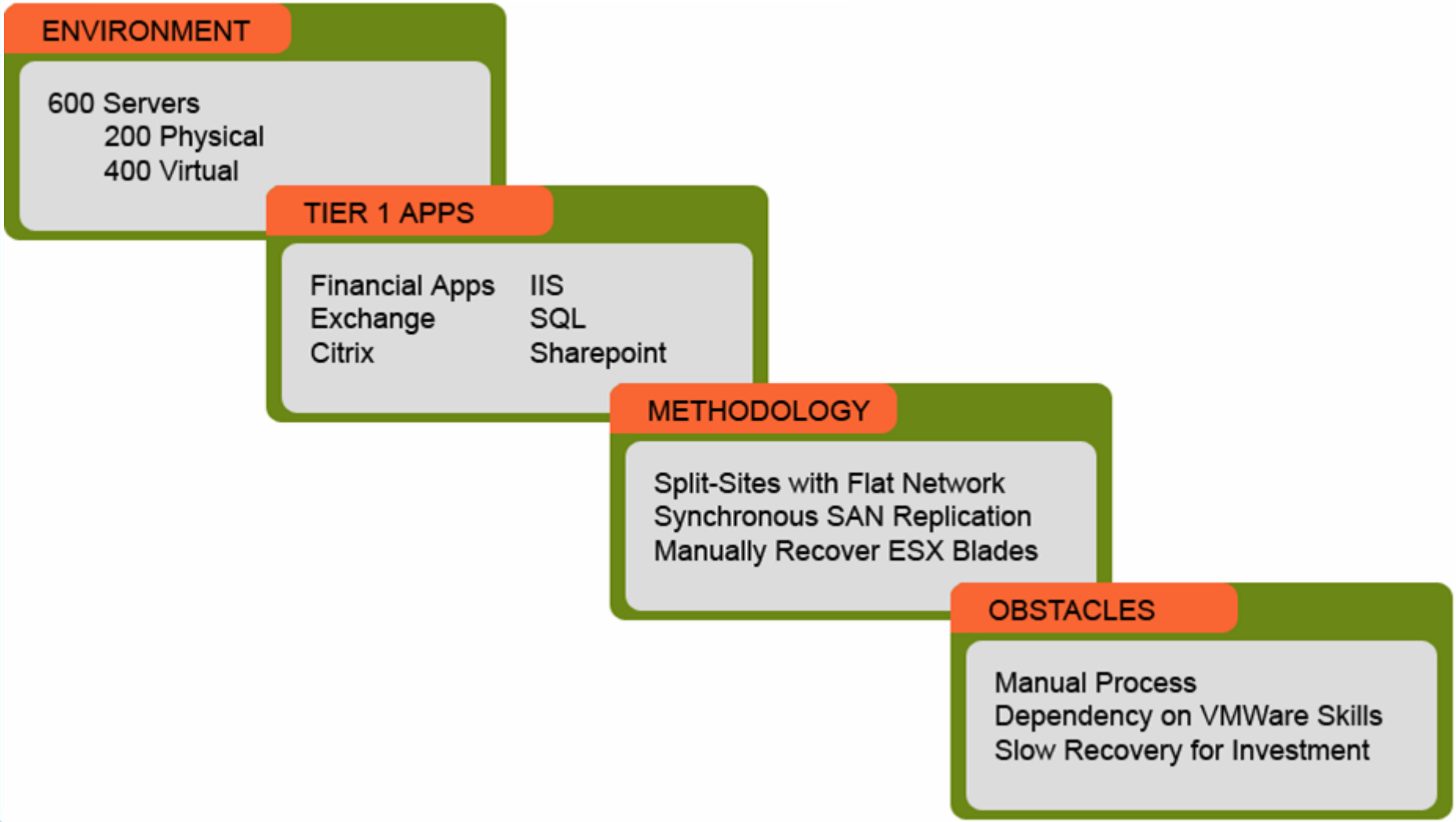


Case Study #2: Computershare



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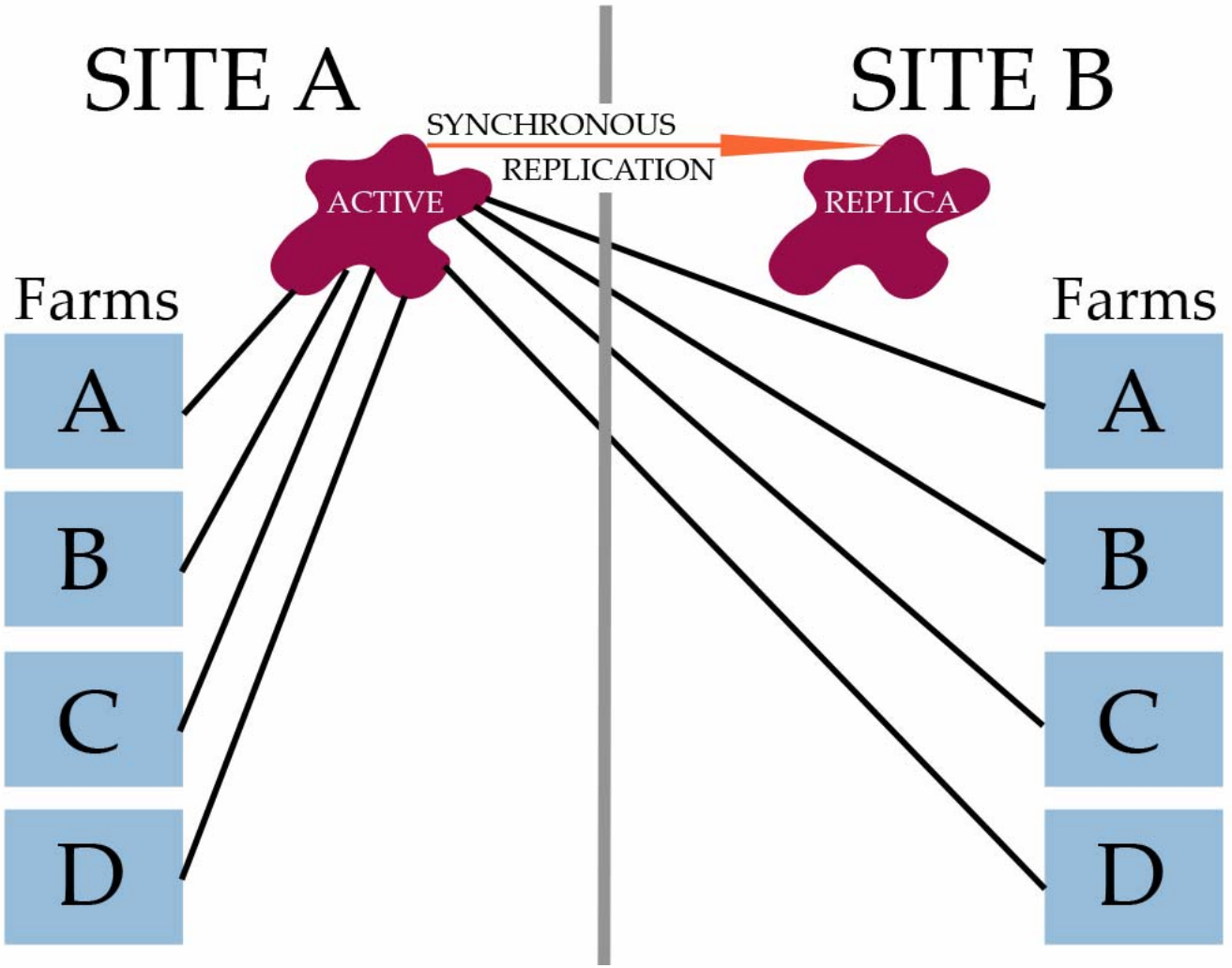


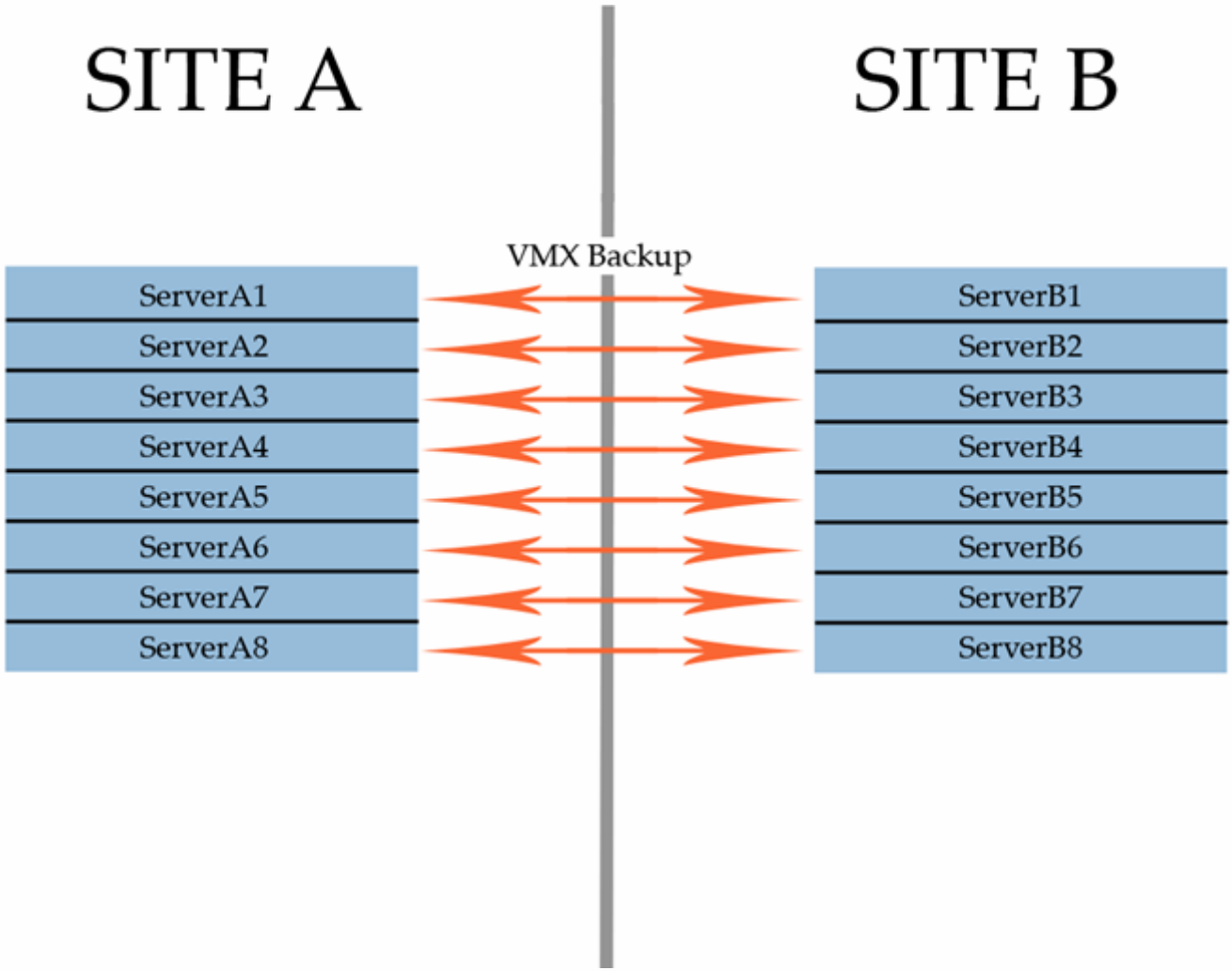
Major Types of Failure

Server

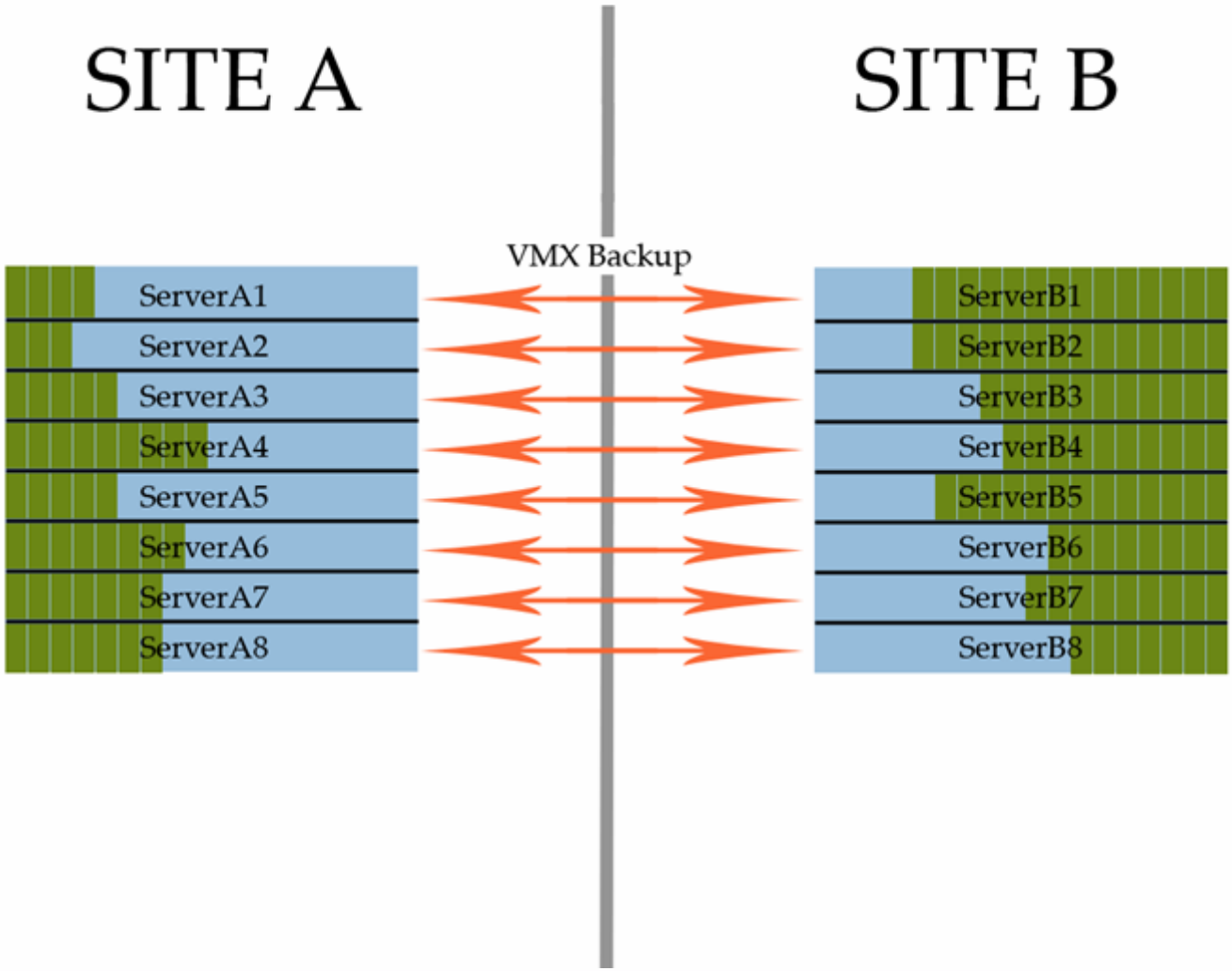
SAN

Site

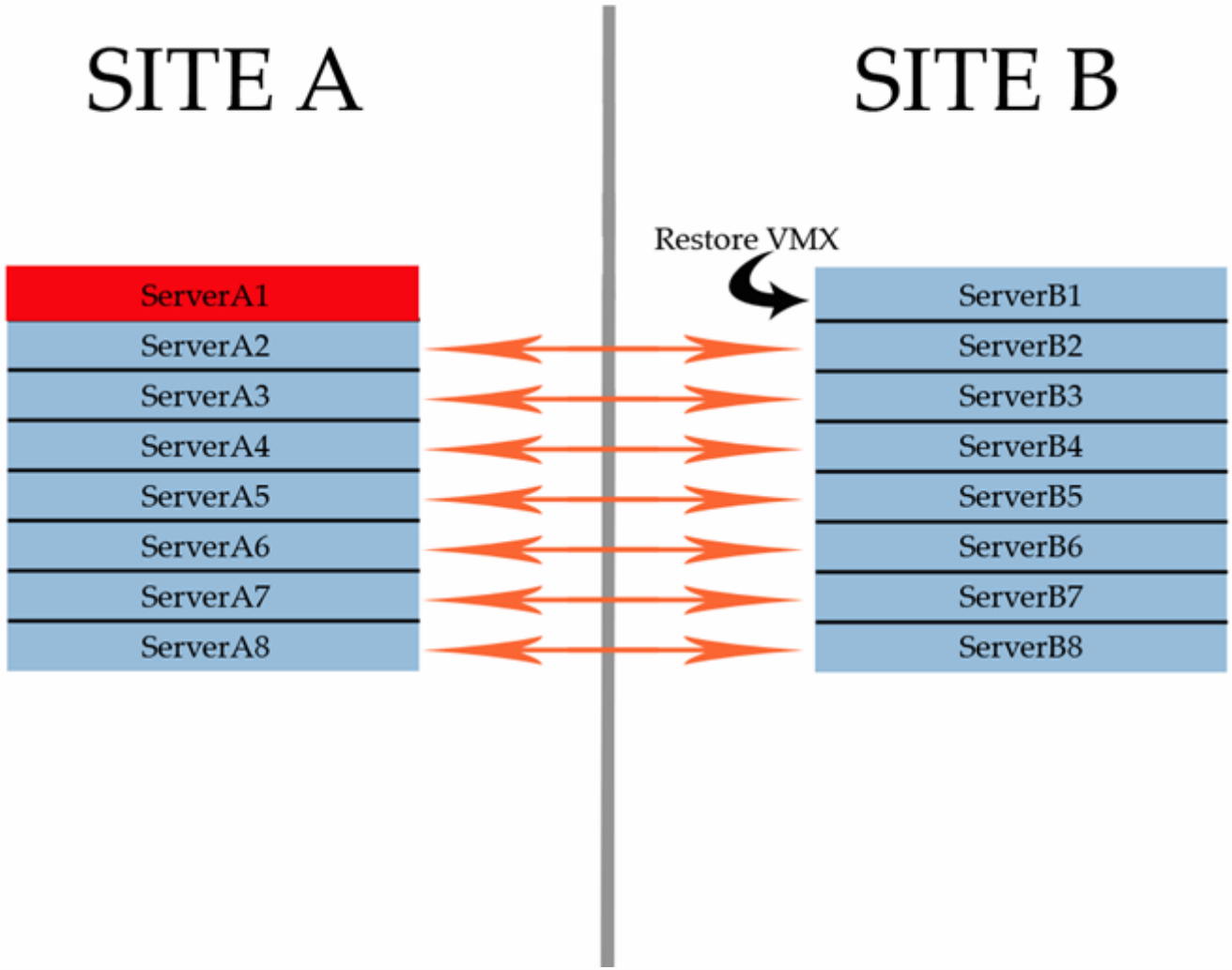
ESX Server - Online



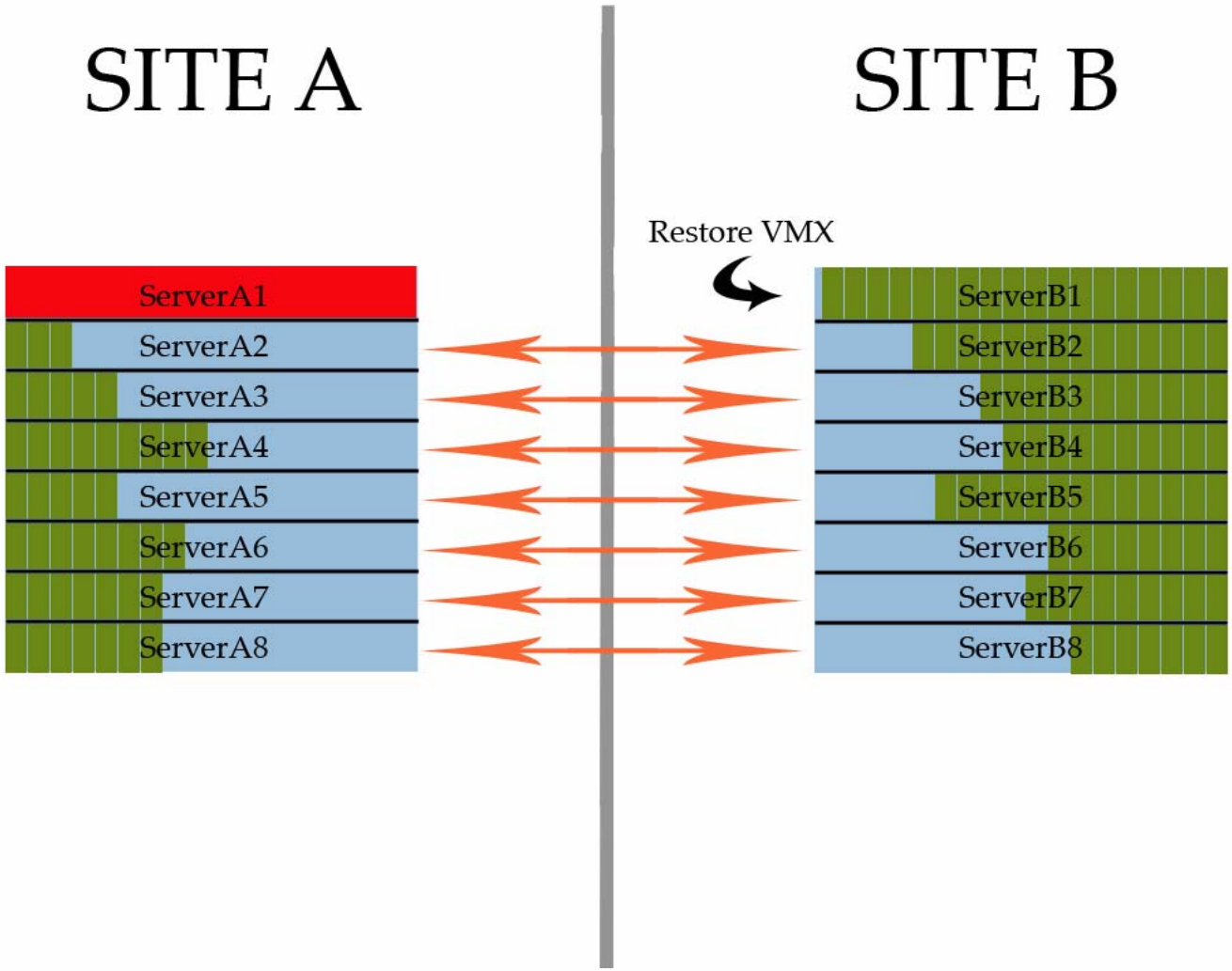
ESX Server – Resource Planning



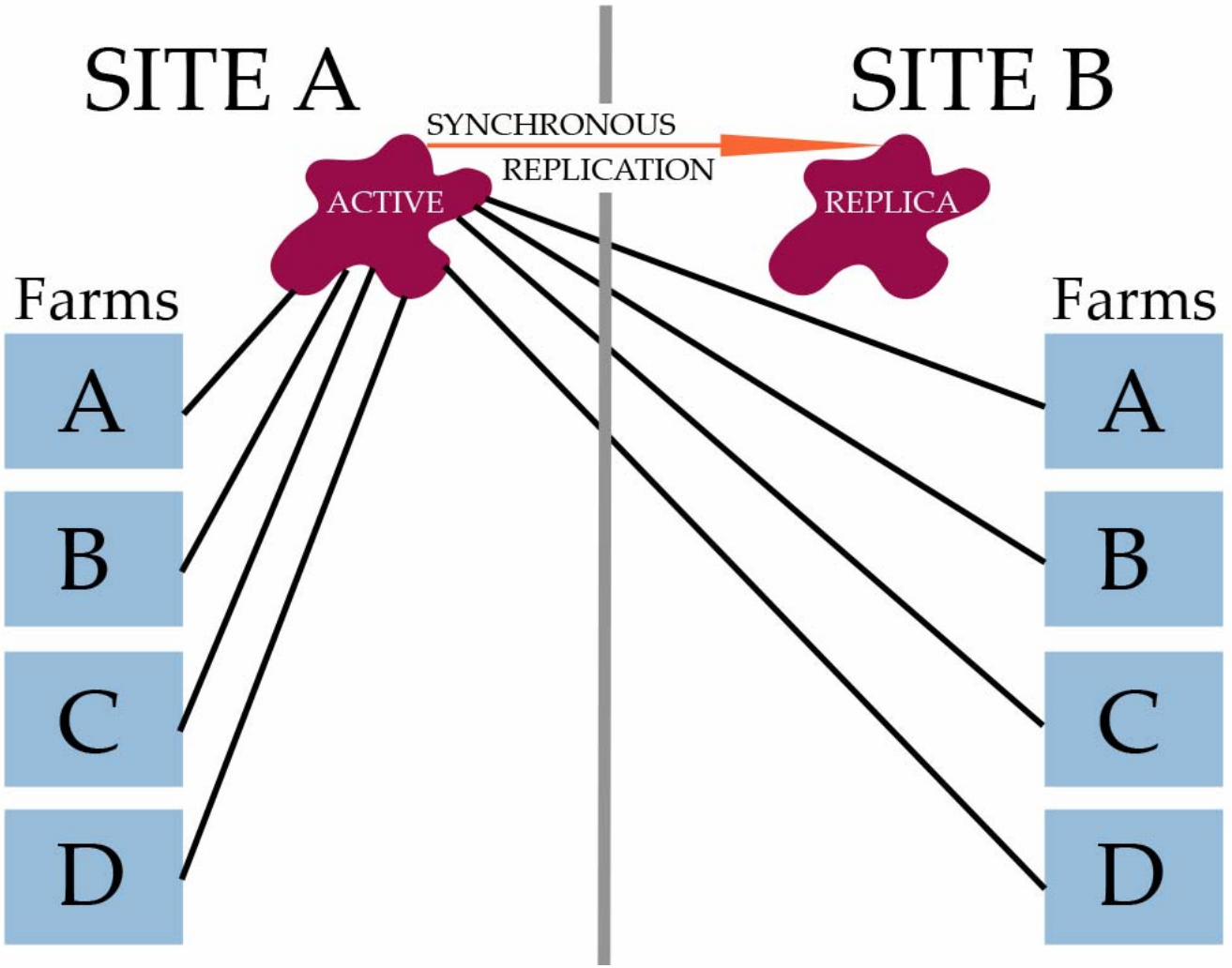
ESX Server - Failure



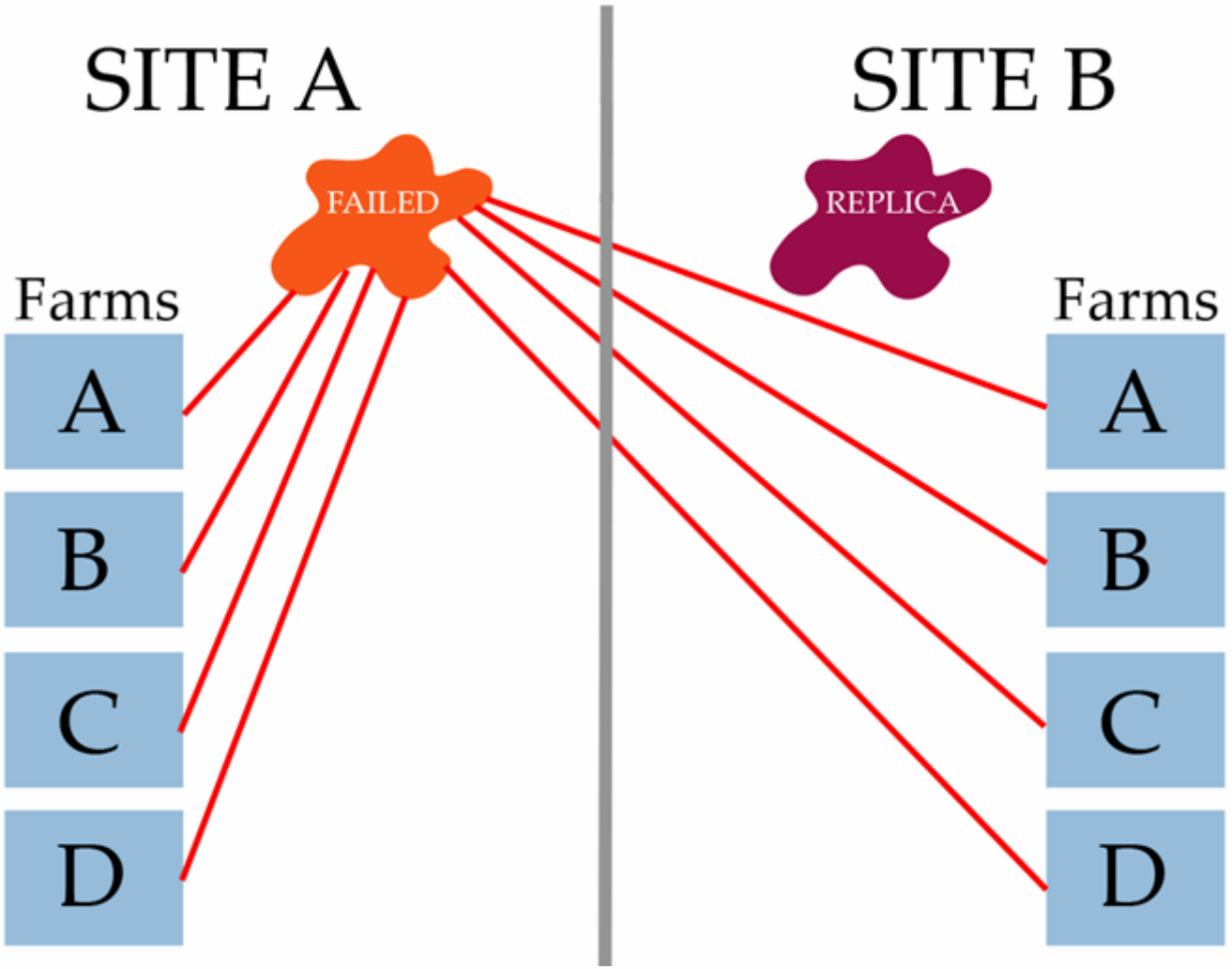
ESX Server - Recovery



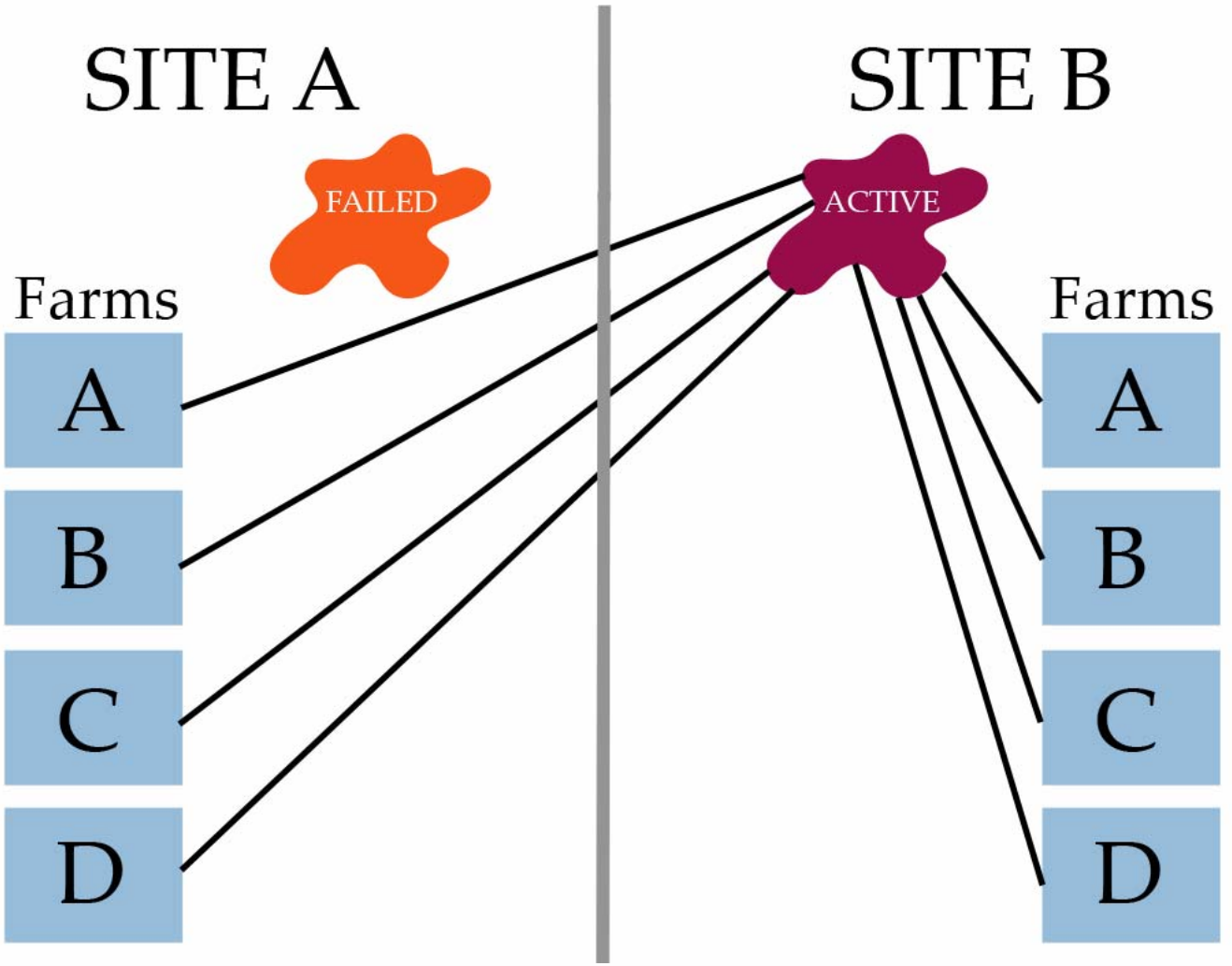
SAN – Online


SITE A
SITE B
SYNCHRONOUS
REPLICATION
ACTIVE
REPLICA
Farms
A
B
C
D
Farms
A
B
C
D

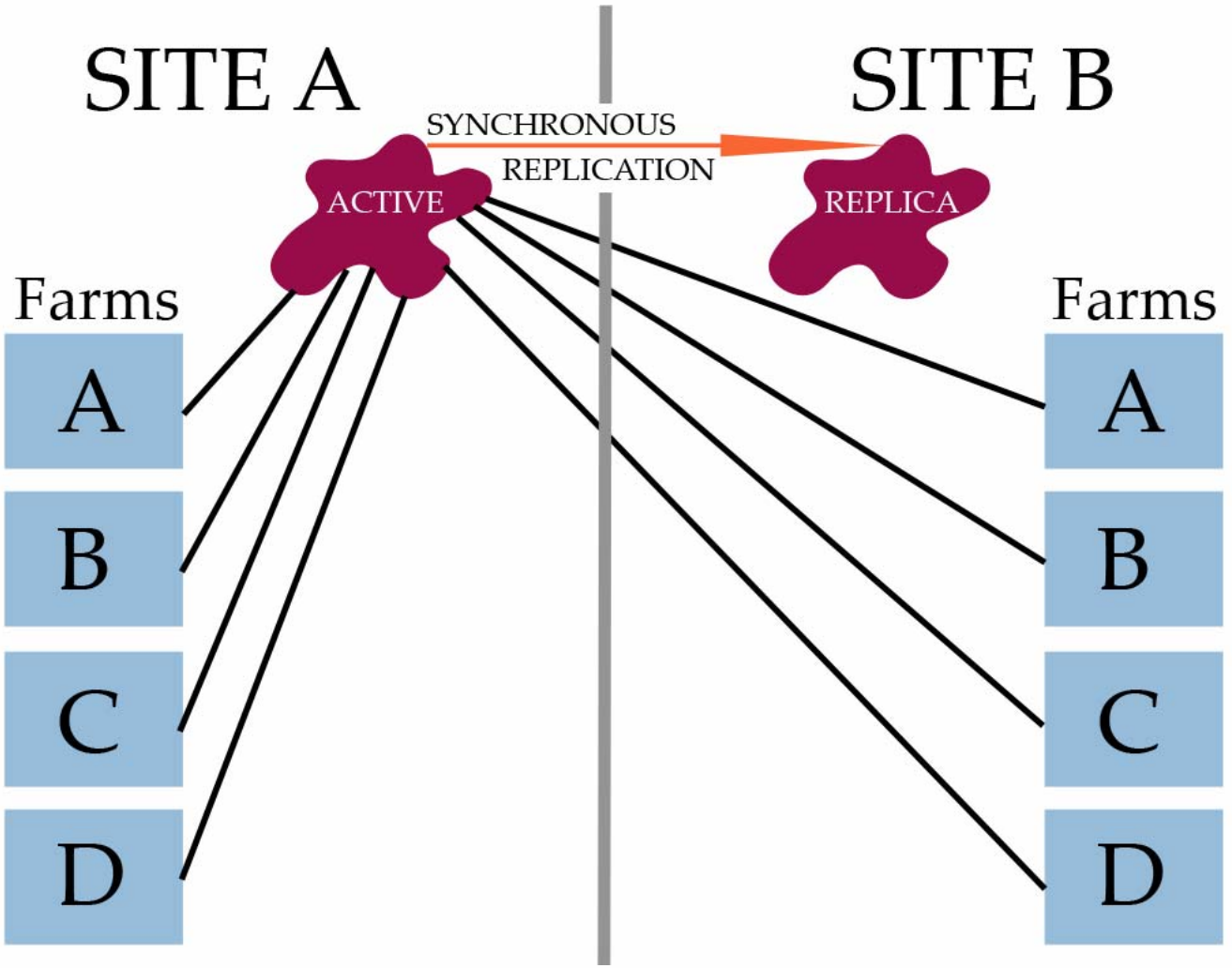
SAN - Failure



SAN - Recovery



Site – Online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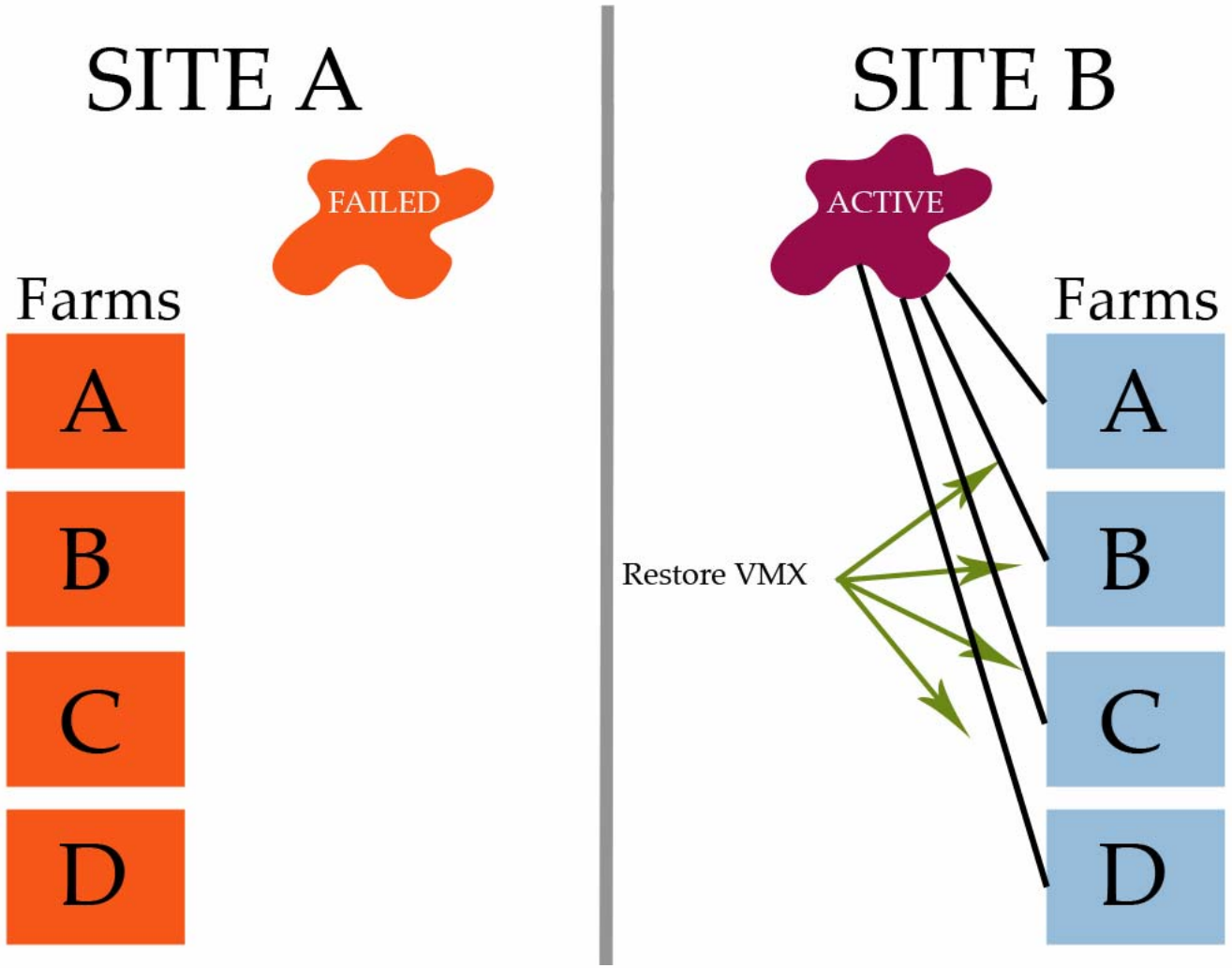
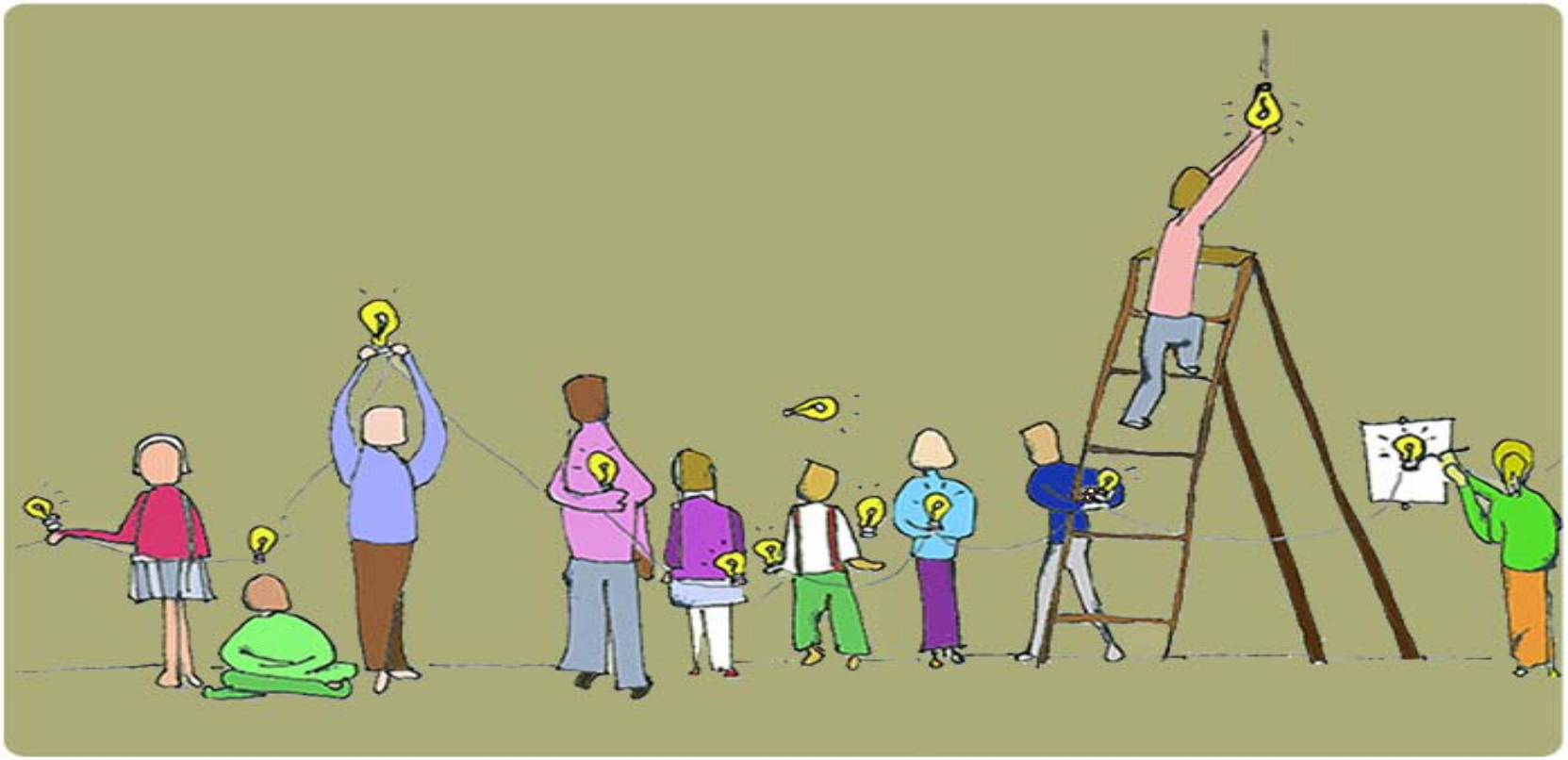
Site – Recovery



Ways to Improve Recovery Process

- Scripting Automation
- Extend Recovery Capacity



Scripting Your Solution

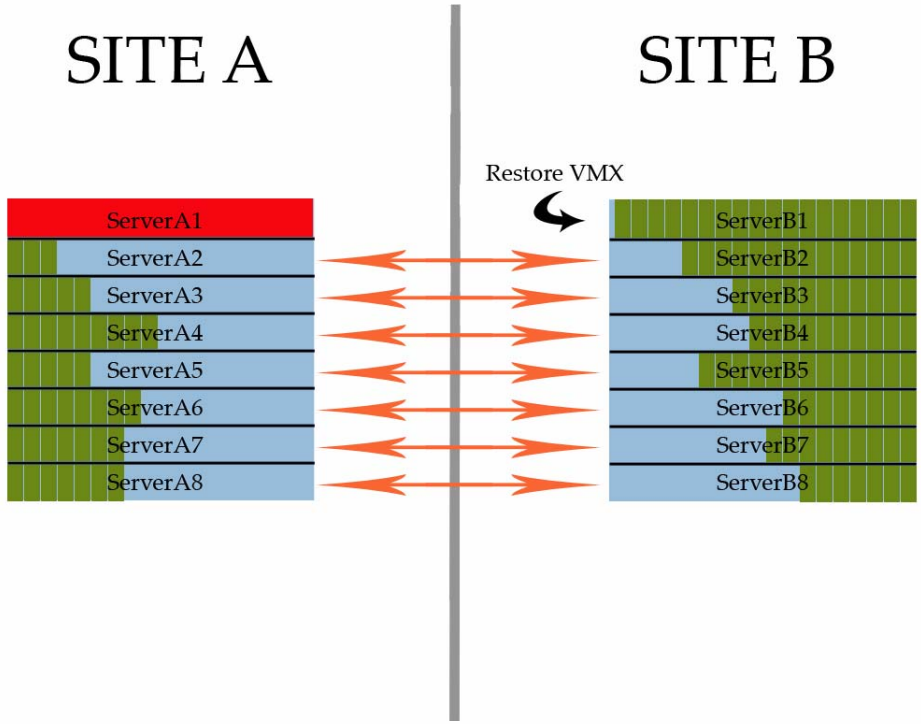
- Dancer's Shell (DSH)
  - Powerful Wrapper that Allows Multiple SSH Connections
  - Run One Command on Multitude of Servers
  - Group Based
  - Consecutive or Concurrent Execution

Configuring DSH

- Download DSH Distribution and Libdshconfig
  - dsh_0.25.4-1_i386.deb
  - libdshconfig1_0.20.11-1_i386.deb
- Install Packages
- Create Groups
- Establish Secure Key Pairs
- Syntax:
  - dsh –g *groupname* –M –r ssh – *command*
  - E.G.
    - dsh –g farma –M –r ssh – service ntpd restart
    - dsh –g farmb -c –M –r ssh – cos-rescan.sh vmhba1

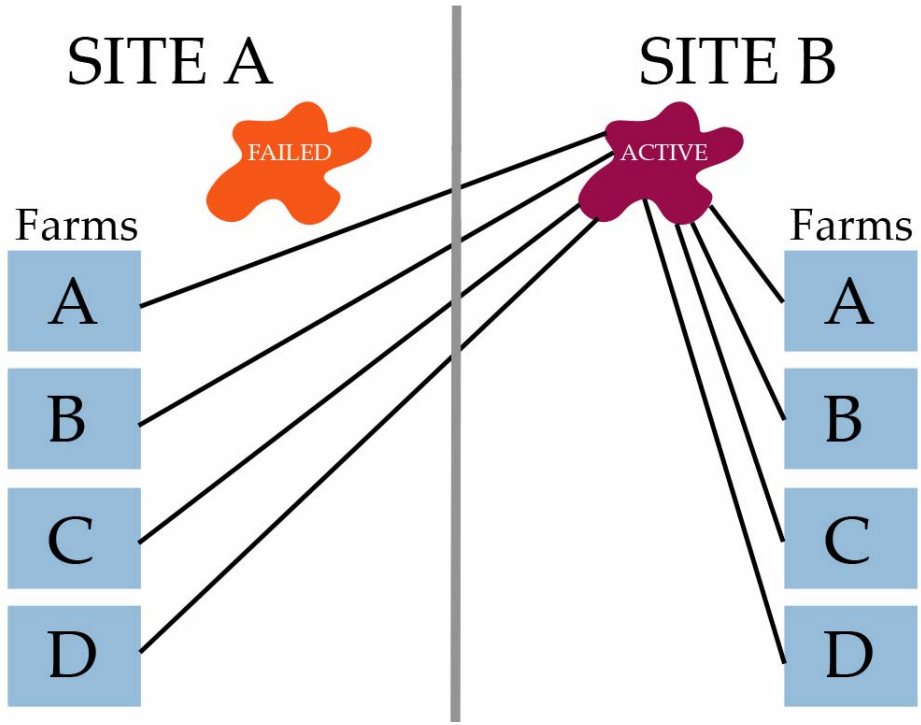
Scripting Your Solution

- Server Failure
  - Extract VMX Files
  - Register Virtual Machines
  - Power On Virtual Machines
  - Answer Questions
  - **Execution Time ~30 Seconds**



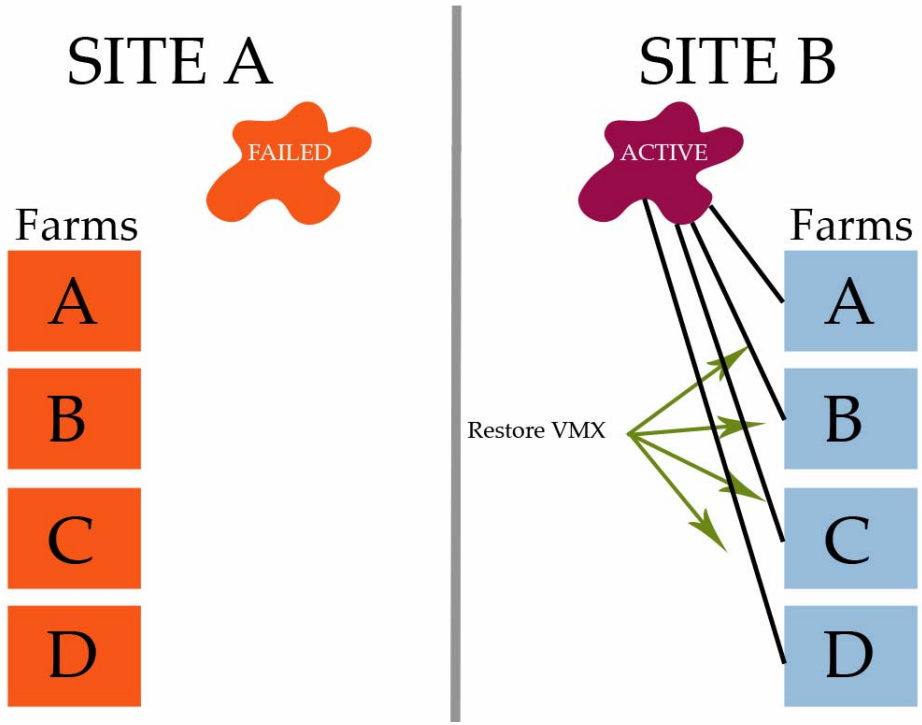
Scripting Your Solution

- Storage Failure
  - Rescan both HBAs per Server
  - **Execution Time ~2 Minutes**



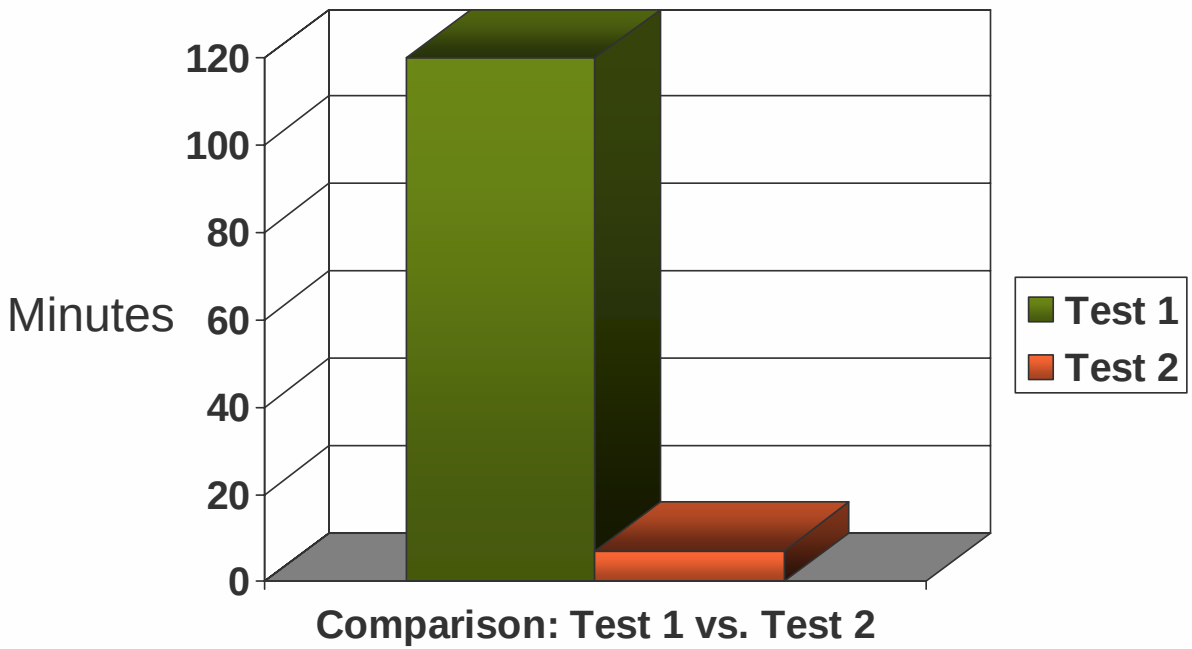
Scripting Your Solution

- Site Failure
  - Rescan HBAs
  - Verify LUN Connectivity
  - Extract VMX Files
  - Register Virtual Machines
  - Power On Virtual Machines
  - Answer Questions
  - **Execution Time ~4 Minutes**



Case Study #2: Computershare

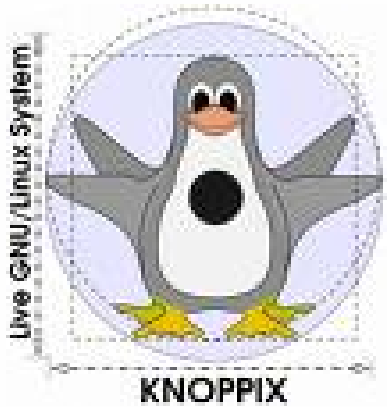
- Disaster Recovery Test #2
  - Completely Scripted Recovery



Virtual Appliances

- Pre-Built
- Pre-Configured
- Portable
- Self Contained

Nagios®

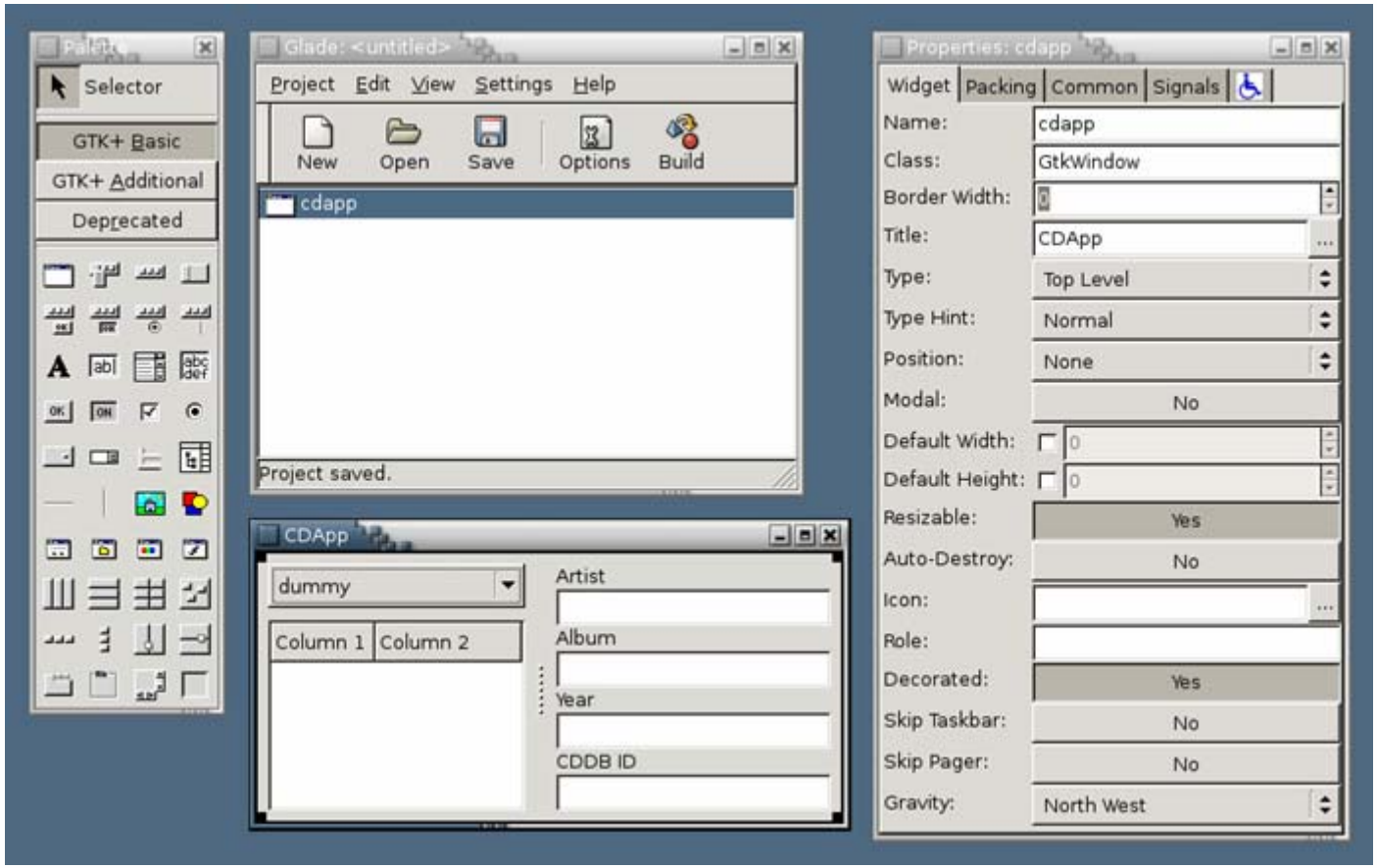


Virtual Appliances

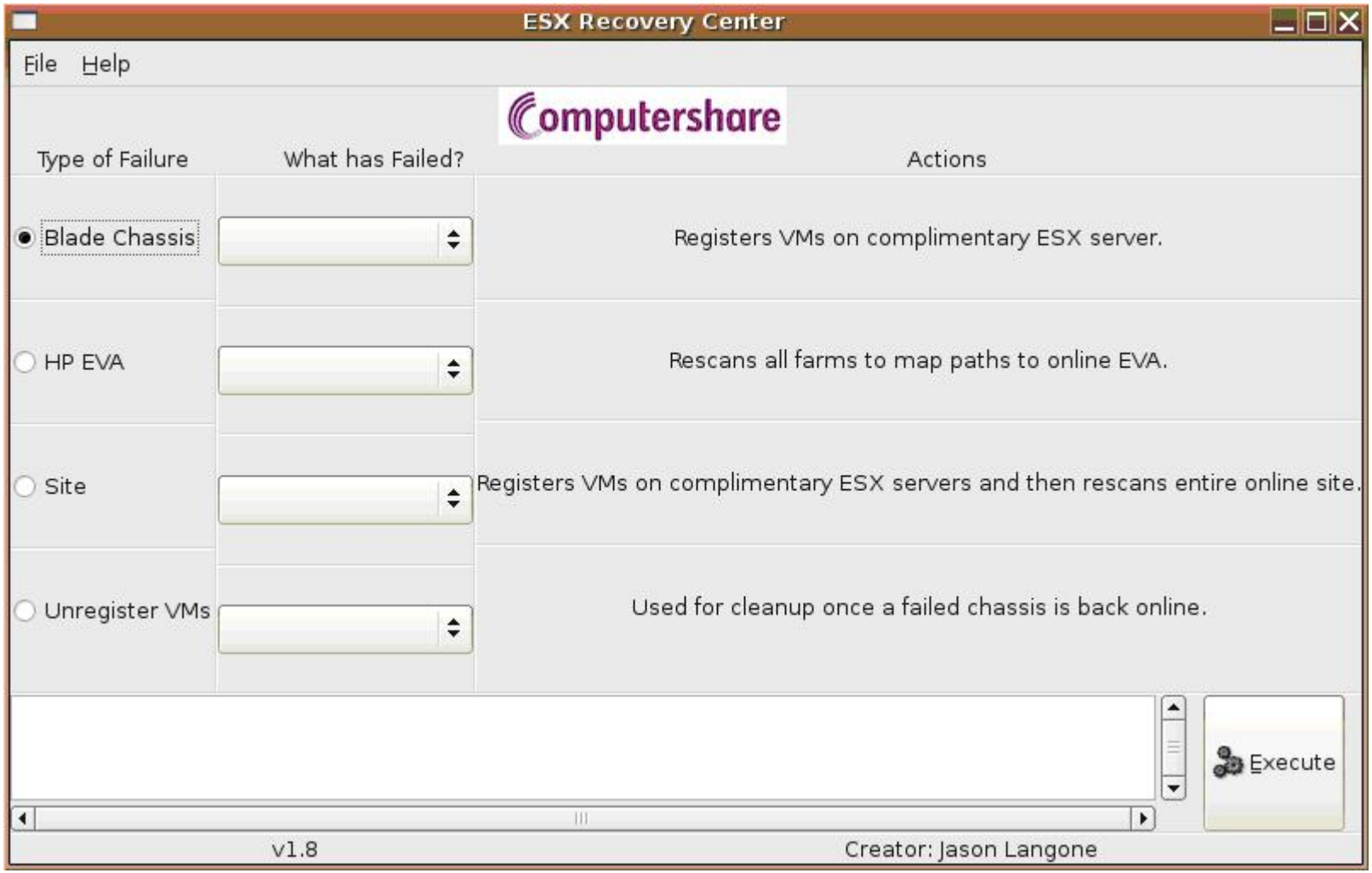
- What is Ubuntu?
  - Free
  - Linux Based Operating System
  - Open Source

ESX Recovery Center

- Glade User Interface Builder



Recovery Center



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