



**SYMANTEC
ENGAGE
HONG KONG** **2010**

Simplifying management and automation in virtualized environment

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Agenda

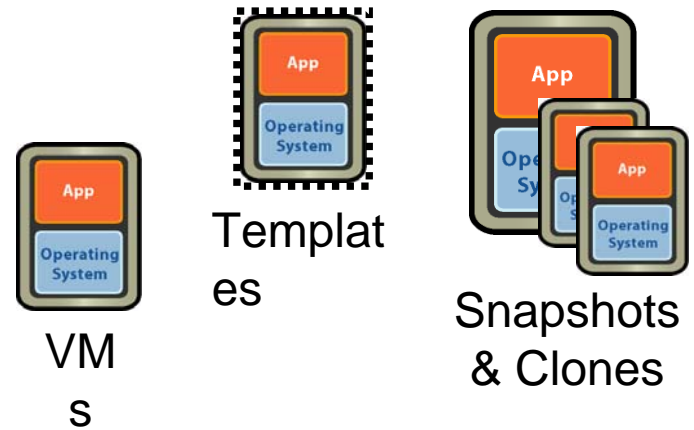
Virtualization Management

- Application Management
- Capacity Management
- Business Continuity
- Chargeback

Virtualization Fundamentally Changes the Game

- **New Considerations...**

- New items and relationships not present in physical environment
- Dynamic and fast growing environment

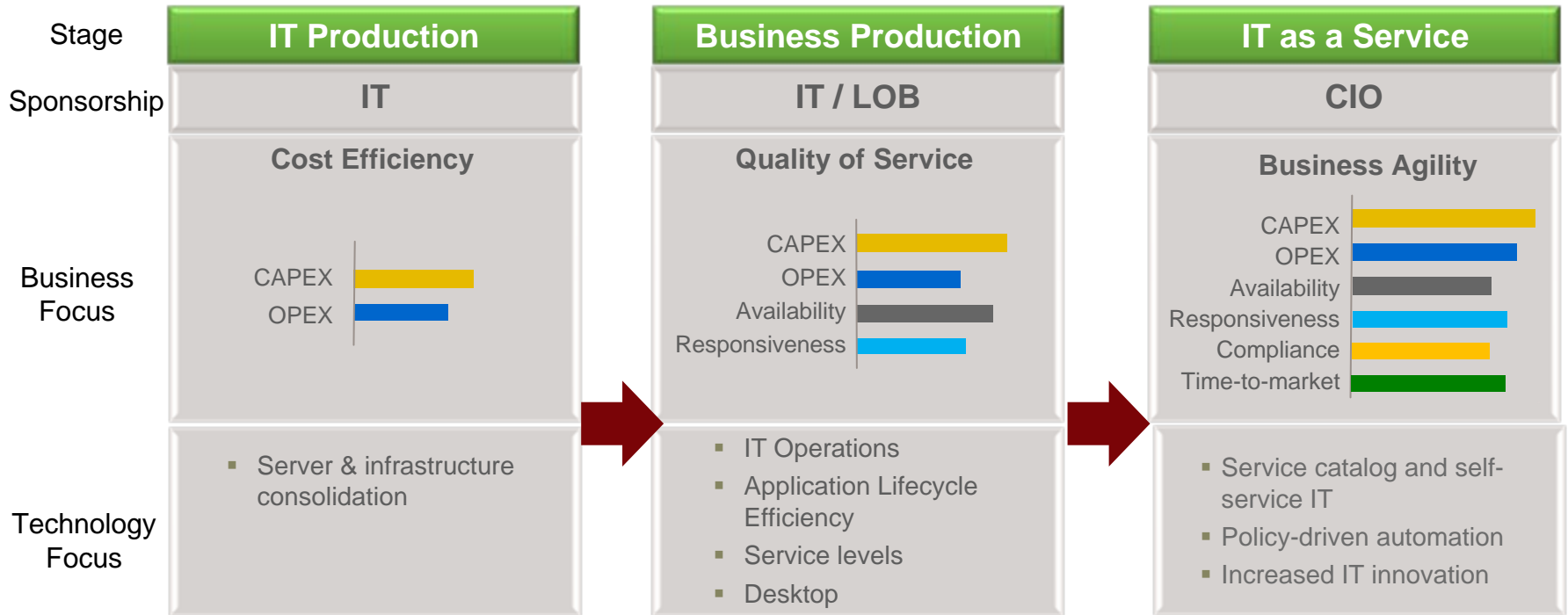


- **...and New Opportunities!**

- Enables greater automation
- Properties solve IT management problems in a new way



The VMware Customer Journey To IT-as-a-Service



VMware is the platform

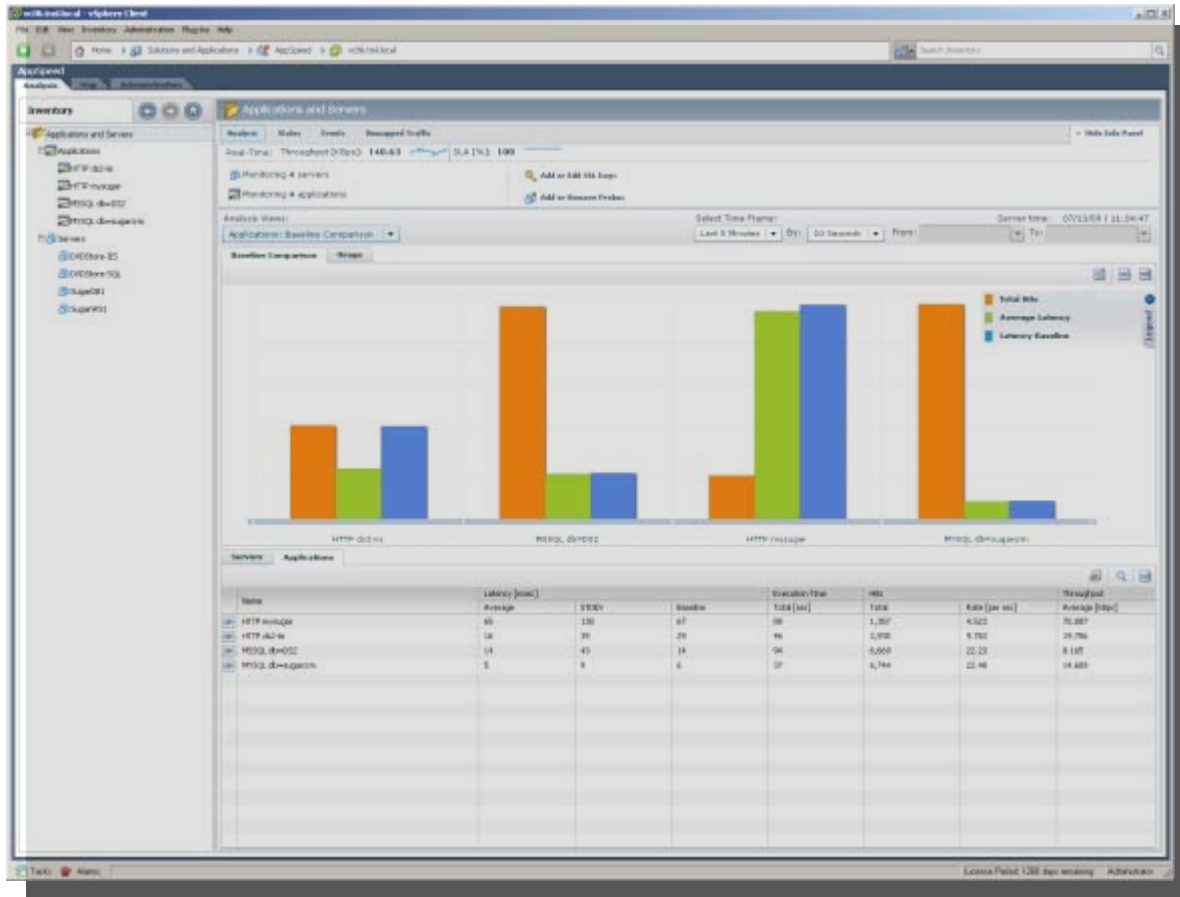


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Eliminate Performance Issues With Proactive Monitoring



vCenter AppSpeed

- Monitor application performance against SLAs at the transaction level
- Root cause analysis and faster troubleshooting
- Perform “Assured Migrations” where performance is measured both pre and post virtualization of a critical app

Map the Environment, Monitor Performance, Analyze Root Cause

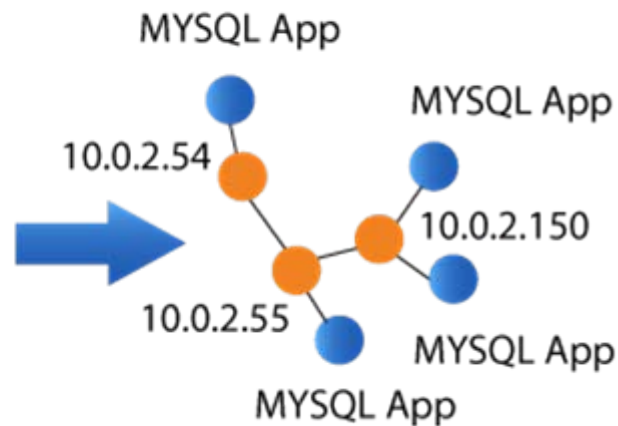
Automatically maps interdependencies between application components based on virtual switch traffic



Continually monitor the environment and identify applications performing below baseline

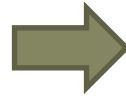


Drill down on performance issues to quickly **isolate** and **remediate** problems

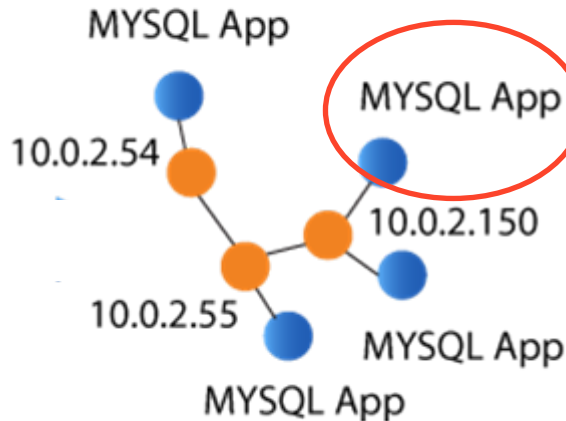


Analyze Root Cause

AppSpeed identifies the dependencies between application components



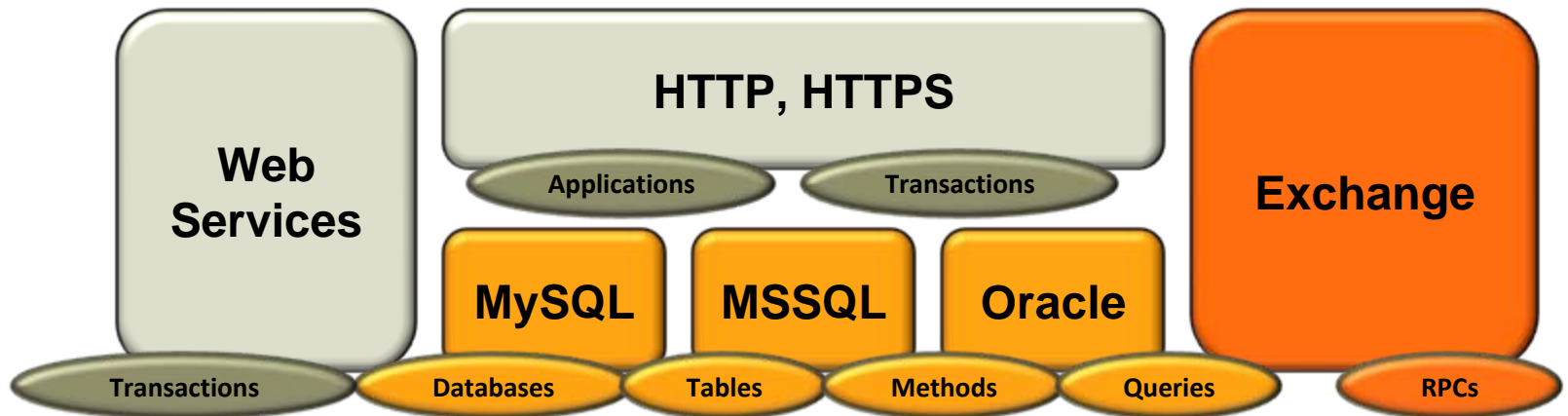
AppSpeed automatically seeks out and displays the VMs responsible for poor application performance



- Network?
- Application?
- Infrastructure?

AppSpeed Mapping Resolution

- For each supported protocol, once discovery of servers and transactions is done, AppSpeed monitors performance and usage.
- For HTTP, HTTPS and Web Services, AppSpeed maps the applications and transactions that participate in every application.
- For database protocols AppSpeed maps the databases, tables, methods and queries that are being used.
- For Exchange AppSpeed maps RPC commands.

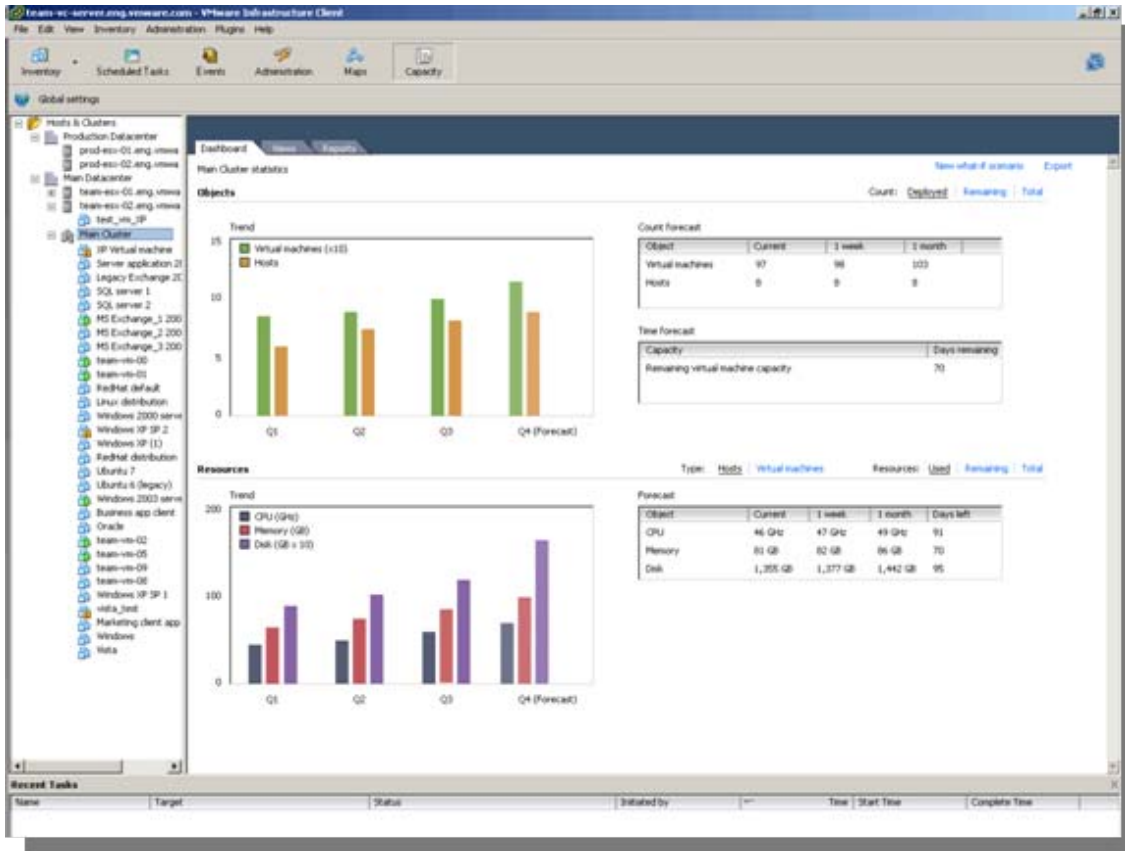


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Capacity Management: Improve CapEx by 25%



vCenter CapacityIQ

- Forecast timing of capacity shortfalls and needs
- Perform “What-If” impact analysis to model effect of capacity changes
- Identify and reclaim unused capacity

VM Profiling: Examples

- Idle Capacity

- **Idle VMs:**

- VM has consistently low resource utilization over a long period of time

- **Powered-Off VMs:**

- VM has been powered off over a long period of time



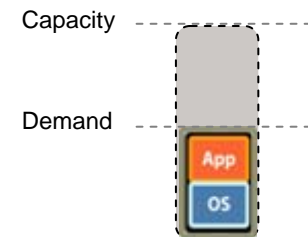
- VM Sizing Opportunities

- **Over-Allocated VMs:**

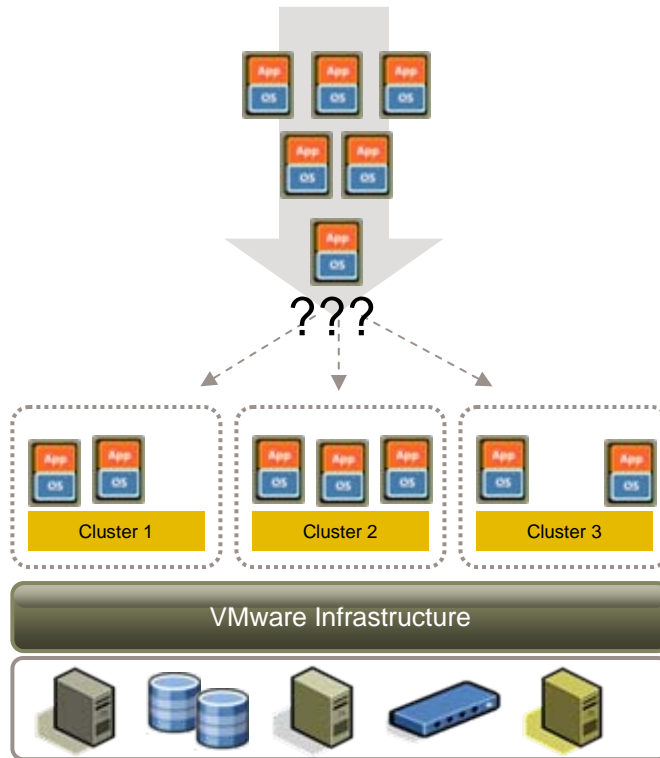
- VM has been allocated more capacity than it needs

- **Under-Allocated VMs:**

- VM needs more capacity than it has been allocated



Capacity Modeling



What if I add more VMs?
Is there enough capacity?

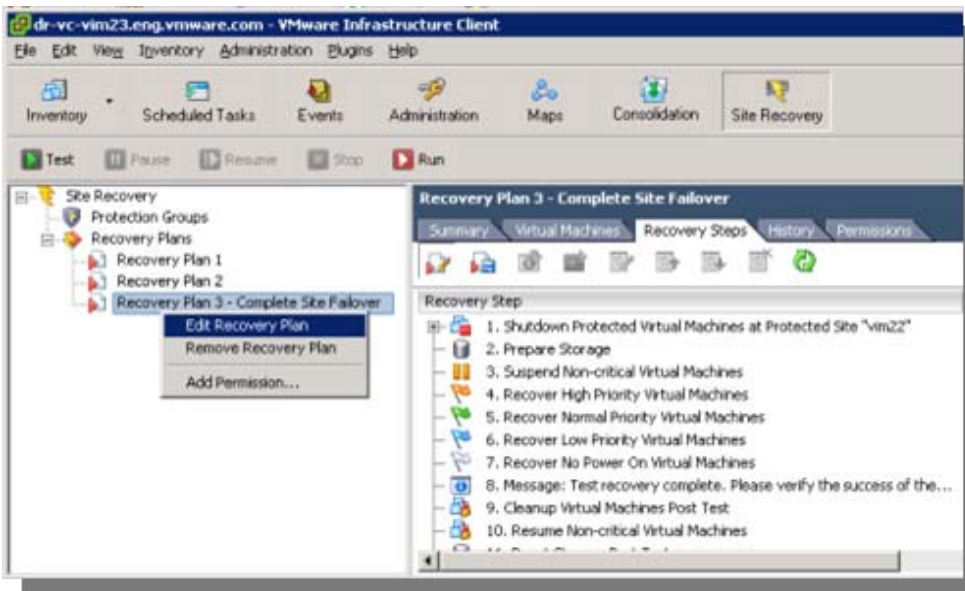
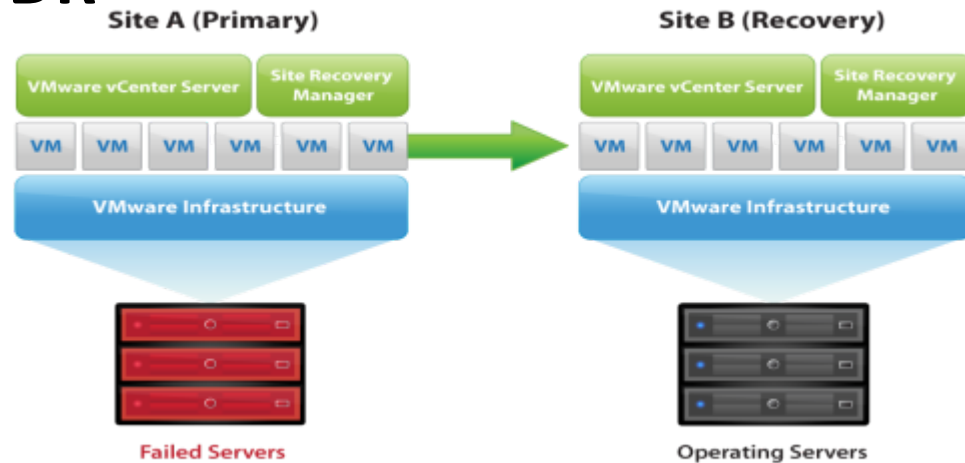
- Impact analysis of capacity changes
- Based on
 - What-If modeling scenarios: simulated set of changes in capacity demand or supply
 - Historical resource trends
- Virtualization-awareness
 - Recognizes VMware HA- and DRS-enabled clusters, and factors those into the predictions

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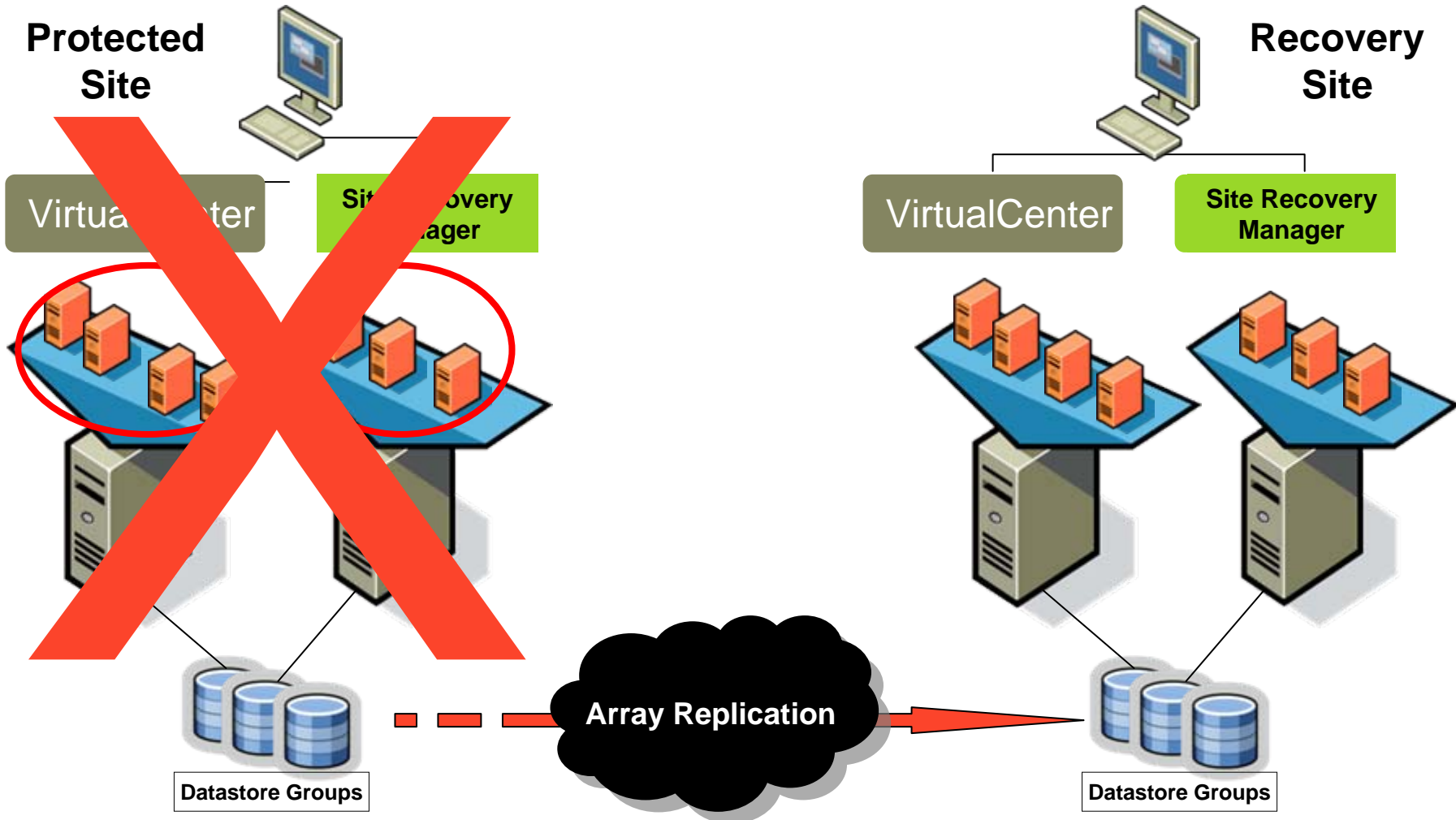
Protect the Business with Rapid, Reliable, Affordable DR



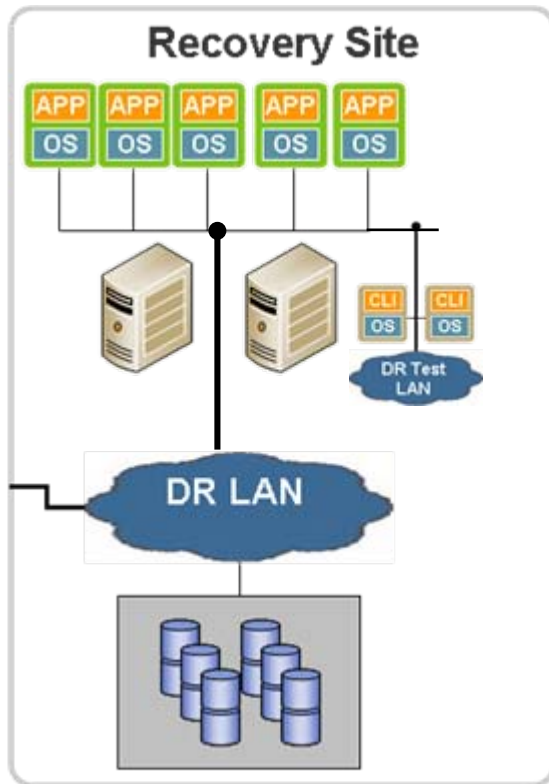
vCenter Site Recovery Manager

- Simplifies and automates disaster recovery workflows: setup, test, failover
- Turns manual disaster recovery runbooks into automated plans
- Centralized management of recovery plans from the vSphere client

Disaster Recovery Management



Testing



Replication Management

- Snapshot replicated LUNs before test
- Delete snapshots of replicated LUNs after test

Network Management

- Change all virtual machines to a test port group before powering them on

Customization/extensibility

- Same breakpoints and callouts as failover sequence
- Extra breakpoints and callouts around the test bubble

- Non-disruptive testing of recovery plans
- Testing can incorporate existing/non-virtual DR tools and processes

Testing and Executing Recovery Plans

The screenshot shows a 'Recovery Plan 2' window with a tree view on the left and a task execution table on the right. Callouts point to various elements: 'Steps in recovery plan' points to the tree view; 'Status and time stamps' points to the 'Status', 'Task Started', and 'Task Completed' columns; 'When to execute' points to the 'Mode' column; and 'User confirmation message' points to a yellow message box at the bottom.

Recovery Step	Status	Task Started	Task Completed	Mode
1. Shutdown Protected Virtual Machines at Protected Site "vim22"				Recovery only
1. Shutdown Low Priority Protected Virtual Machines				Recovery only
2. Shutdown Normal Priority Protected Virtual Machines				Recovery only
3. Shutdown High Priority Protected Virtual Machines				Recovery only
1. Shutdown Primary Site VM "app_vm12"				Recovery only
2. Prepare Storage	Success	4/4/2008 3:11:11 PM	4/4/2008 3:28:15 PM	
1. Attach Disks for Protection Group "Protection Group 2"	Success	4/4/2008 3:11:11 PM	4/4/2008 3:28:15 PM	
3. Suspend Non-critical Virtual Machines	Success	4/4/2008 3:28:15 PM	4/4/2008 3:28:15 PM	
4. Recover High Priority Virtual Machines	Error: Failed to connect NFC service.	4/4/2008 3:28:15 PM	4/4/2008 3:35:10 PM	
1. Recover VM "app_vm12"	Error: Failed to connect NFC service.	4/4/2008 3:28:17 PM	4/4/2008 3:35:10 PM	
5. Recover Normal Priority Virtual Machines	Success	4/4/2008 3:35:10 PM	4/4/2008 3:40:28 PM	
1. Recover VM "app_vm7"	Success	4/4/2008 3:35:19 PM	4/4/2008 3:36:26 PM	
2. Recover VM "app_vm8"	Success	4/4/2008 3:36:26 PM	4/4/2008 3:37:28 PM	
3. Recover VM "app_vm9"	Success	4/4/2008 3:37:28 PM	4/4/2008 3:38:26 PM	
4. Recover VM "app_vm10"	Success	4/4/2008 3:38:26 PM	4/4/2008 3:39:27 PM	
5. Recover VM "app_vm11"	Success	4/4/2008 3:39:27 PM	4/4/2008 3:40:28 PM	
6. Recover Low Priority Virtual Machines	Success	4/4/2008 3:40:28 PM	4/4/2008 3:40:28 PM	
7. Recover No Power On Virtual Machines	Success	4/4/2008 3:40:28 PM	4/4/2008 3:40:28 PM	
8. Message: Test recovery complete. Please verify the success of the...	Waiting for Input	4/4/2008 3:40:28 PM	0%	Test only
9. Cleanup Virtual Machines Post Test				Test only
10. Resume Non-critical Virtual Machines				Test only
11. Reset Storage Post Test				Test only
1. Reset Disks for Protection Group "Protection Group 2"				Test only

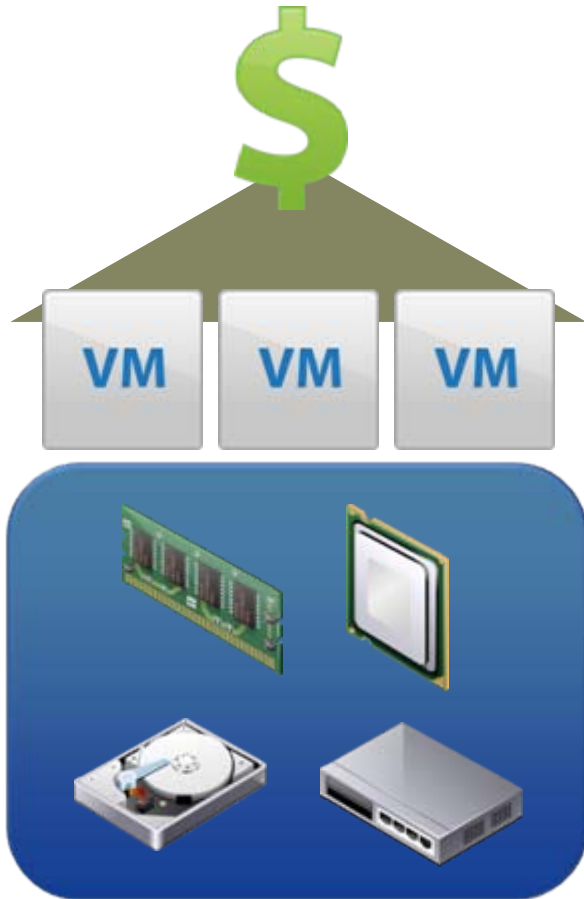
Message: Test recovery complete. Please verify the success of the test. When done, click Continue to clean up the test and return to a ready state.

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vCenter Chargeback



Account, monitor, and report on costs associated with your virtual infrastructure

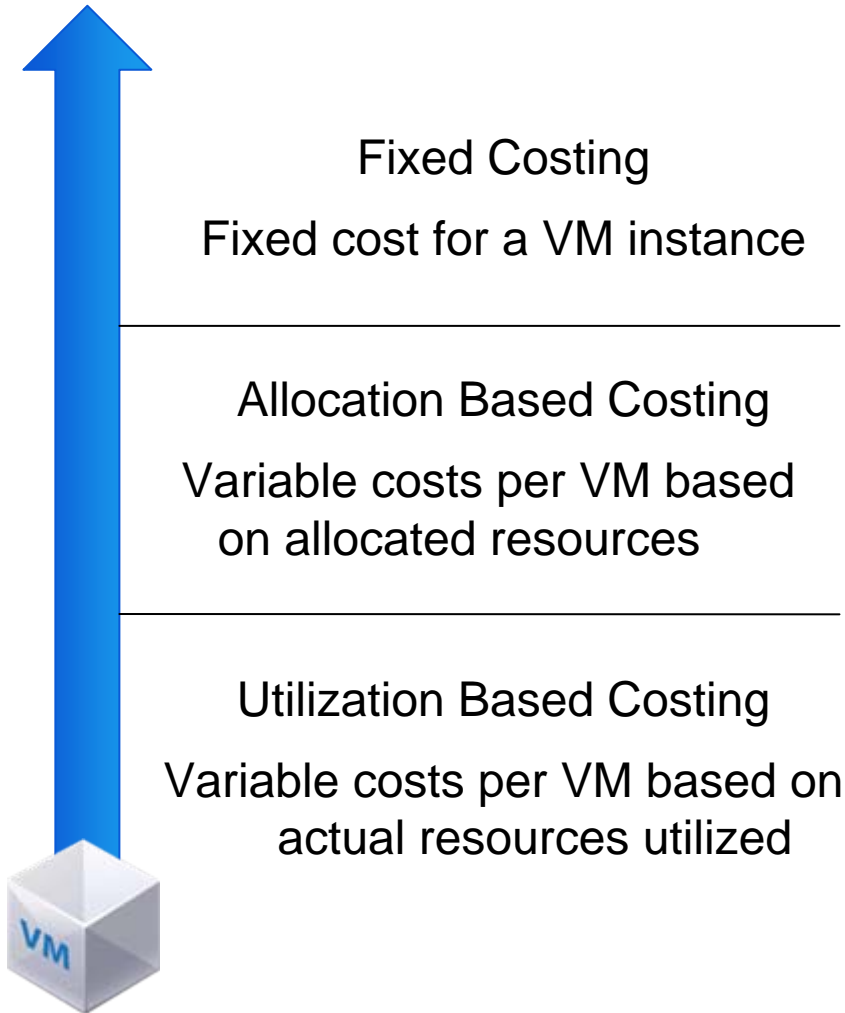
Benefits

- **Improve Resource Utilization:** By associating costs to VMs many of the “free” VMs will go away, freeing up resources for higher priorities
- **Optimization of Budgets:** Business units can understand how much they are paying for resources and how much goes to unused, allowing them to optimize resource consumption & costs

Key Features

- Fixed, allocation, and utilization based costing
- Charge different amounts for tiers of infrastructure
- Schedule reports & email results

Costing Models



- > Start simple and move to a advanced chargeback model over time
- > Compare between models by configuring different reporting options
- > Ensure the chargeback model can align with organizational requirements
- > Flexible costing options mix & match between models

Cost Accounting

Metering Element	Cost per Hour (Examples)
CPU – GHz Used	\$.30
Memory – GB Used	\$.64
Disk – GB Used	\$.15
Disk I/O – GB used	\$.05
Network I/O – GB used	\$ 0.0

- > Base rates define costs associated with tracked metering elements
- > Costing rates can be applied to different costing models at run-time
- > Disable metering elements not needed

Not sure what your costs are? Use the VMware cost model calculator



Reporting & Billing



Chargeback Report Summary

Bill Date: **May 31, 2008**
Bill period: **March 1, 2008 - March 31, 2008**
Cost Model: **Demo Model**

Summary Bill

PA Exchange Server 1

Department:
Location:

Period	Resource	Used Units	Total Charge
March 1, 2008 - March 31, 2008	CPU	10 GHz/hour	10.00
March 1, 2008 - March 31, 2008	Memory	10 GB/hour	20.00
March 1, 2008 - March 31, 2008	Network	5 GB	5.00
March 1, 2008 - March 31, 2008	Disk IO	100 BG	50.00
March 1, 2008 - March 31, 2008	Disk	120 BG/hour	12.00
Subtotal			97.00

PA Exchange Server 2

Department:
Location:

Period	Resource	Used Units	Total Charge
March 1, 2008 - March 31, 2008	CPU	10 GHz/hour	10.00
March 1, 2008 - March 31, 2008	Memory	10 GB/hour	20.00
March 1, 2008 - March 31, 2008	Network	5 GB	5.00
March 1, 2008 - March 31, 2008	Disk IO	100 BG	50.00
March 1, 2008 - March 31, 2008	Disk	120 BG/hour	12.00
Subtotal			97.00

PA Exchange Server 3

Department:
Location:

Period	Resource	Used Units	Total Charge
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- > Build reports at any level:
 - > High level (organization)
 - > Low level (per VM w/details)
- > Reports can be customized with headers/footers, icons, etc to fit company look-n-feel
- > Scheduled reports can be sent as PDF to email recipients or made available through Web UI



Thank you!

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