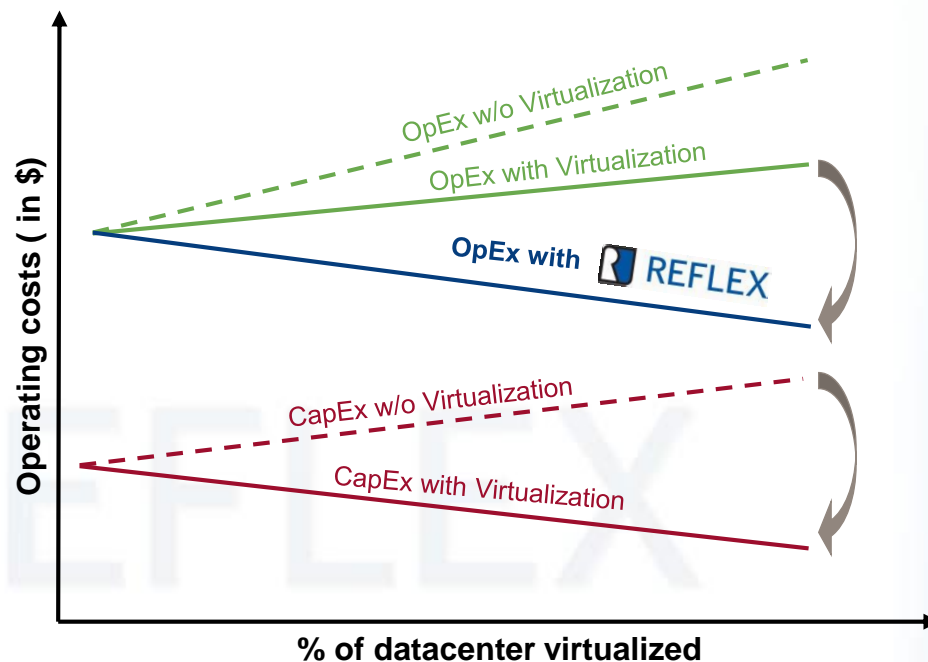# REFLEX

Reflex Overview
October 4, 2010

Reflex Virtual Infrastructure Management Benefits
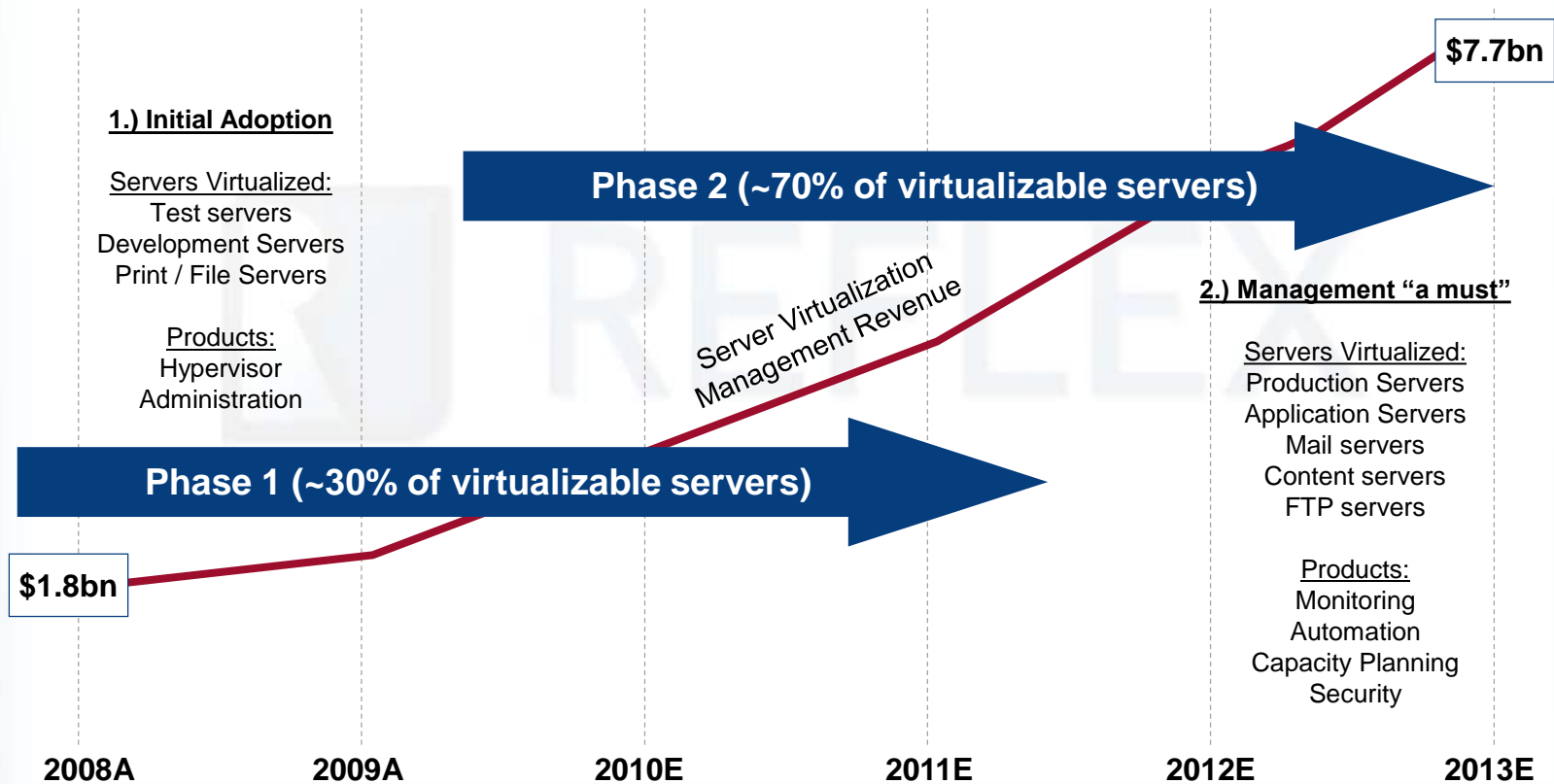
REFLEX

Organizations benefit from reduced costs and increased efficiency through <u>policy automation</u>

- With VMC and its related applications, enterprises can automate the management of critical policies both within their own data centers and also seamlessly extend those policies into cloud computing environments

- The adoption of virtual machines in enterprise environments as well as in public and private clouds can be accelerated

- Reflex minimizes FTE per server costs from industry average of 1 FTE per 20 physical servers to 1 FTE per 500 virtual servers

Operating costs (in $)

OpEx w/o Virtualization

OpEx with Virtualization

OpEx with **REFLEX**

CapEx w/o Virtualization

CapEx with Virtualization

% of datacenter virtualized

Since the largest line item on a typical IT budget is people, use of Reflex technology results in significantly more savings than from server consolidation alone.

4

Server Virtualization Management Lifecycle

- Witnessing migration from Phase I to Phase II as increased virtualization adoption leads to enhanced virtualization management needs
- During Phase I, vendors solved client problems with virtualization adoption, Phase II addresses the problems associated with managing the newly adopted virtualized environments
- As end users are moving more towards Phase II, vendors with more comprehensive product offering will be set at an advantage
- According to The 451 Group, among the most requested management tools and those with highest revenue growth will be monitoring, automation and security
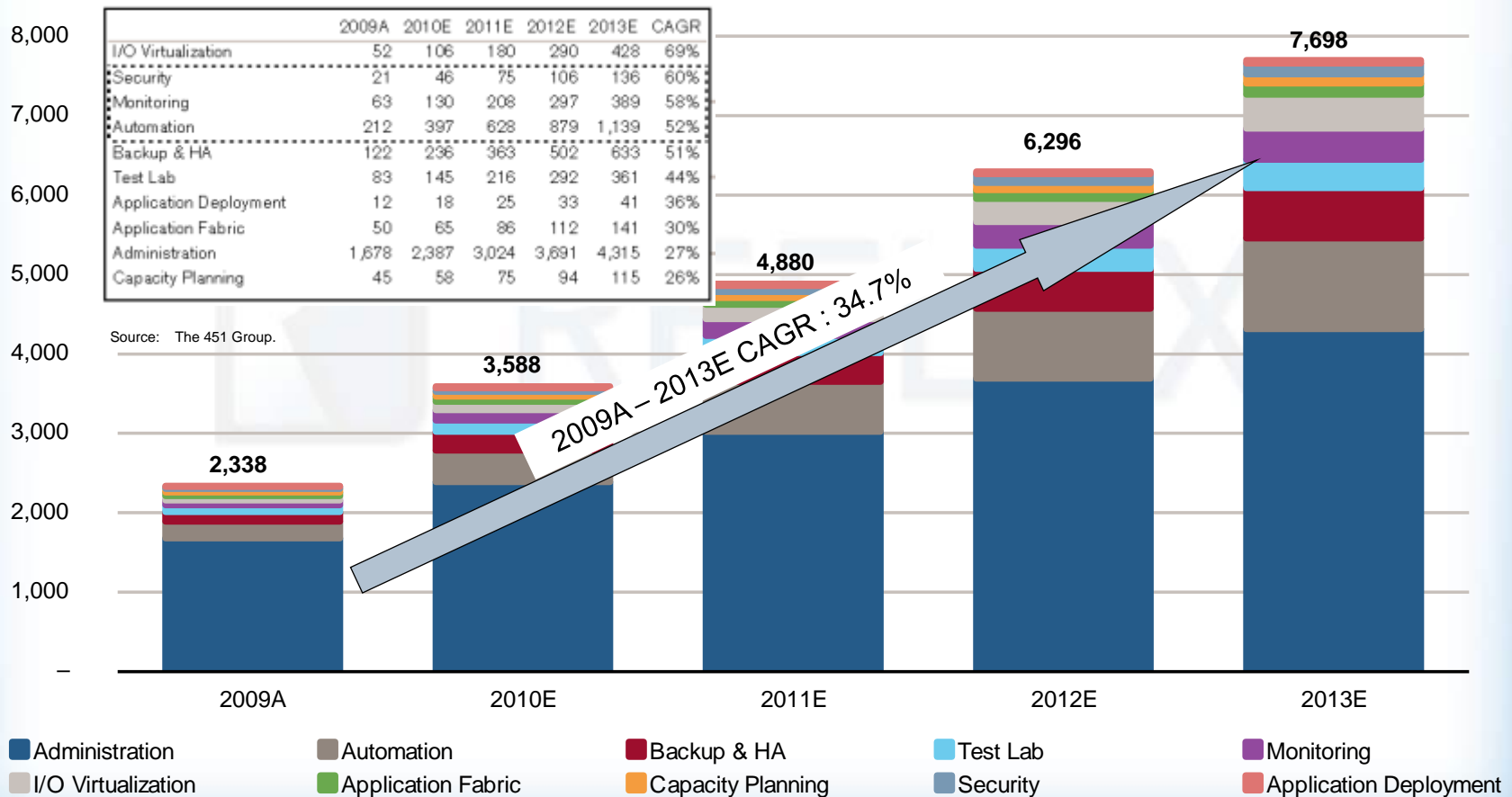
$7.7bn

1.) Initial Adoption

Servers Virtualized:
Test servers
Development Servers
Print / File Servers

Phase 2 (~70% of virtualizable servers)

Server Virtualization Management Revenue

Products:
Hypervisor
Administration

2.) Management "a must"

Servers Virtualized:
Production Servers
Application Servers
Mail servers
Content servers
FTP servers

Phase 1 (~30% of virtualizable servers)

$1.8bn

Products:
Monitoring
Automation
Capacity Planning
Security

| 2008A | 2009A | 2010E | 2011E | 2012E | 2013E |

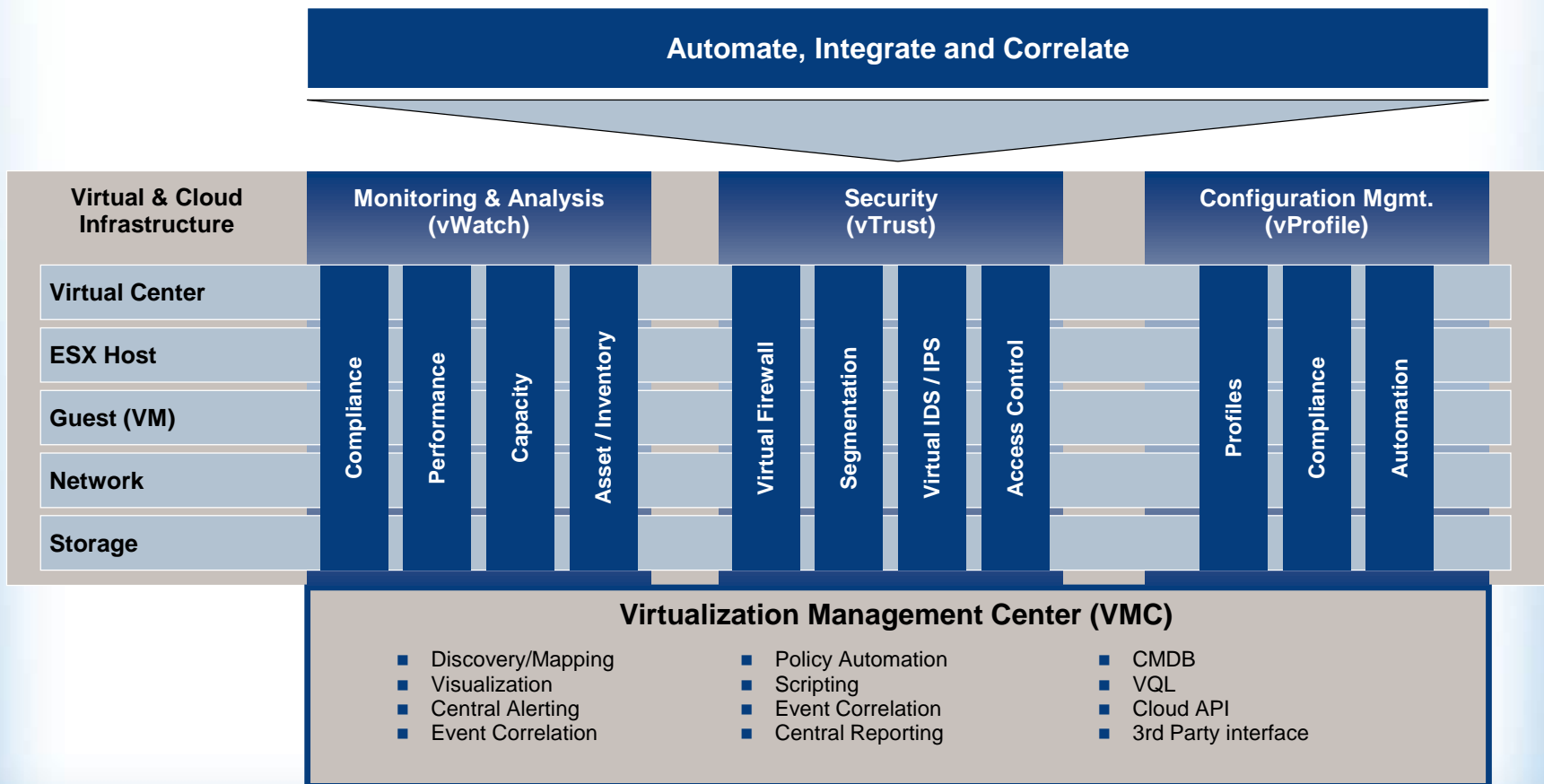Source: The 451 Group.

Server Virtualization Management Market

- Virtualization Management is the largest component of revenue in the broader Virtualization Market (valued $4.3bn in 2010)
  - Accounts for 83% of total revenues in 2010; will increase as virtualization management plays an increasingly dominant role vs. virtualization infrastructure (hypervisor)
- Within the virtualization management market, **Security, Monitoring and Automation** are among the fastest growing sub-segments
  - 2009–2013 CAGRs of 60%, 58% and 52% respectively.
  - Comprise key functionality for the measurement, monitoring, automation and security of workflow within virtualized environments

	2009A	2010E	2011E	2012E	2013E	CAGR
I/O Virtualization	52	106	180	290	428	69%
Security	21	46	75	106	136	60%
Monitoring	63	130	208	297	389	58%
Automation	212	397	628	879	1,139	52%
Backup & HA	122	236	363	502	633	51%
Test Lab	83	145	216	292	361	44%
Application Deployment	12	18	25	33	41	36%
Application Fabric	50	65	86	112	141	30%
Administration	1,678	2,387	3,024	3,691	4,315	27%
Capacity Planning	45	58	75	94	115	26%

Source: The 451 Group.

2009A – 2013E CAGR : 34.7%

Chart values (total):
- 2009A: 2,338
- 2010E: 3,588
- 2011E: 4,880
- 2012E: 6,296
- 2013E: 7,698

Legend:
- Administration
- Automation
- Backup & HA
- Test Lab
- Monitoring
- I/O Virtualization
- Application Fabric
- Capacity Planning
- Security
- Application Deployment

Source: The 451 Group.

Product Overview

- Reflex's Virtualization platform provides a comprehensive management and automated policy automation platform for managing virtual , private cloud, or public cloud infrastructures

- Provides horizontal (across management disciplines) and vertical (across the virtual "stack") integration and policy enforcement

- Enables security, configuration management, monitoring, compliance, and policy automation through a single pane of glass

Automate, Integrate and Correlate

Virtual & Cloud Infrastructure	Monitoring & Analysis (vWatch)					Security (vTrust)					Configuration Mgmt. (vProfile)		
	Compliance	Performance	Capacity	Asset / Inventory		Virtual Firewall	Segmentation	Virtual IDS / IPS	Access Control		Profiles	Compliance	Automation
Virtual Center													
ESX Host													
Guest (VM)													
Network													
Storage													

Virtualization Management Center (VMC)

- Discovery/Mapping
- Visualization
- Central Alerting
- Event Correlation

- Policy Automation
- Scripting
- Event Correlation
- Central Reporting

- CMDB
- VQL
- Cloud API
- 3rd Party interface

- Designed to provide customers with the essential management capabilities needed to effectively:
  - manage and secure the complex, dynamic virtual environment
  - capitalize on the existing virtualization investment
  - reduce cost through efficient management
  - minimize downtime
  - maintain a reliable virtualized infrastructure running critical business applications

Reflex is innovative in its approach to integrating security, compliance and management of the virtual environment by providing visibility, correlation, and control through a single pane of glass

Cross Domain Policy

Technology – vWatch
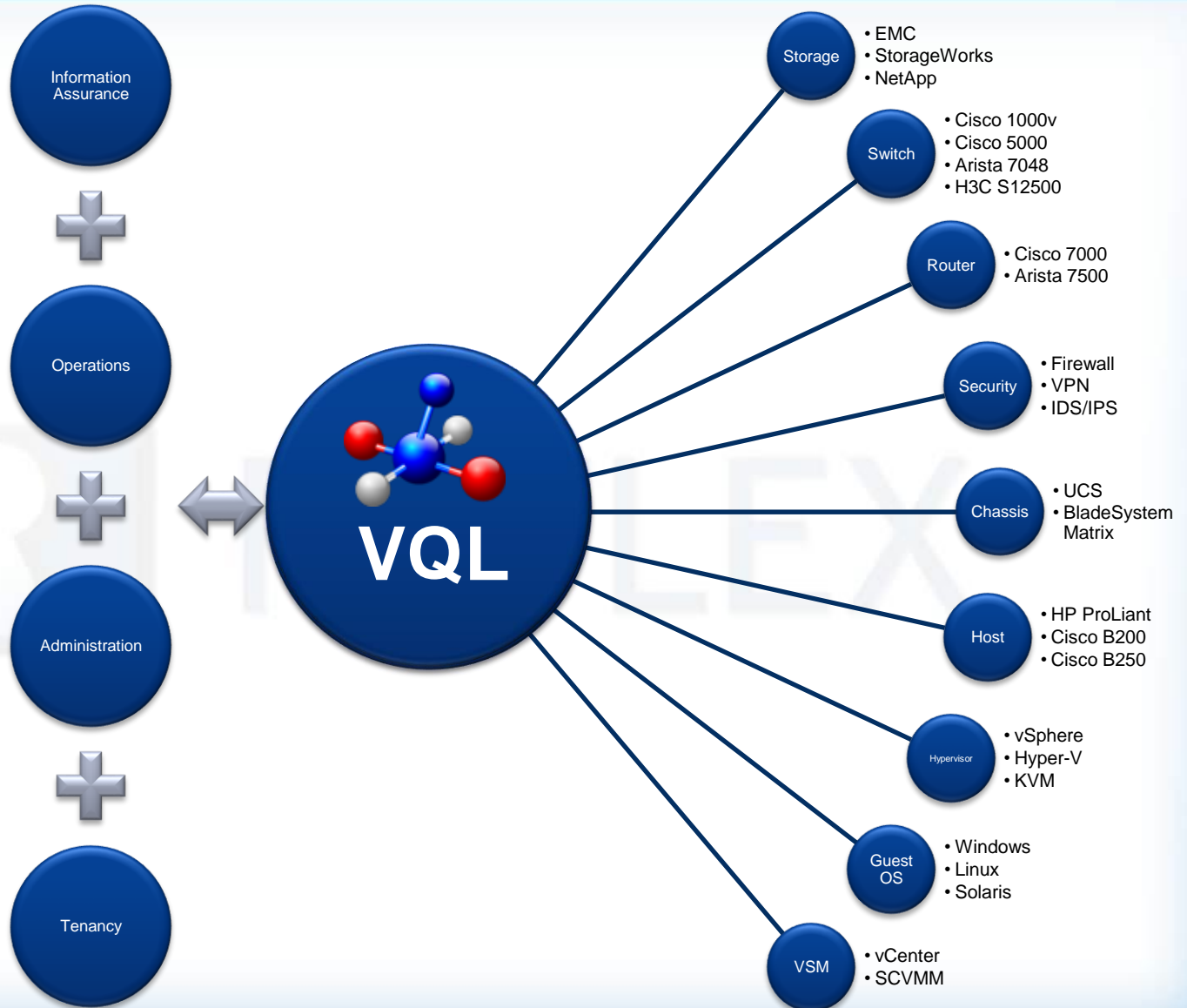
- Fully integrated component of the Reflex VMC platform
- Monitoring and analysis module which provides a comprehensive overview of the state of the virtual environment at any given time
- Through real-time and historical visual reporting, configuration change monitoring, and extensive correlation, vWatch provides administrators with the visibility they need
- The ability to visualize both the virtual and underlying hardware infrastructure has become mission critical for IT administrators

Functionalities:

- Virtual Flow Data
- Historical tracking
- Physical-to-Virtual
- Configuration
- Compliance
- Root-cause Analysis

vWatch is a lean, agentless solution, making it fast to deploy and simple to integrate into any data center environment
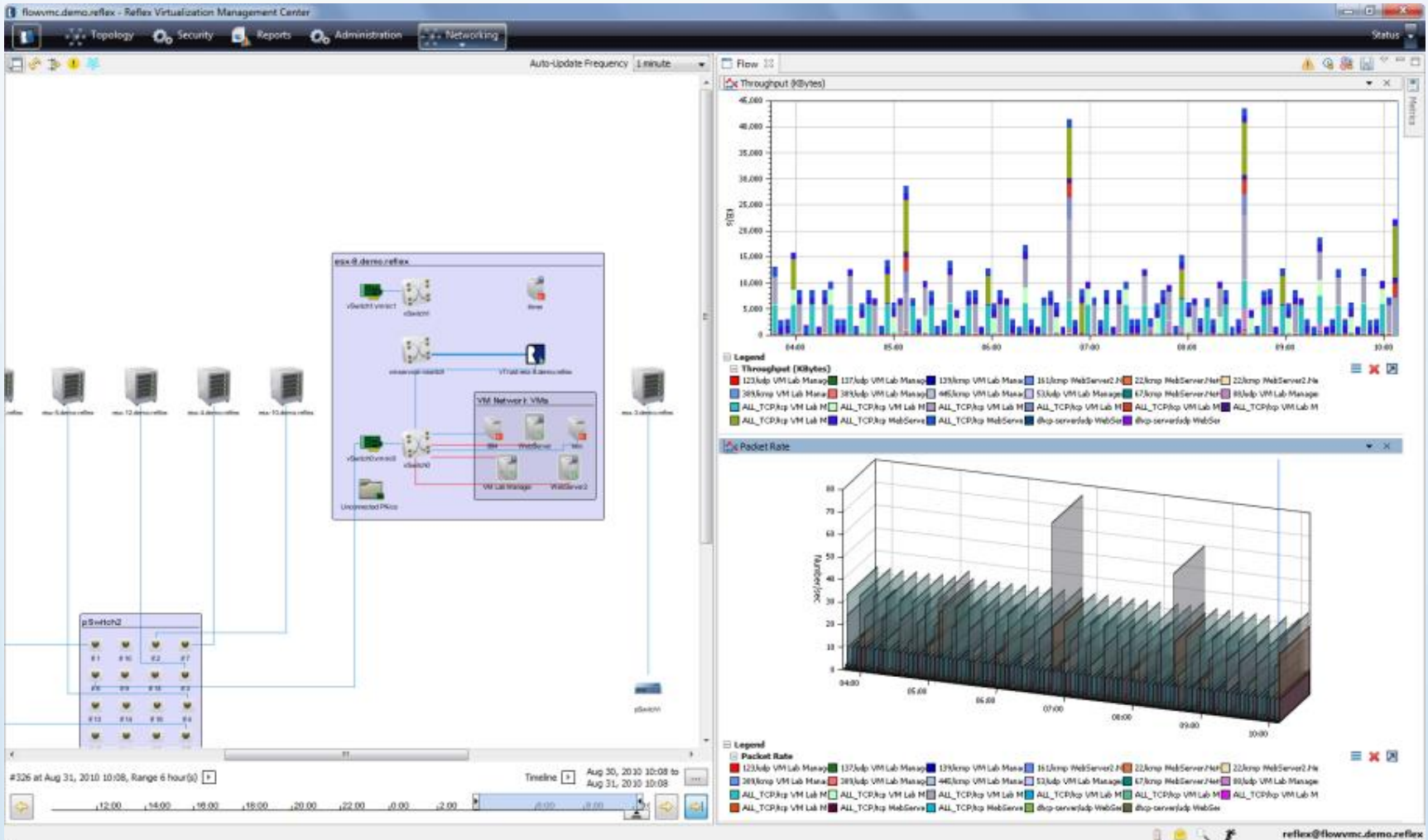
Network-Centric View with Netflow

Prior to the introduction of vTrust, virtualization administrators did not have at their disposal a unified tool by which to properly segment their virtual environment.

Technology – vTrust

R REFLEX

- Fully integrated component of the Reflex VMC platform
  - Designed to be integrated directly with the VMWare VMsafe platform technology
- Provides dynamic policy enforcement for virtual environments deployed locally and in external cloud environments
- Operating at the hypervisor kernel level, vTrust leverages the tightly integrated VMsafe component of VMware vSphereTM 4
- Facilitates adaptive, extensible policies that allow administrators to address complex business, information security and compliance requirements within the virtual environment

Functionalities:

Dynamic Policy Enforcement and Management

Policy Extends into the Cloud

Virtual Segmentation

Virtual Quarantine

Virtual Networking Policies
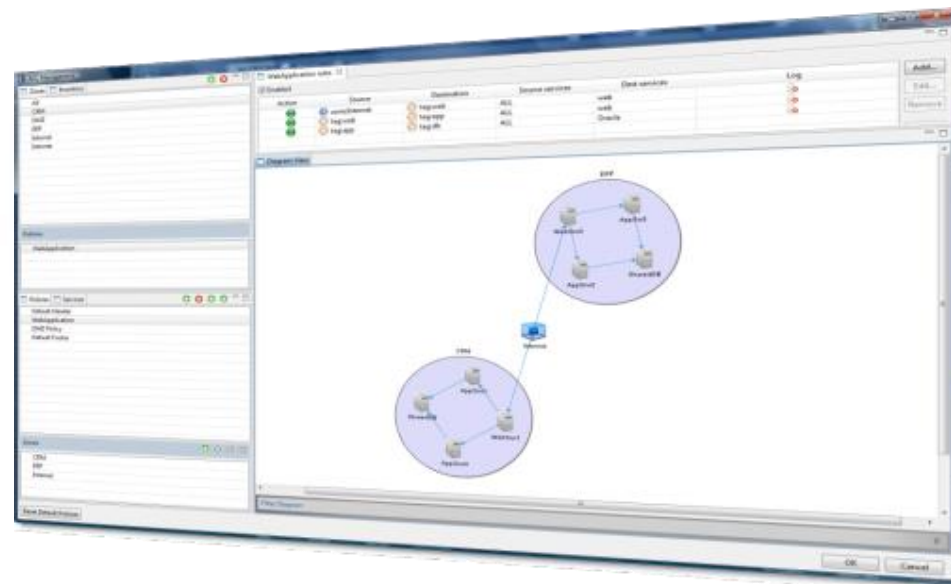
Prior to the introduction of vTrust, virtualization administrators did not have at their disposal a unified tool by which to properly segment their virtual environment.

- vProfile provides an API that enables service providers and enterprises to provision and manage security and compliance without the dependency on expensive external hardware
- vProfile configuration management is the only solution on the market today that provides 'difference visualization', and plots VM configuration changes according to a graphical, easy to understand "heatmap" interface

Functionalities:

- Apply Baseline Profile Configuration
- Heatmap and Customized Pivot Tables
- Ad-Hoc and Scheduled Remediation
- VQL Configuration Queries
- Tiered Configuration Profiles
- Historical Profile Definition
- Batch Modification
- IP Pool Allocation
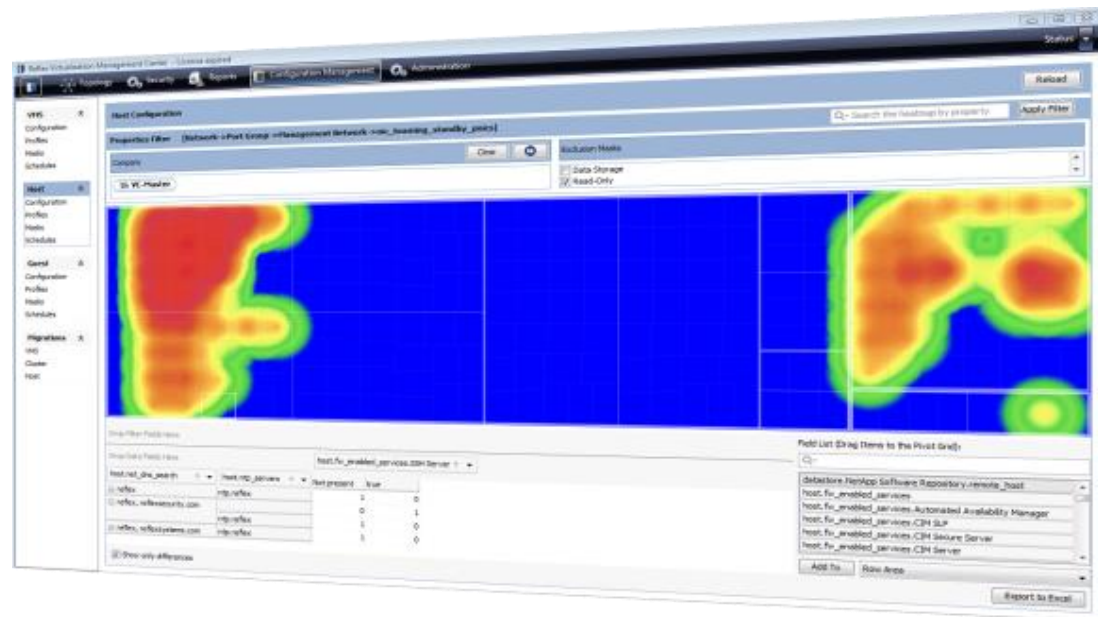
Provides customers with the ability to combine management and security functionality, and manage all tasks through a single pane of glass.

Expanded Configuration Management

Competitive Landscape

	Monitoring	Capacity Planning	Security & Configuration Compliance	Security (segmentation, FW, IDP, Access control)	Host, Network, and VM Configuration Management	Single, cross-domain Management Database	Cross-Domain Management Language	Web Services API for Cloud Portal Integration	At least 100 Customers with more then 10 six figure deals
REFLEX									
VMware vShield									
CISCO / VSG								?	
IBM / VSSD									
CA 3tera									?
ALTOR									
HyTrust									
Veeam									
ManageIQ									
QUEST SOFTWARE									

Customer Base

- The competitive advantage which Reflex provides has been validated by blue chip customers including premier government entities, academic institutions, and corporations.

Government, Education, & Healthcare

Financial Services

Industry

Strategic Partnerships
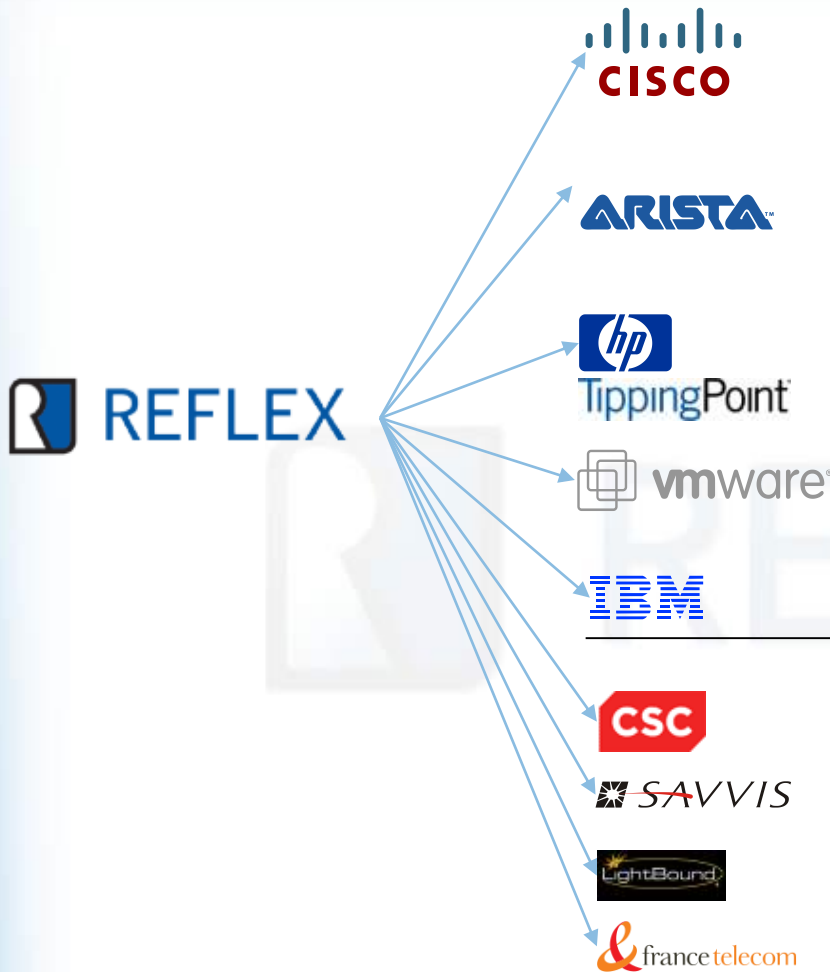
REFLEX

INFRASTRUCTURE PROVIDERS:

Cisco Advanced Services
- Cloud services offering leverages Reflex technology (Cloud Reference Architecture)
- Cisco and Reflex also provide a solution that combines Cisco Nexus 1000V Series Switches and Reflex VMC to address the challenges of securing and managing the next generation of virtualized data centers
- UCS management

Arista VM Tracer & Reflex VMC
- Integration with physical networking infrastructure to manage configuration and compliance
- Holistic management and integration of networks with VMs
- API-based integration for switch configuration management

TippingPoint vController - OEM and reseller of Reflex vTrust
- Provides redirection of VM traffic to physical IPS device
- License key adds Reflex feature set
- Existing Reflex can upgrade and add vController
- Future Plans to provide virtual IPS

- Technology Alliance Partner and a certified VMsafe vendor.
- Reflex code runs side-by-side with VMware's code in the kernel of the hypervisor. Reflex is also one of a limited number of 3rd party vendors with access to VMware's community source code.

- In progress for integration into the Tivoli Service Request Manager

SERVICE (CLOUD) PROVIDERS:

- Providing key infrastructure components of CSC "Trusted Cloud" Initiative
- Federal reseller and systems integrator

- Project Spirit: providing key infrastructure components of Savvis Symphony, Savvis's next generation secure public cloud offering

- Service (Cloud) Provider

- Service (Cloud) Provider

Ability to access and leverage other virtual infrastructure market participants contributes to the Company's unique positioning