

## Moving From a Reactive to a Proactive Security Model

Scott Van Horne





- ▣ State of Endpoint Security Technology Market
  - Customer Challenges
- ▣ Security Technology Maturation
  - Natural Shift from Reactive to Proactive Security Model
- ▣ A New Age of End-Point Security
  - A Positive, Proactive Approach





# State of Endpoint Security Technology Market



- ☐ Anti Virus
- ☐ Anti Spyware
- ☐ Personal Firewall
- ☐ IPS/IDS
- ☐ Secure password enforcement
- ☐ Domain policies
- ☐ Disabled USB ports

**So, with all this end-points should be secure, right?**

# Security Landscape is Changing



Source: IDC

## Old Landscape

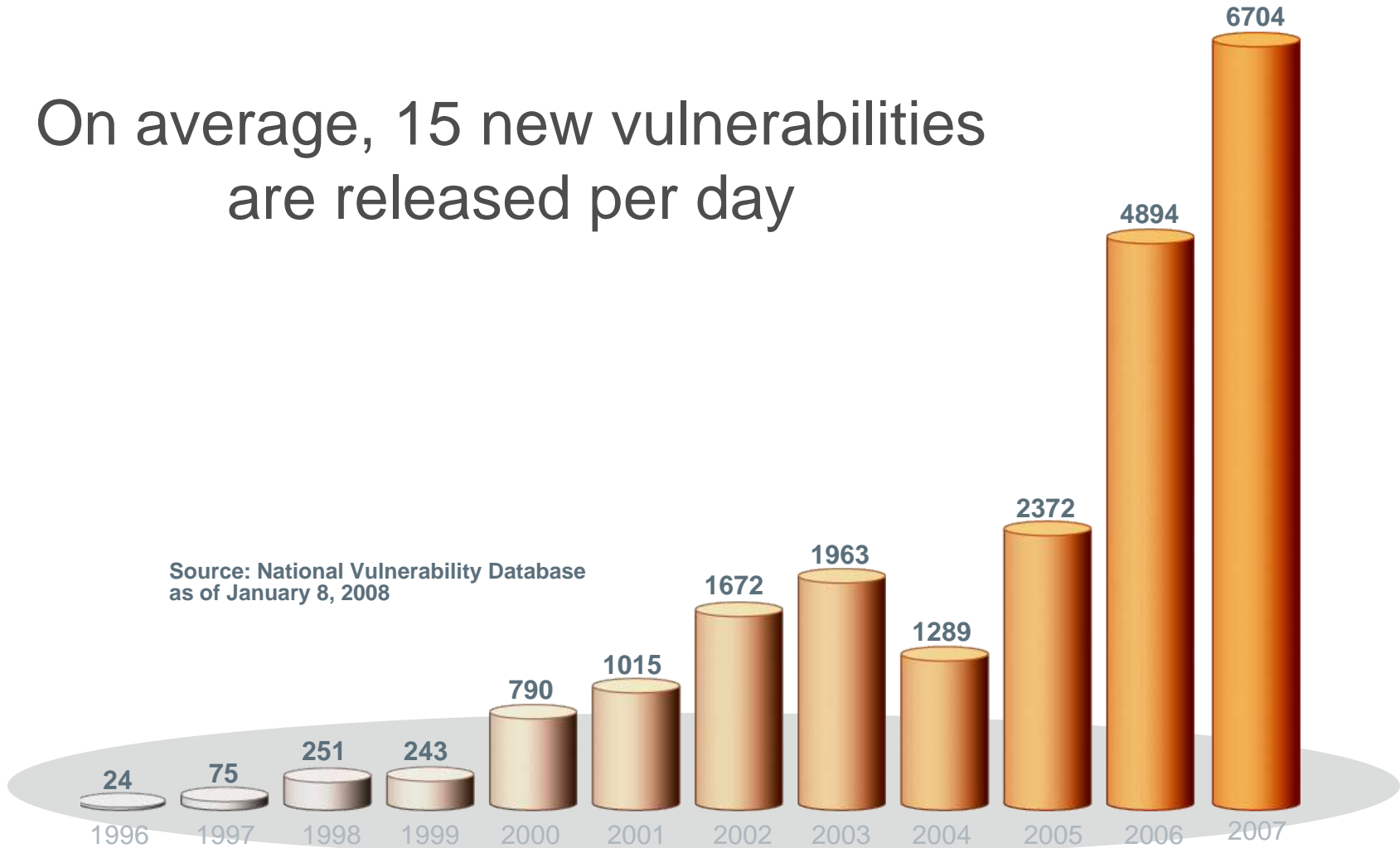
## New Landscape



# Each Day, the Problem Gets Bigger



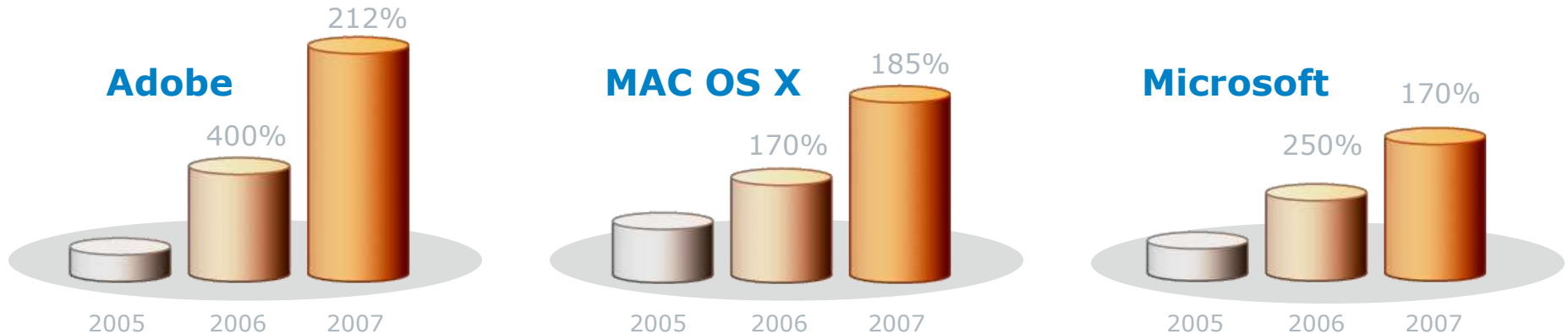
On average, 15 new vulnerabilities are released per day



# Hackers find New Avenues of Attack



▣ NVD reported 13,270 vulnerable applications as of 01/08/08



Source: National Vulnerability Database

*“Adobe Acrobat/Reader PDF documents can be used to compromise your Windows box. Completely!!!”* **TECHWORLD**



## ***Hackers hijack Windows Update's downloader*** ***May 10, 2007***

**COMPUTERWORLD**

*“Attackers are leveraging components and becoming more and more modular in how they create software. They’re simply following the trend of traditional software development.”*

## ***Like eBay for Malware: Computer Crime is Slicker Than You Think*** ***August 15, 2007***

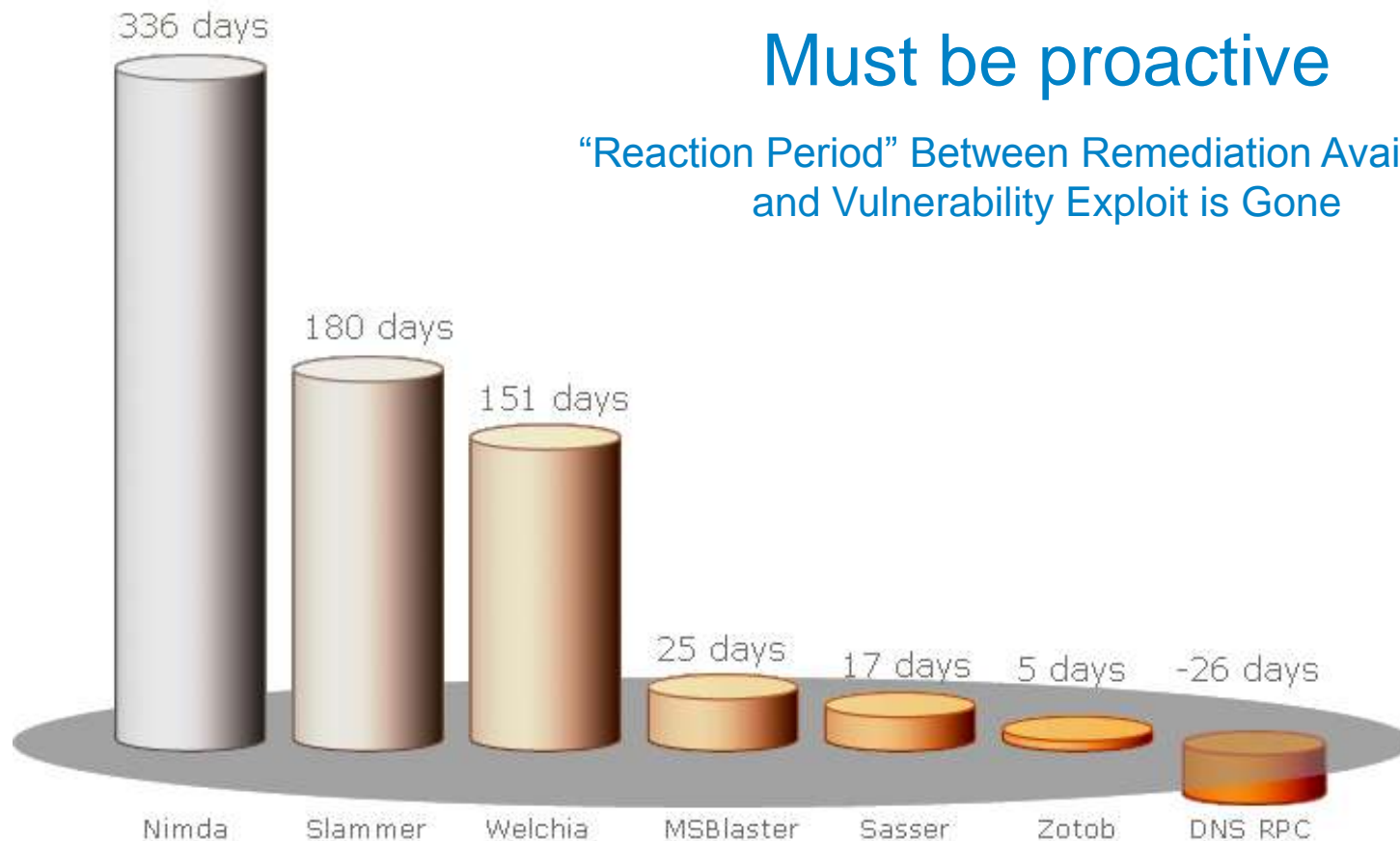
**ChannelWeb** NETWORK

*If you want to break into a computer or steal credit card numbers, you can buy the necessary software online, just like almost anything else. More than that, you can find user friendly, point-and-click attack applications that have been pre-tested and reviewed by experts, and read through customer feedback before making your purchase.*



## Must be proactive

“Reaction Period” Between Remediation Availability and Vulnerability Exploit is Gone





February 2007



tested **15 leading anti-virus vendors**  
against  
**481,850 pieces**  
of known malicious software

[www.av-comparatives.org](http://www.av-comparatives.org)

**Out of the 99% of enterprises  
with AV/AS, 62% suffered an  
infection 4**

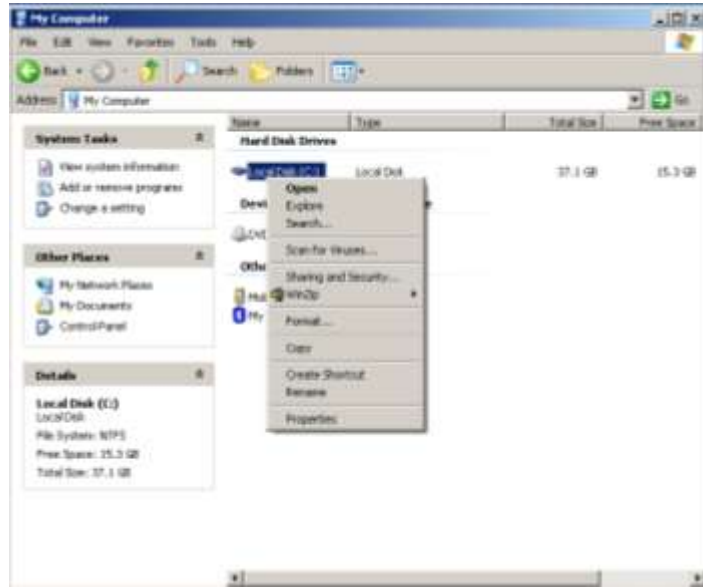
The largest viral database  
had over 662,000 signatures  
..... **HOW BIG IS BIG  
ENOUGH?**

## Total Detection Rates

Symantec  
**MISSED over 30,000 ...**

McAfee  
**MISSED over 80,000...**

# Key Challenge – Data Loss is Exploding



**Customer Secrets to Go!**



- ▣ Endpoints are the likeliest entry point for malware <sup>2</sup>
- ▣ 43% of firms reported laptops were most common source of worm attacks <sup>3</sup>
- ▣ 75% of enterprises “will be infected with undetected, financially motivated, targeted malware that evaded traditional perimeter and host defenses.” <sup>5</sup>
- ▣ The average loss from a data breach is \$167,713 per incident <sup>6</sup>
- ▣ 75 percent of Fortune 1000 companies fell victim to data leakage <sup>6</sup>



Sources:

1 – National Vulnerability Database

2 - Yankee Group, 2005 Security Leaders and Laggards Survey

3 – Enterprise Strategy Group

4 – [www.av-comparatives.org](http://www.av-comparatives.org)

5 – Gartner Research, “Gartner’s Top Predictions for IT Organizations and Users, 2007 and Beyond,” Daryl C. Plummer, December 1, 2006

6 2006 CSI/FBI Computer Crime and Security Survey

# Customer Impact - Compliance is Coming



20% of the 161 exabytes of data created in 2006 are subject to compliance guidelines

- ▣ Privacy legislation requiring that companies publicly disclose information security breaches to customers is also in effect in 31 states
  - Compliance experts expect that it will not be long before all 50 states have such laws in place
  
- ▣ Regulatory Compliance policies are become more specific
  - IT accounted for 5% of a SOX audit three years ago, but now accounts for about 30%
  
- ▣ Visa offers merchants and transaction services providers \$20 million in incentives to comply with PCI regulations











- Companies rebuild 85% of their laptops and desktops each year <sup>1</sup>
- Average enterprise downtime = 23 person days <sup>1</sup>
- Average time to achieve full recovery = 31 person days <sup>1</sup>

<sup>1</sup> Yankee Group

# Short List of Recent Attacks



	Dolphins' sites serves up malicious JavaScript code that exploits two known Windows vulnerabilities and installs a Trojan downloader and a password stealing program on the victim's computer.
	A disgruntled Boeing transferred 320,000 company files over the course of more than two years to a thumb drive and then removed it from company property. Boeing estimated that if only a portion of the stolen documents were given to competitors, it could cost the company between \$5-\$15 billion.
	6.3 million customers affected by the security lapse, where attackers had access to a database that included personal information, account numbers and Social Security numbers of customers.
	Hackers stole legitimate credentials from Monster's job-seekers to plant malware on the site and execute a phishing scheme.
	Hacker accessed credit card numbers and other personal information in a December incident. Ironically, the website features the "hacker safe" notification from McAfee ScanAlert.
	SQL injection attack on Microsoft's SQL Server database product to compromise 70,000+ sites, including CA. Hijacked visitors' PCs with a variety of exploits



# Security Technology Maturation



As technologies mature, they invariably move from a “reactive” to a “proactive” security model

## ☐ “Early Stage” - Negative/Reactive Model

- Security: trumped by need for productivity
- Costs: Focus on low acquisition, unknown TCO
- Security Philosophy: Trust all, **reactively block** the “known bad” as soon as it is identified



## ☐ “Mature Stage” – Positive/Proactive Model

- Security: Equal in status to productivity
- Costs: Focus on lowering true TCO
- Security Philosophy: Suspect all, **proactively allow** only the “known good” through policy enforcement





Early Stage:  
“Reactive”

Mature Stage:  
“Proactive”

<b>Policy Philosophy</b>	Productivity and flexibility at the expense of security	Flexibility and productivity - within established bounds
<b>Resources Access or Consumption</b>	Trust anyone	Protect everyone by verifying everyone
<b>Enforcement Approach</b>	Block “known bad” if/when they are identified	Allow “known good” (block all bad - both known & unknown)
<b>Cost Curve</b>		



Early Stage:  
“Reactive”

Mature Stage:  
“Proactive”

<b>Policy Philosophy</b>	Applications that require admin privileges are normal	With rare exceptions, applications run in user mode
<b>Resources Access or Consumption</b>	Running applications have access to most system resources	Protected memory and system resource access
<b>Enforcement Approach</b>	None: End-users demand admin privileges	Approved application list: run well w/ only user privileges
<b>Cost Curve</b>		



- ❑ Negative/reactive security models are the simplest to implement and are used in the early stages of a technology
- ❑ Over time negative/reactive security models do not scale in terms of effectiveness, performance, or cost
- ❑ Out of necessity, vendors turn to a positive/proactive model as products mature
- ❑ Only positive/proactive security models can eliminate unknown threats and the associated risks
- ❑ Products are forced to adopt a positive security model to meet customer demands for effectiveness, performance, and reduction in TCO

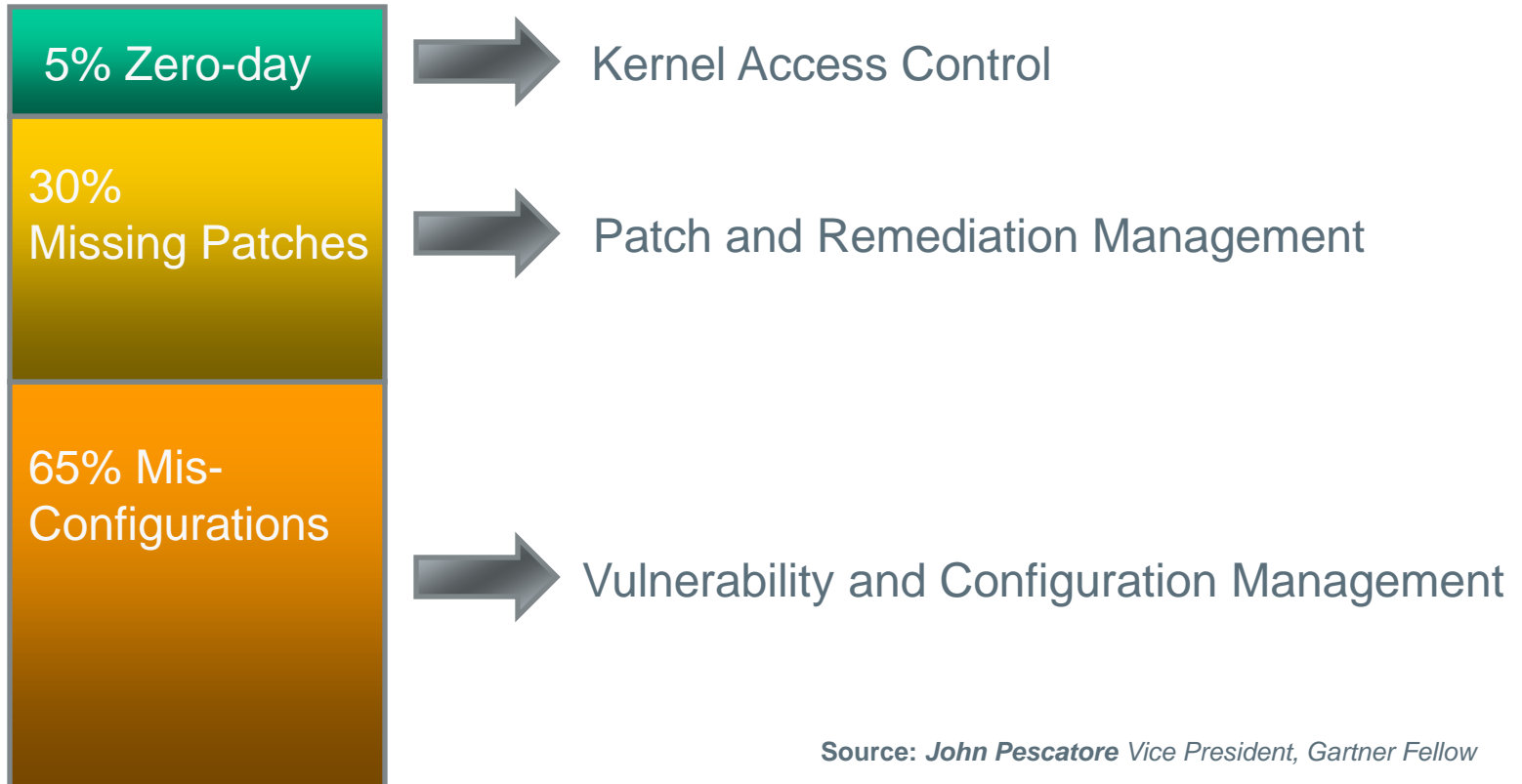


# A New Age of End-Point Security

## A Positive, Proactive Approach



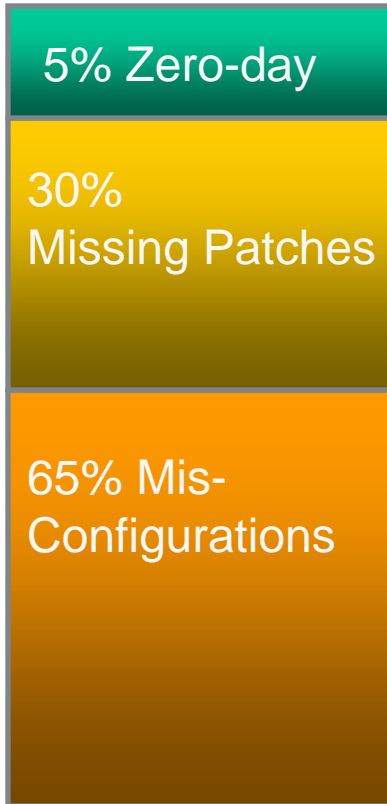
Attacks Exploit  
Risks at the Core



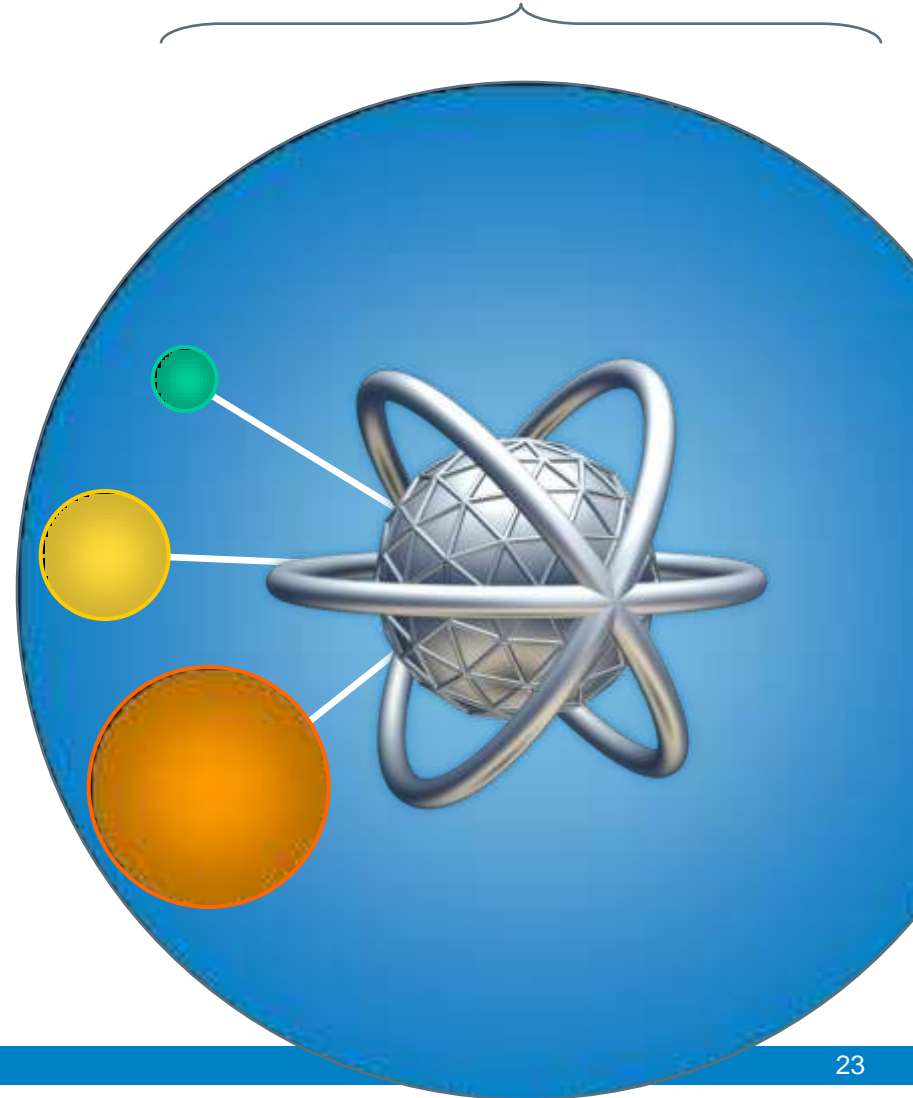
Source: *John Pescatore* Vice President, Gartner Fellow



Attacks Exploit  
Risks at the Core



The CORE / Sources of Risk

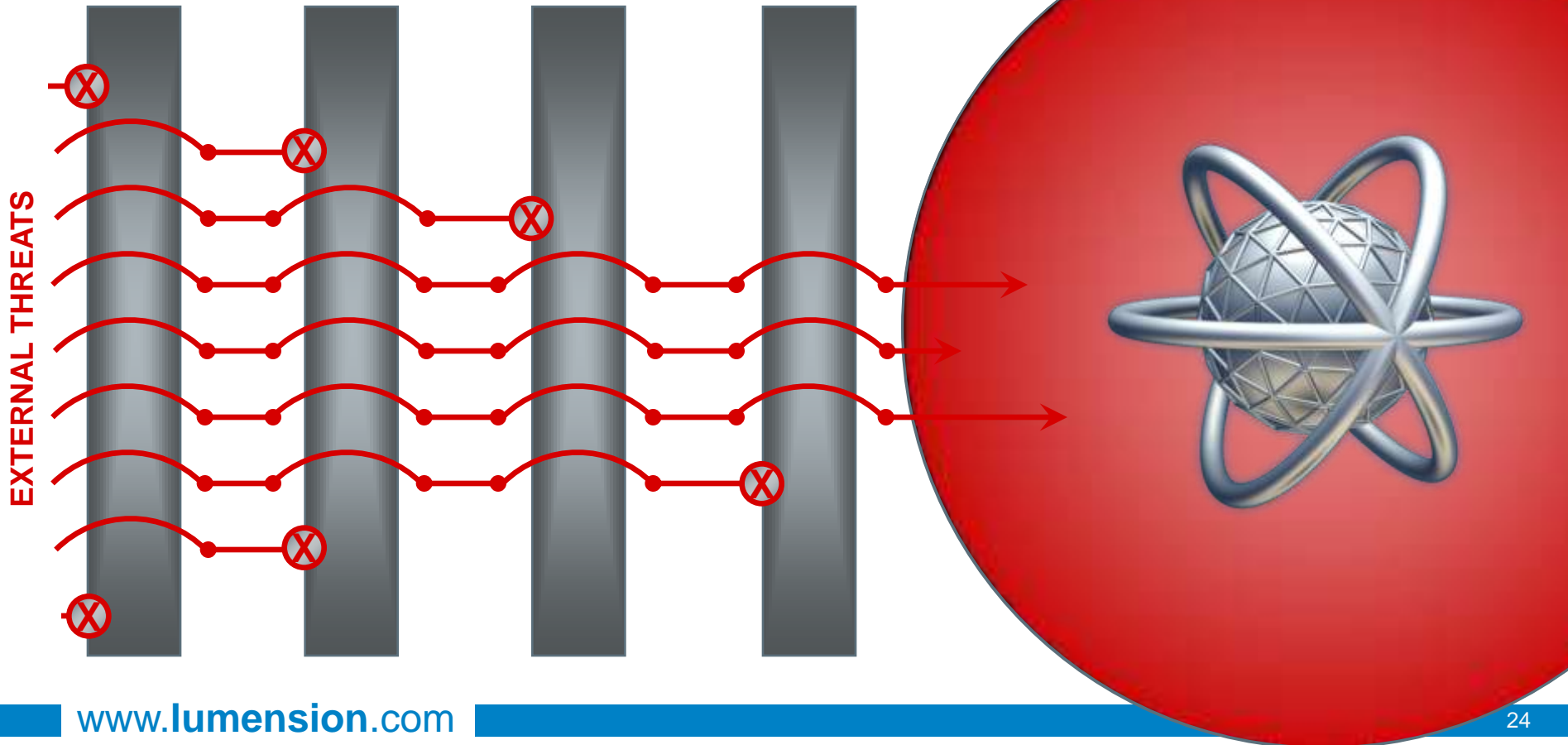




## Security Add-on Solutions

## The CORE / Sources of Risk

Desktop Firewall    Anti-Virus Spyware    IPS Heuristics    Application Blacklist



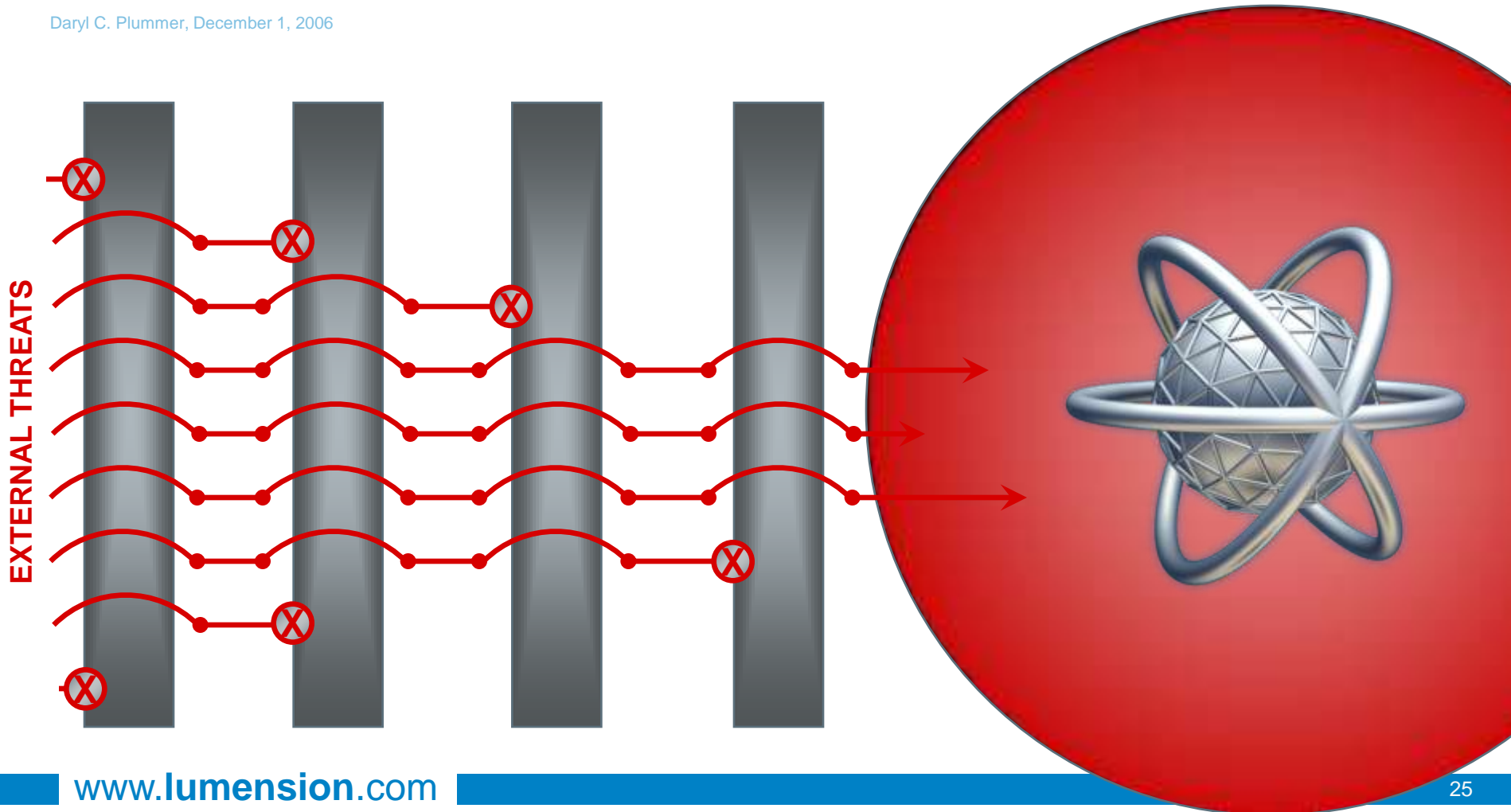
# UPC – Traditional Approaches



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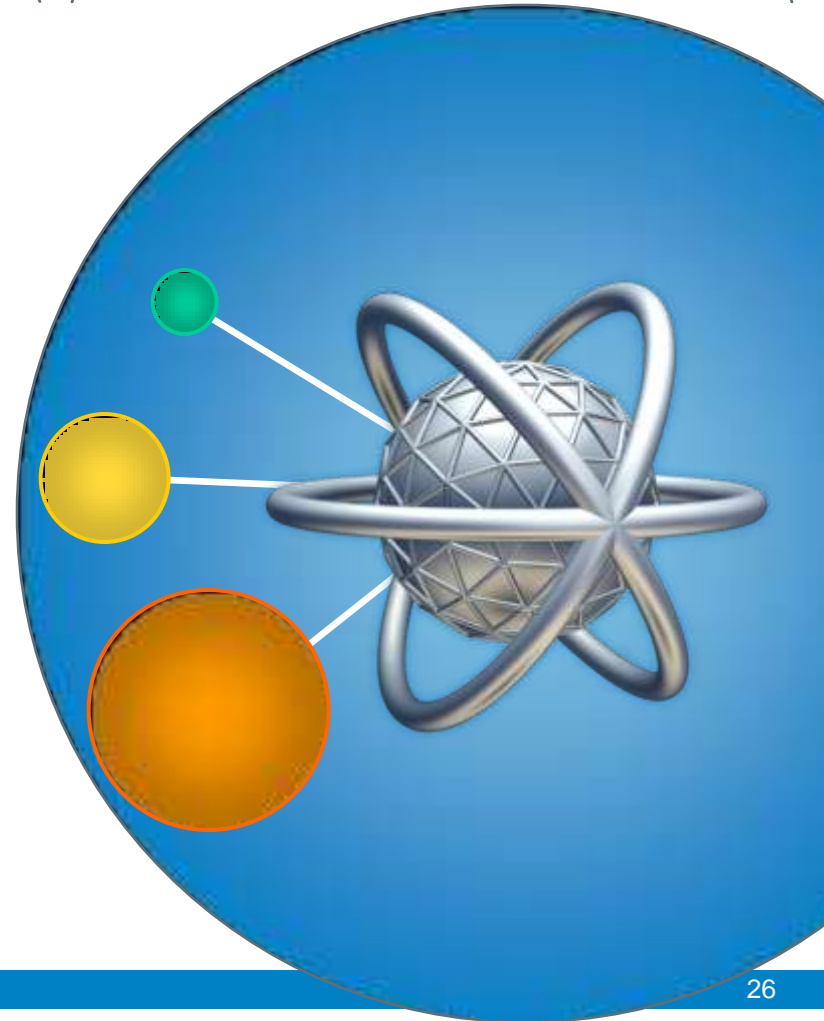




## Sources of RISK

- Kernel Access Control
- Software Vulnerability
- Configuration Vulnerability

## The CORE



# UPC – Lumension’s Operational Approach



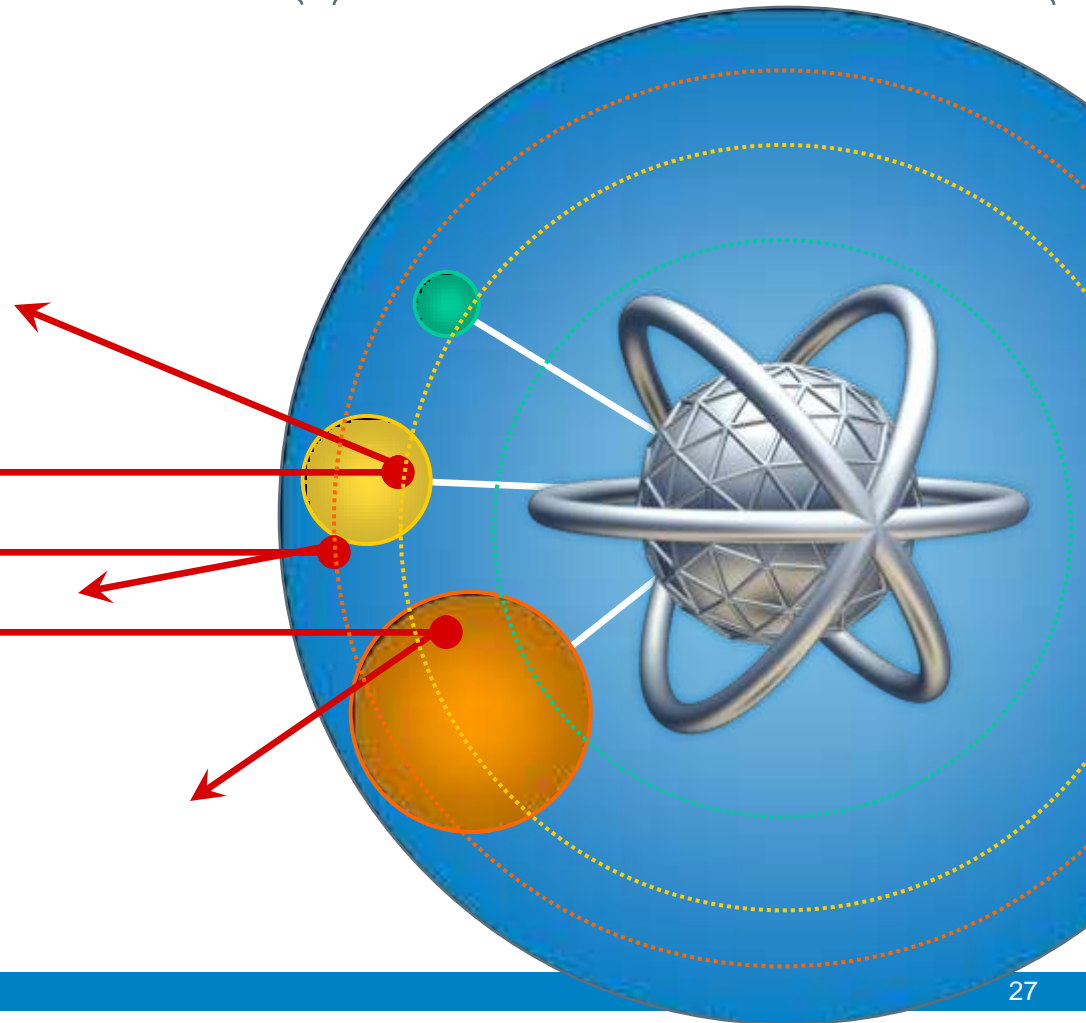
External Threats: Mitigate Risks at the Source

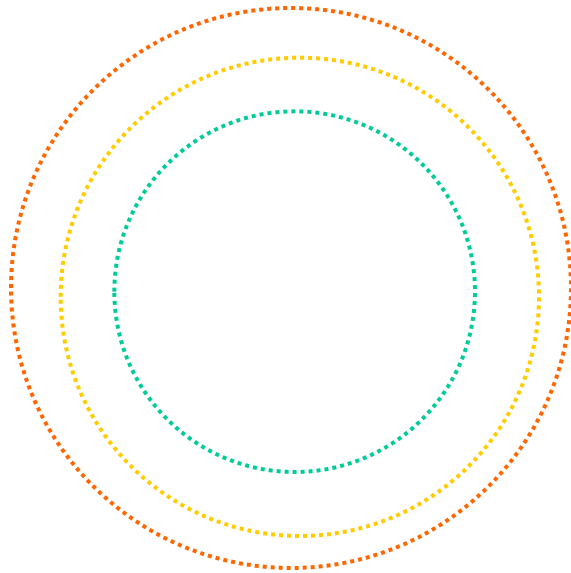
**Backdoor Security**

The CORE

- Application Control
- Behavioral Integrity
- Configuration Integrity

EXTERNAL THREATS





# UPC – Lumension's Operational Approach



## Internal Threats: Enforce Application & Device Use Policies

### Machine Security

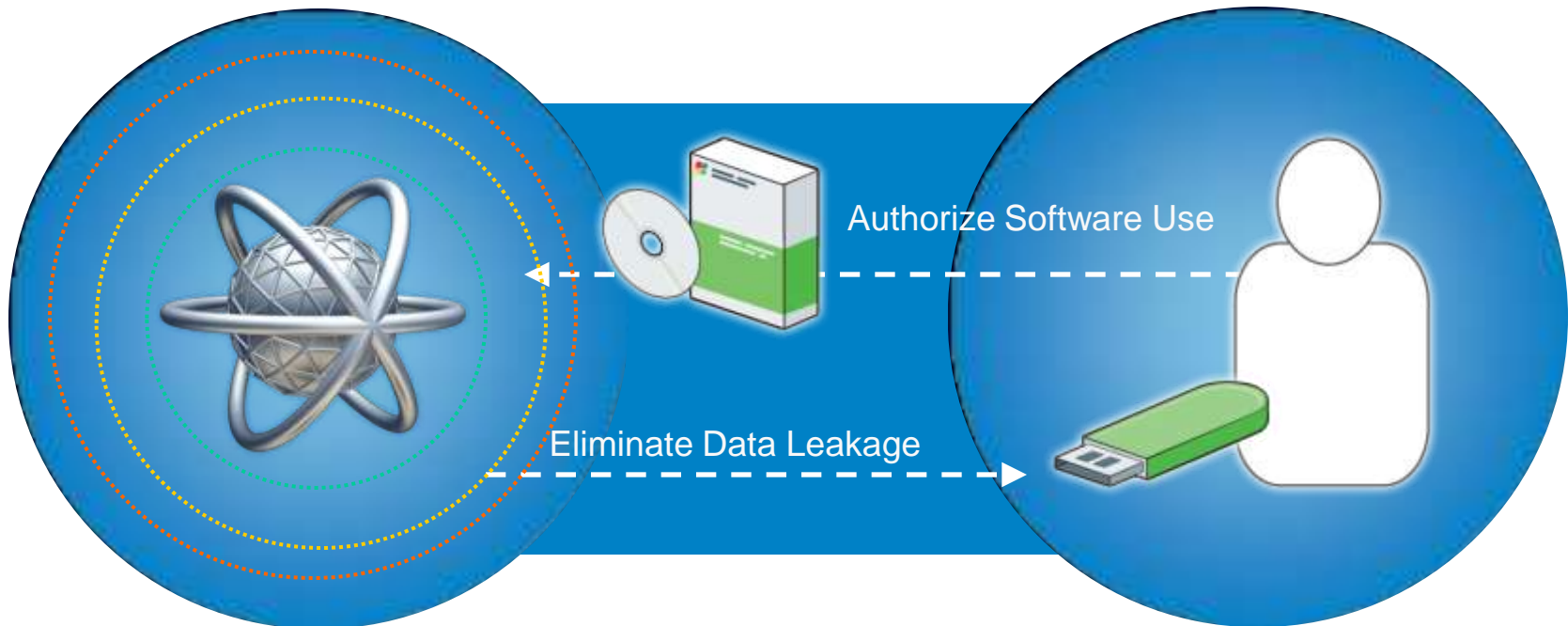
Application Control  
Patch Management  
Security Configuration  
Device Control (Wireless – Future)

### User Security

Application Control  
& Device Control

### Data Security

Device Control  
\* Content Monitor Filter : Websense  
\* Encryption : PGP  
\* Partners \*



# Powerful Universal Platform – Common Actions



- ▣ *Discover*
- ▣ *Assess*
- ▣ *Remediate*
- ▣ *Deploy*
  - Patch, Software, Scripts, Agent (SW)
- ▣ *Monitor*
  - Audit/Log, Shadow Data, User Actions
- ▣ *Enforce*
  - Baseline
    - Software Version, Configuration, Device, Authorized Applications
  - Block = devices, application
  - Ask = trusted users
- ▣ *Alert*
  - Admin Alert, Message to End-user
- ▣ *Report*



Lumension Security Platform  
*Deliver – Monitor – Enforce - Report*



## Policy Requirements

## Solution

### Discover & Assess

all assets for policy compliance



PatchLink  
Scan

### Remediate and Maintain Software

to mitigate threats



PatchLink  
Update

### Assess Security Configurations

for compliance



PatchLink  
SCM

### Enforce Security Configurations

on all endpoints



PatchLink  
Developers Kit

### Enable Authorized Device Use/Behaviors

for all peripheral devices



Sanctuary  
Device  
Control

### Impose Authorized Software Use

for all applications



Sanctuary  
Application  
Control



# Moving From the Reactive to the Proactive Endpoint Security Model

Q&A

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