



**NetApp™**

# “The Angels Are Singing When the Phone Ain’t Ringing”: NetApp’s Multi-Faceted Approach to eService

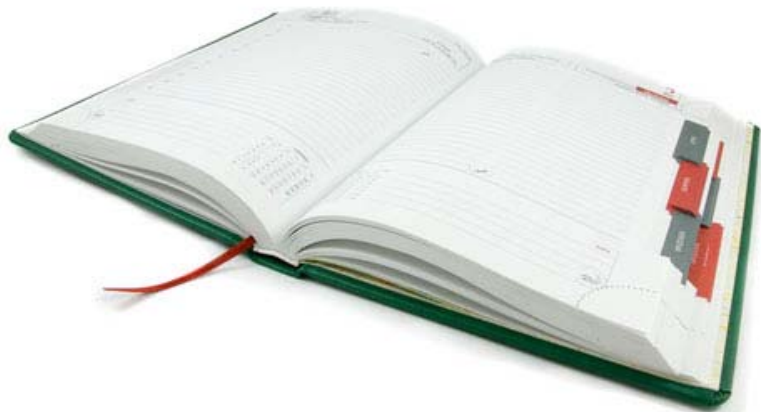
Go further, faster™

Nick Howard  
Sr. Director, Operations  
NetApp Global Services





# Agenda



- About NetApp and NetApp Global Services
- Our eService “Universe”
- NOW and KnowledgeBase
- AutoSupport: NetApp’s “Crown Jewel”
- The Power of Proactive Support
- The Optimization Opportunity
- A Look Ahead: Customer Self-Healing



# NetApp Today

**FORTUNE**  
**100 BEST**  
**COMPANIES**  
**TO WORK FOR**  
**2008**  
**2007**  
**2006**  
**2005**  
**2004**  
**2003**

- Founded in 1992
- Headquarters: Sunnyvale, CA
- 6,000+ employees
- Distribution into 138 countries
- Over 95,000 installed systems
- \$3.3 B balance sheet;  
\$1.3 B in cash and investments
- No long-term debt
- S&P 500, NASDAQ 100,  
Fortune1000



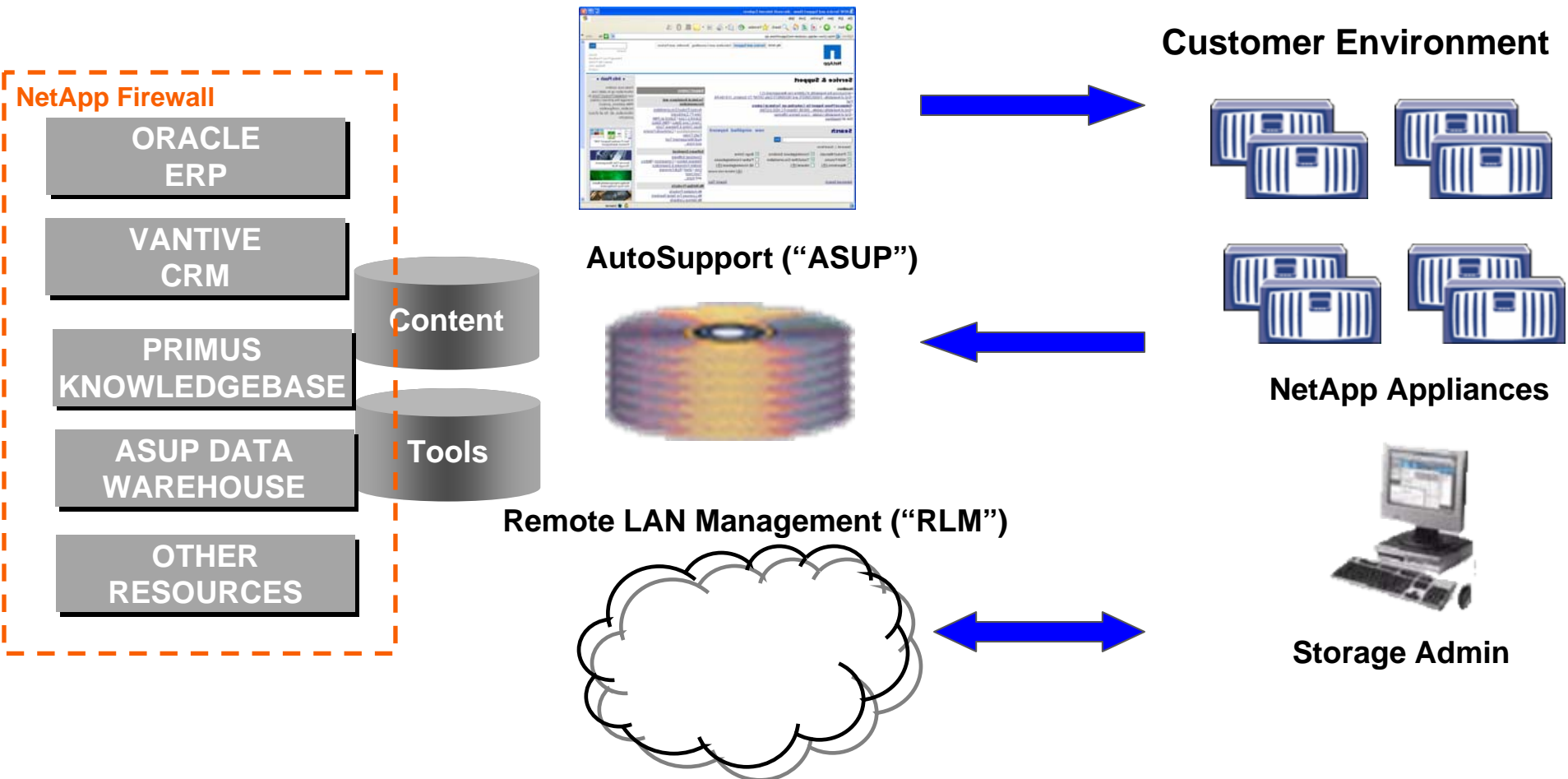
# “Not tonight....I have a headache”

- There is a time and place for Customer “intimacy”
- When a customer is hurting, “time to resolve” is everything; intimacy only matters if it is speeding problem resolution
- Customers value intimacy when the problem is complex or is adversely impacting their business
- Customers are smart; many of their problems are easily and most efficiently solved electronically



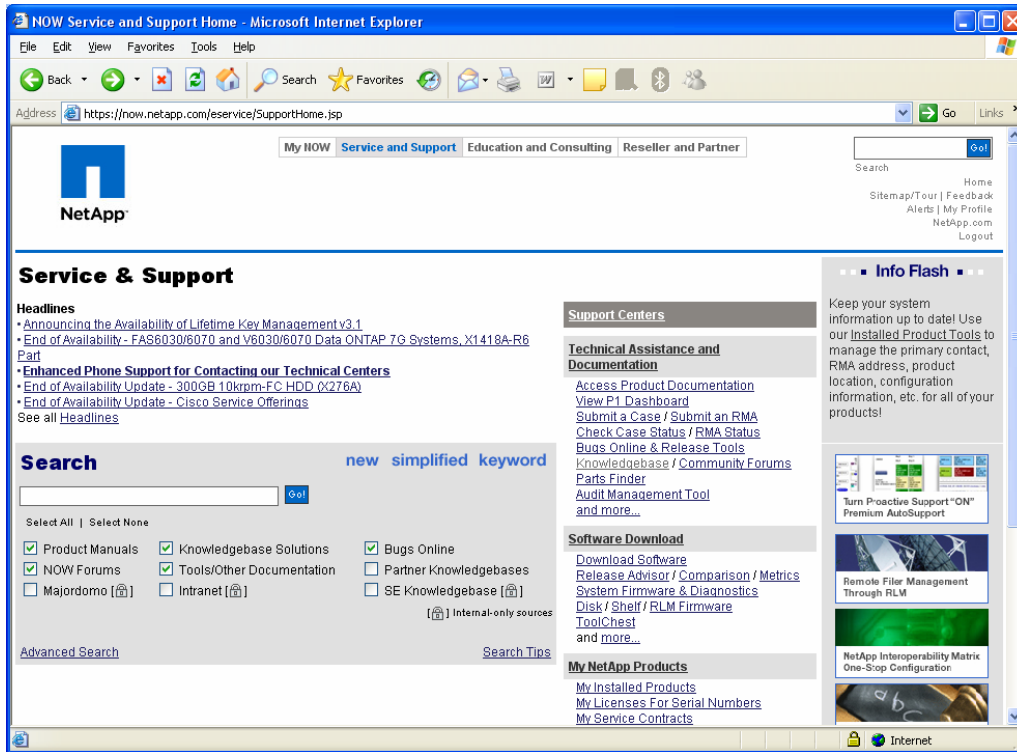
# The NetApp eService “Universe”: The Power of Customer Integration

## NetApp on the Web (“NOW”)





# NetApp on the Web (“NOW”)



- Manage Installed Base
- Access Technical Documentation
- Initiate and Manage a Support Case
- Access the KnowledgeBase
- Download Software & Tools

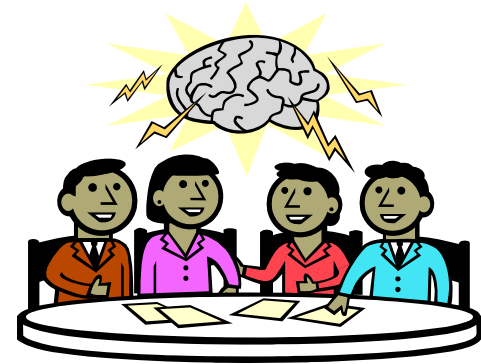
- **Average of 71,000 visitors per month**
- **275,000+ sessions per month**
- **99%+ availability**
- **Industry award winning**
- **Consistently high user satisfaction ratings**



# Knowledge is Power: NetApp's KnowledgeBase

## Benefits

- Case deflection/avoidance
- Improved "Time to Resolve"
- Organizational Productivity
- Improved Customer Satisfaction



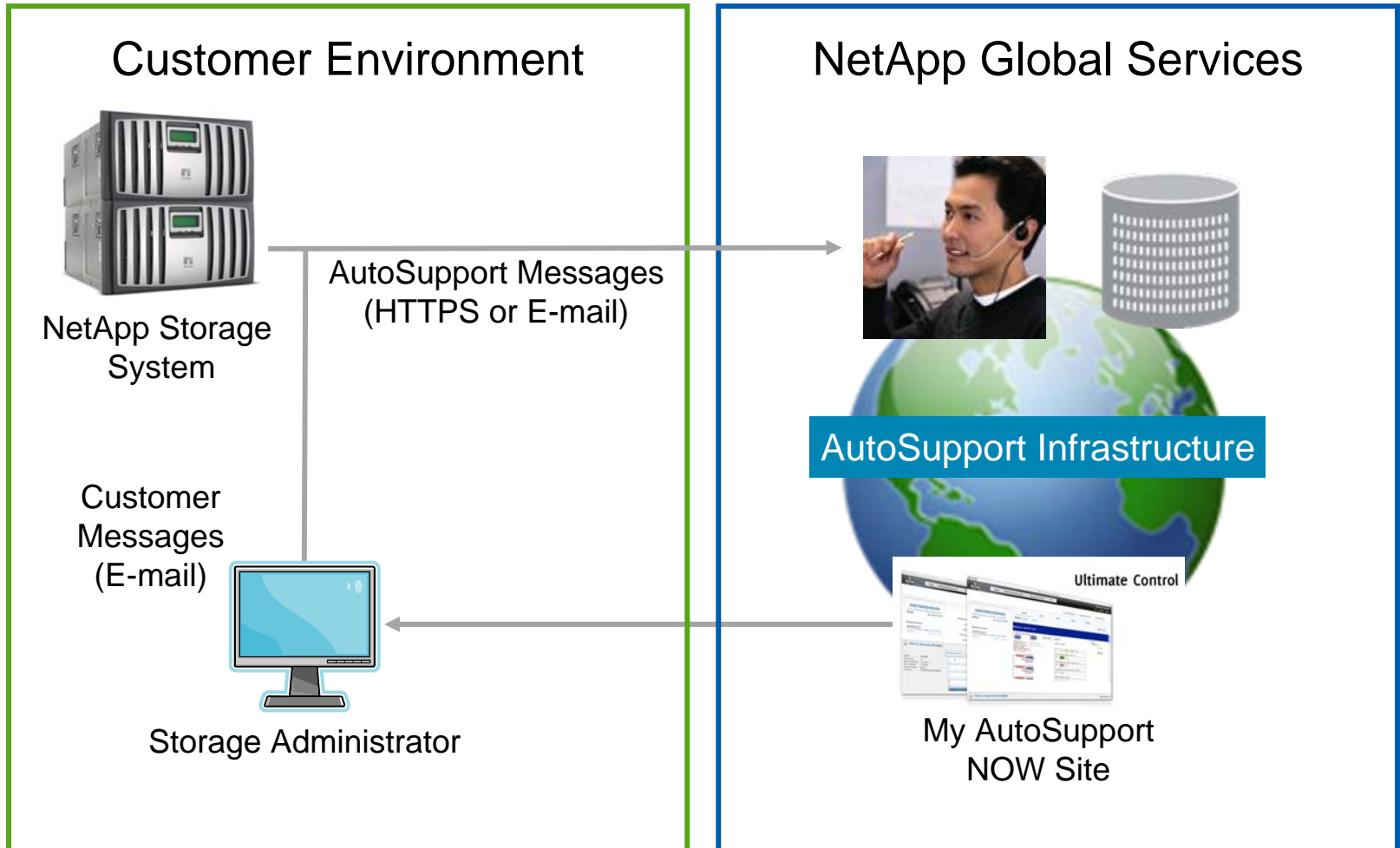
## Investments Required

- Encouraging Knowledge Contribution
- Synthesizing, Organizing, Cleaning and Publishing Knowledge Articles
- Continuous Focus on Scalable "Process and Programs" (not "Systems")



# AutoSupport: NetApp's "Crown Jewel"

## How it works







# AutoSupport Customer Benefits

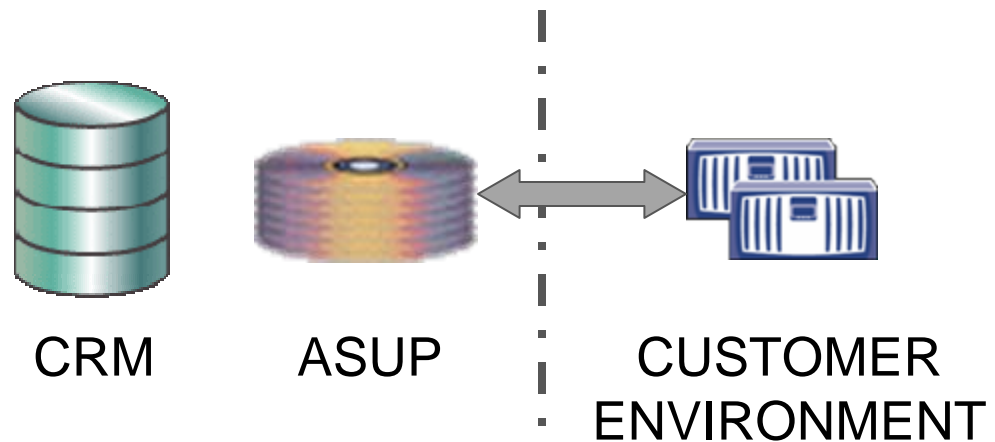
- Minimizes customer's manual support overheads
- Improves problem resolution time

| Problem Resolution Time | Resolution Rate of Cases <i>with</i> AutoSupport Information | Resolution Rate of Cases <i>without</i> AutoSupport Information |
|-------------------------|--|---|
| < 1 day                 | 52%  | 35%   |
| 1-2 days                | 9%   | 9%  |
| 3-5 days                | 16%  | 14%   |
| 6-21 days               | 20%  | 29%   |
| >21 days                | 3%   | 13%   |
| <b>Total</b>            | <b>100%</b>  | <b>100%</b>   |

**Time to resolution on customer cases requiring manual triage by NetApp Support personnel**

# The Power of Customer Integration: “End-To-End” AutoSupport

- Identify possible or imminent failure
- Open case
- Dispatch part
- Dispatch engineer
- Close case
- Inform customer
- Mail KB article (when applicable)



*And they didn't even know they had a problem...*



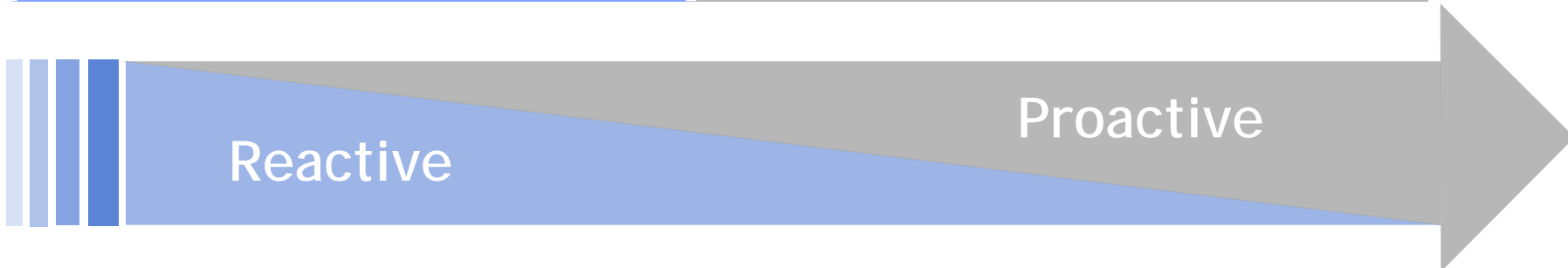
# The AutoSupport Evolution Continues...

## 2006 and Before

- Tool for NetApp Support
- Critical for problem diagnostics
- Individual device oriented
- My AutoSupport Dashboard

## 2007 and Beyond

- Tool for NetApp & Customers
- More proactive problem prevention
- Site wide information overview
- Configuration, change, and event management
- Enhance customer self service
- Optimization opportunities





# Differentiating Support Offerings: “Premium AutoSupport”

## Features

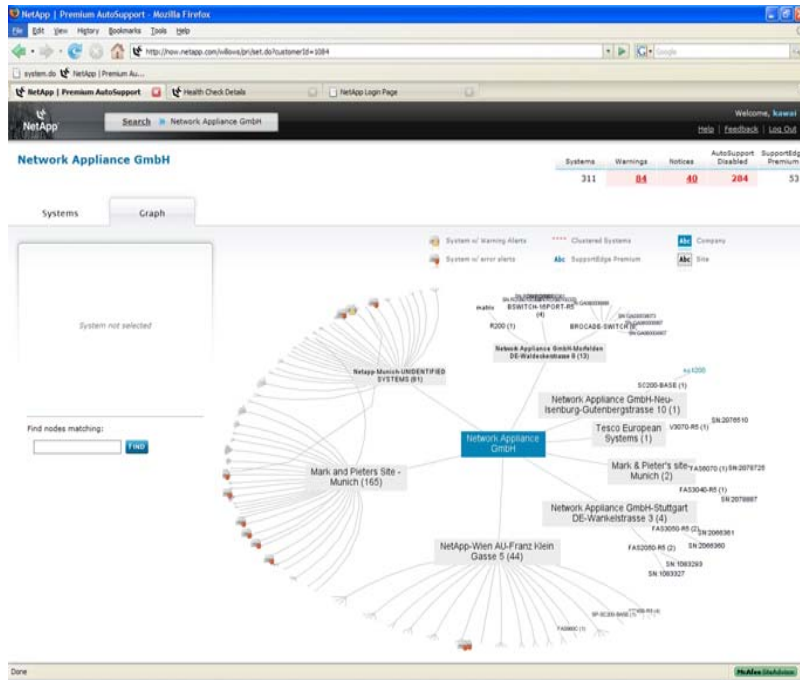
- Visualize Storage Environments
- Real-time Event Management
- Proactive Health Checks
- Configuration Management & Benchmark Comparisons
- Upgrade Planning Tools

## Customer Benefits

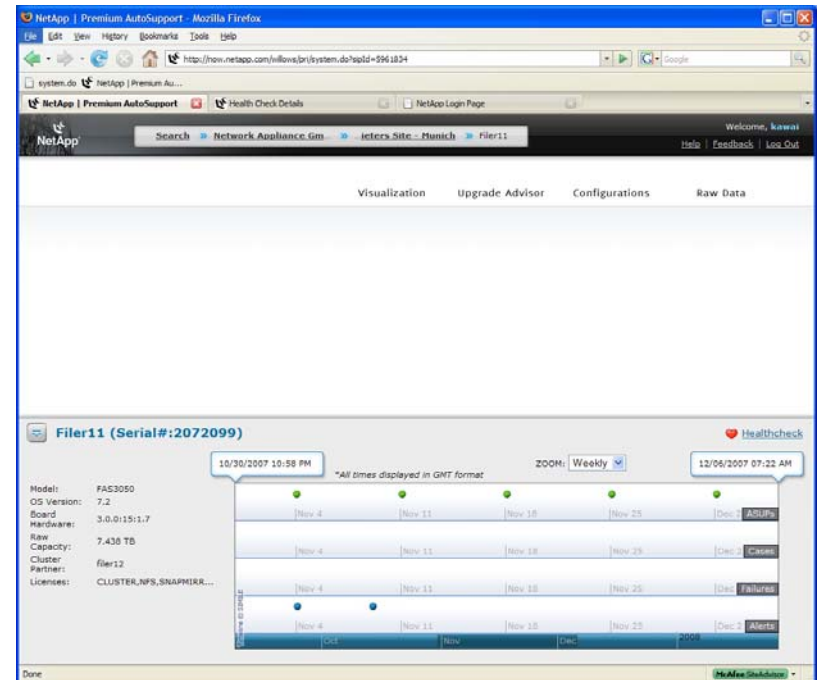
- Enables Self-Service Proactive Support
- Improved Problem Avoidance
- Improves Customer’s Operational Efficiency



# Differentiating Support Offerings: “Premium AutoSupport”



Visualization, Discovery and Asset Management



Event Management



# Differentiating Support Offerings: “Premium AutoSupport”

The screenshot shows the 'Health Check Details' page in a browser. It displays a 'Health Check Analysis' for a Filer11 system. Below the analysis, there are several sections:

- Non-disruptive Upgrade Analysis Available for Clusters:** A table with columns for 'disk Name', 'Description', and 'Related Information & Links'. It lists a warning for 'sam upgrade ndu duCfWRev'.
- System Level Warnings:** A table with columns for 'Warning Name', 'Description', and 'Related Information & Links'. It lists warnings for 'rtn driver hourly stats', 'sam fw not latest mbFwRev', and 'sam misconfig licenseUnmatched SNAPMIRROR'.
- Summary of Disks Requiring Firmware Upgrade:** A table with columns for 'Disk Warning Name', 'Disk Model', 'Fw Rev', 'Latest Fw Rev', and 'Number of Disks'. It lists a warning for 'sam fw not latest duCfWRev' with 56 disks requiring an upgrade.

Proactive Health Checks

The screenshot shows the 'Configuration Discovery' page in a browser. It displays a 'Physical System View' for a system with ID 2007080716159. The view includes a tree diagram of the system components and a table of hardware details.

| Slot    | Model  | Serial             |
|---------|--|--------------------|
| slot 0  | PCI Host Adapter (DualChannel, Cluqps 2122 rev. 3) | 0x1000000000000000 |
| slot 1  | PCI Host Adapter (DualChannel, Cluqps 2122 rev. 3) | 0x1000000000000000 |
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Configuration Discovery



# Differentiating Support Offerings: “Premium AutoSupport”

NetApp | Willows - Mozilla Firefox

Asup ID: 2007072859825      2007080512208

Date: 20070729-00:00:01      20070805-08:04:20

Hostname: FAS3020-36      FAS-3020-36

Serial Number: 3046628      3046628

System ID: 0101189020      0101189020

Model: FAS3020      FAS3020

OS Version: 7.2.2      7.2.2

**Section: SYSTEM OPTIONS**

Description: GLOBAL SETTINGS

|                             |     |    |
|-----------------------------|-----|----|
| nfs_hide_snapshot           | off | on |
| nfs_per_client_stats.enable | off | on |

**Section: SYSTEM**

Description: GLOBAL SETTINGS

|                     |  |  |
|---------------------|--|--|
| AutoSupport Subject | Cluster Notification (WEEKLY_LOG) INFO | Cluster Notification (CLUSTER TAKEOVER COMPLETE MANUAL) INFO |
| Cluster node state  | UP                                     | TAKEOVER   |
| Is WEEKLY LOG       | T                                      | F  |

**Section: DISK**

Description: Device Bay Number: 0; Device Label: PARTNER; Device Model: X274\_HPVT146F10; Shelf ID name: 2; Common Path Name: 0b

|                    |   |           |
|--------------------|---|-----------|
| Right sized blocks | 0 | 278528000 |
| Right sized MB     | 0 | 136000    |

Description: Device Bay Number: 0; Device Label: PARTNER; Device Model: X274\_S10K7146F10; Shelf ID name: 1; Common Path Name: 0b

|                    |   |           |
|--------------------|---|-----------|
| Right sized blocks | 0 | 278528000 |
| Right sized MB     | 0 | 136000    |

Description: Device Bay Number: 1; Device Label: PARTNER; Device Model: X274\_HPVT146F10; Shelf ID name: 2; Common Path Name: 0b

|                    |   |           |
|--------------------|---|-----------|
| Right sized blocks | 0 | 278528000 |
| Right sized MB     | 0 | 136000    |

Configuration Compare

NetApp | Willows - Mozilla Firefox

Home » Network Appliance Gml » Network Appliance-Gra » C4DES1SYN33

Visualization      Tools      Configurations

2007081167092  
C4DES1SYN33      undefined

Target Version: 7.2.3

| Description | batman                              | robin                               |
|-------------|-------------------------------------|-------------------------------------|
| warning 1   | <input checked="" type="checkbox"/> |                                     |
| warning 2   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| warning 3   | <input checked="" type="checkbox"/> |                                     |
| warning 4   |                                     | <input checked="" type="checkbox"/> |
| warning 5   |                                     | <input checked="" type="checkbox"/> |

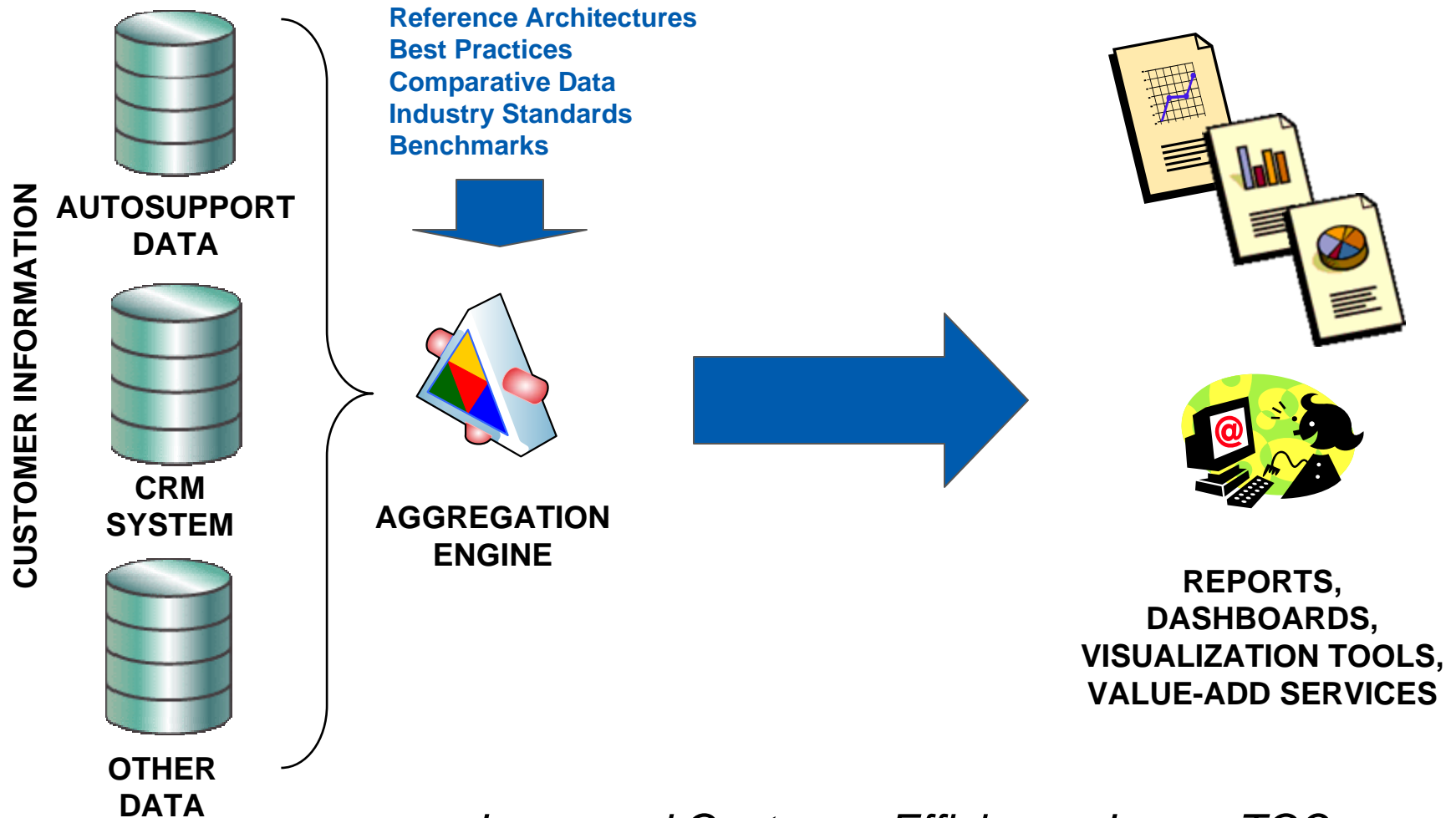
Method: UNIX

Please follow these steps to upgrade your system(s):  
[Print Directions](#)

C4DES1SYN33 (Serial#:1079632)      Healthcheck

Upgrade Planning

# The Optimization Opportunity: Improving Customer Efficiency



*Increased Customer Efficiency, Lower TCO*



# The Future: Smart Devices and Self Healing

