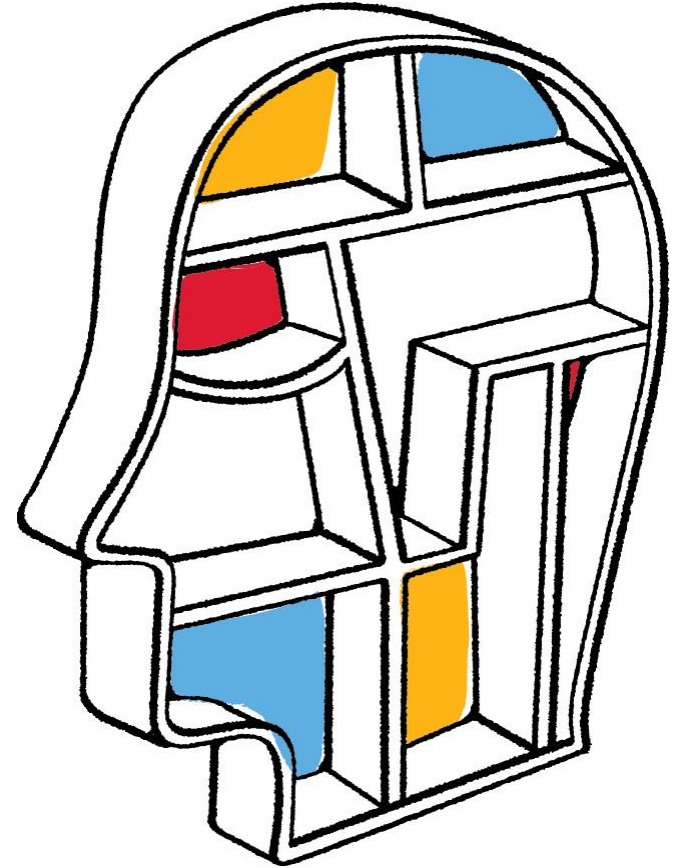




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Security with Clustered Data ONTAP (cDOT)

Customer Presentation
October 2015





Our Approach to Security



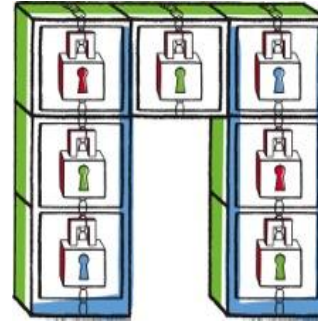
Secure Protocols

Securely access storage systems and transmit data



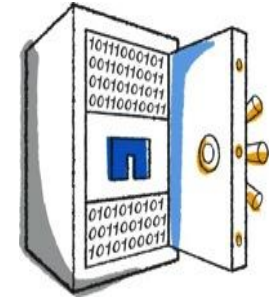
Antivirus

Support for antivirus scanning



Secure Multi-Tenancy

Secure separation of workloads



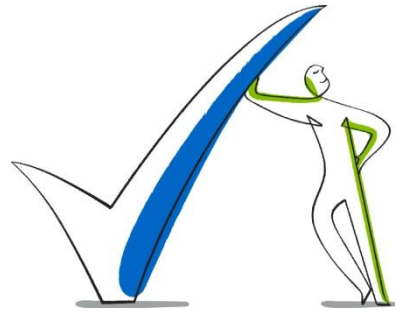
Encryption

Protect data at rest or in transit



FPolicy

File based auditing and policy enforcement



Industry Certifications

Verify NetApp products meet industry requirements and regulations



3rd Party Partnerships

Best of breed technology partnerships add additional value



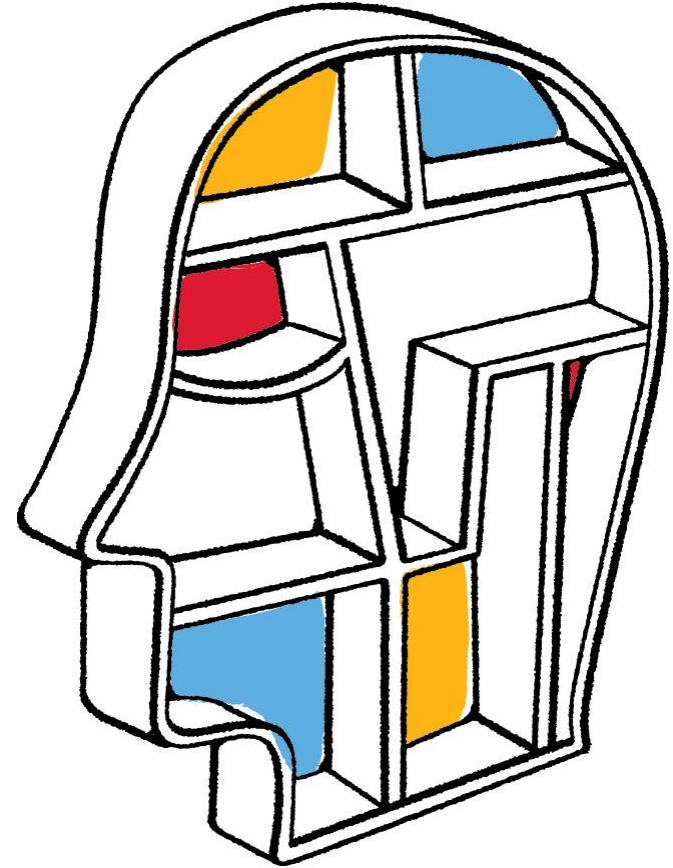
NDO

None- Disruptive Operations



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Non-Disruptive Operations (NDO)





Унифицированные системы хранения данных NetApp FAS

- Гибридные среды и решения all-flash
- Интеграция с облачной средой
- Поддержка программно-определяемых СХД
- Массовая масштабируемость
 - Вертикальное масштабирование
 - Горизонтальное масштабирование

СХД FAS2520

504 ТБ
16 ТБ гибридная
флеш-память
96 ТБ all-flash

СХД FAS2552

749 ТБ
16 ТБ гибридная
флеш-память
154 ТБ all-flash

СХД FAS2554

864 ТБ
16 ТБ гибридная
флеш-память
154 ТБ all-flash

FAS8020

2880 ТБ
24 ТБ гибридная
флеш-память
384 ТБ all-flash

FAS8040

4320 ТБ
48 ТБ гибридная
флеш-память
384 ТБ all-flash

FAS8060

7200 ТБ
72 ТБ гибридная
флеш-память
384 ТБ all-flash

FAS8080 EX

8640 ТБ
144 ТБ гибридная
флеш-память
384 ТБ all-flash

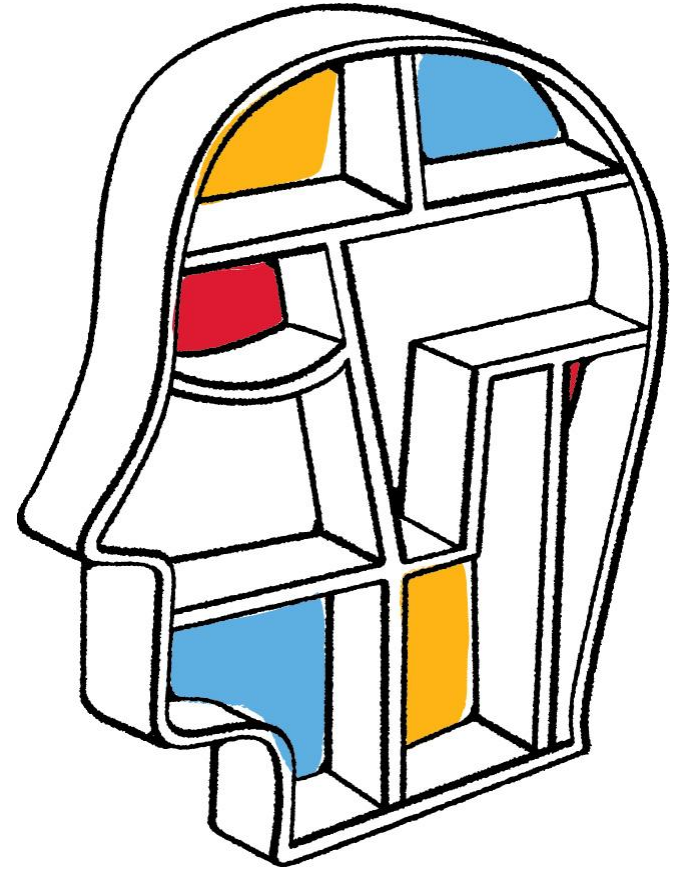
Унификация и упрощение процесса управления СХД
посредством ОС Data ONTAP®

С помощью ПО FlexArray СХД FAS8000 может управлять системами EMC, HP, HDS, и E-Series



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Off-Box Antivirus: Clustered Data ONTAP 8.2.1 and higher



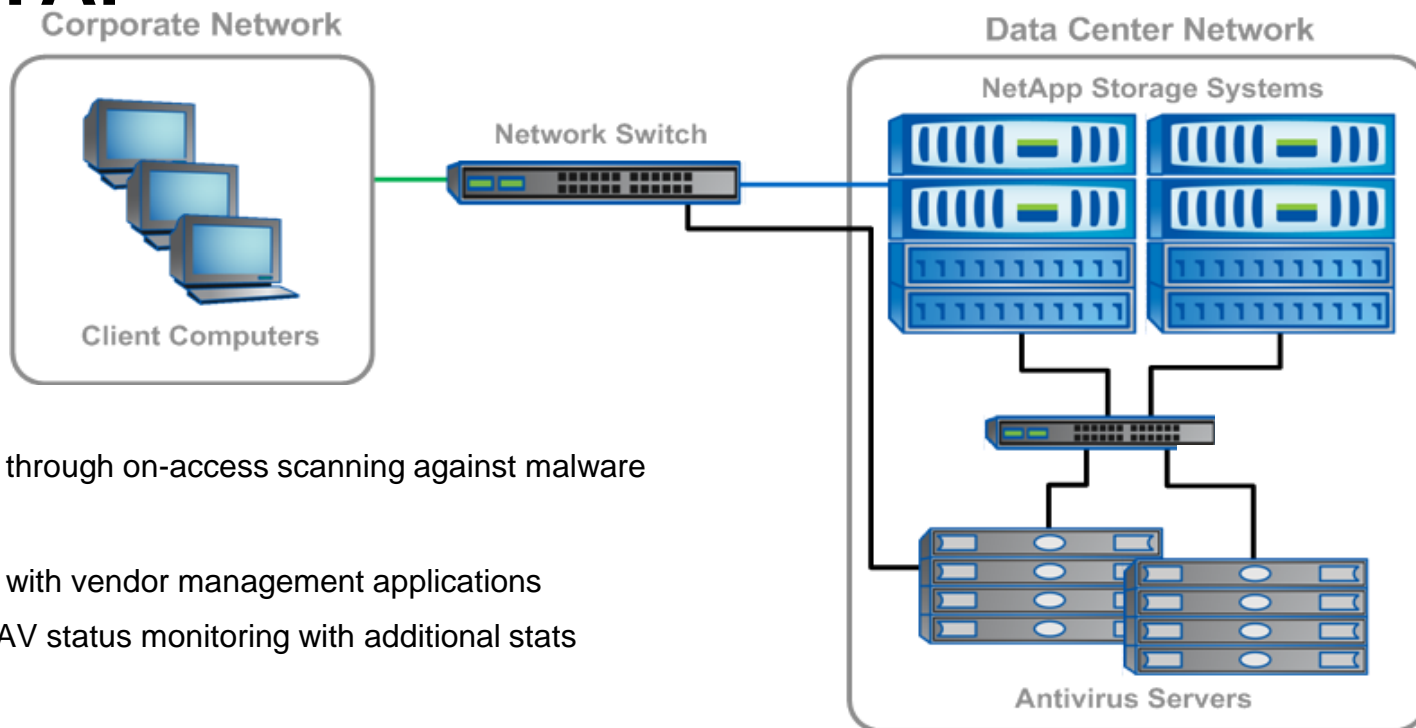


Off-Box Antivirus Overview

- Off-box antivirus (AV)
- The vendors' antivirus scan engine will run on Windows Server[®], and it will connect to NetApp[®] controller for scanning
- Current release supports on-access scan for CIFS only
- AV is an SVM-wide feature



Off-Box Antivirus for Clustered Data ONTAP



■ Security

- Protection through on-access scanning against malware

■ Management

- Integrated with vendor management applications
- Improved AV status monitoring with additional stats

■ Performance and availability

- Supports multiple AV scanners to provide high availability; better performance scaling by adding external servers
- In-memory cache to avoid repetitive scanning

■ Vendors supported

- McAfee, Symantec, TrendMicro support are aligned with 8.2.1



Enhancements



Flexibility and control

- Ability to exclude files based on size and path.
- Scan-only files opened with execute access (CIFS only).
- File ops profiles with granular control.



Security

- No more anonymous user access required.
- Privileged user should be specified during controller configuration for connecting to the storage system. Any valid domain user can be specified.
- AV scanner and AV connector service must be running as privileged user.
- Total connection control from storage controller.



Others

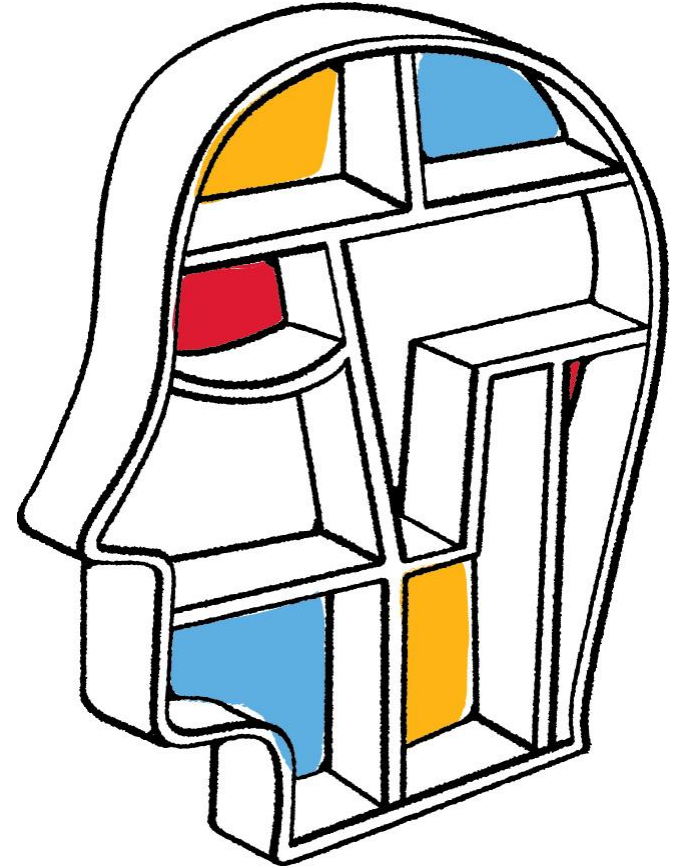
- Scanner update, doesn't generate instant burst due to file scan state invalidation.
- Rolling update support for the AV scan engines.





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Microsoft SMB file share integration





Microsoft: NetApp is Partner of the Year

- Modern Datacenter: Customer Focus Partner of the Year 2015
- FlexPod Wins Twice at Microsoft's Annual Partner of the 2014/2015 Year Awards
- Management and Virtualization Partner of the Year 2014
- Public Sector Partner of the Year 2014
- Server Platform Partner of the Year 2013
- Private Cloud Partner of the Year 2012
- NetApp Named Microsoft Storage Solutions Partner of the Year 2009



CIFS/WFS Features New to Clustered Data ONTAP

Feature	Clustered Data ONTAP 8.2
Highest SMB Version Supported	SMB3.0
Access-Based Enumeration	+
Microsoft® Previous Versions	+
Local Users and Groups	+
Roaming Profile, Folder Redirection	+
Offline Folder (Client-Side Caching)	+
SMB Signing (Server Side)	+
FPolicy®	+*
File Access Auditing	+
FSecurity	+**

* No pass-through read support ** Renamed as “File-Directory”



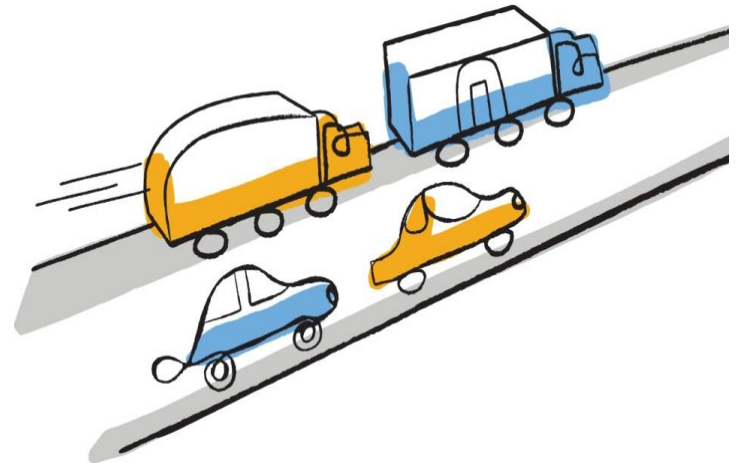
CIFS/WFS Features New to Clustered Data ONTAP

Feature	Clustered Data ONTAP 8.3.1
Off-Box Antivirus	+
LDAP Over SSL/start-TLS	+
Multidomain User Mapping	+
Separate CIFS/AD Licensing	+
SMB3 Encryption	+
BranchCache	+
LIF autolocation	+
MMC to manage CIFS	+



SMB 3.0

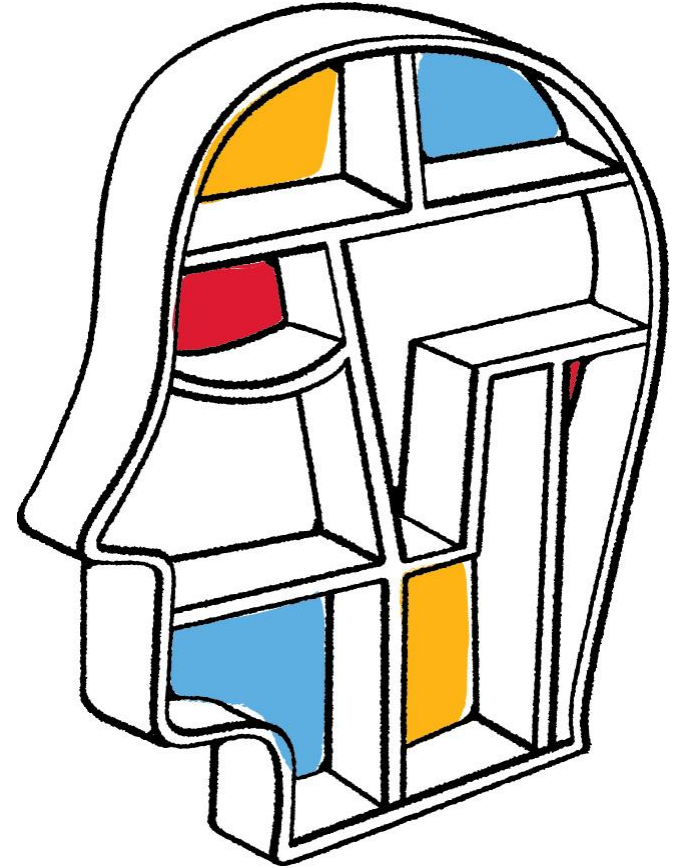
- Continuous availability shares
- Cluster client failover
- Witness protocol
- Copy offload
- Remote VSS





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FPolicy in Clustered Data ONTAP





FPolicy

NetApp® clustered Data ONTAP® 8.2 brings FPolicy® support. The following use cases are supported:

- File archiving
- File access monitoring
- File access auditing
- File blocking
- Quota on directories



FPolicy Partners

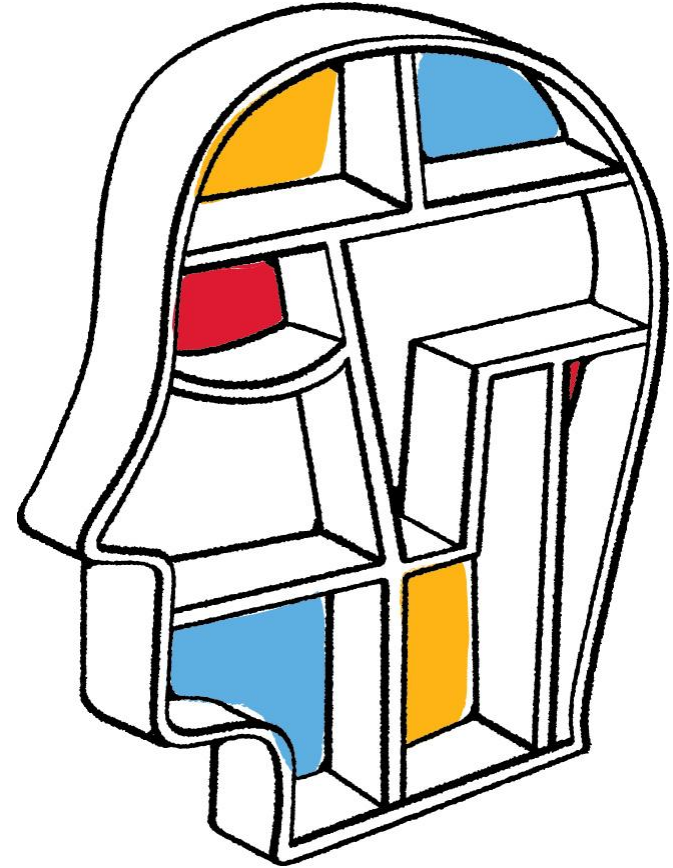
In line with 8.2 GA release:

- IN-BOX cDOT FPolicy
- NTP for quota and file access monitoring
- Varonis and StealthBits for auditing



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File Access Auditing



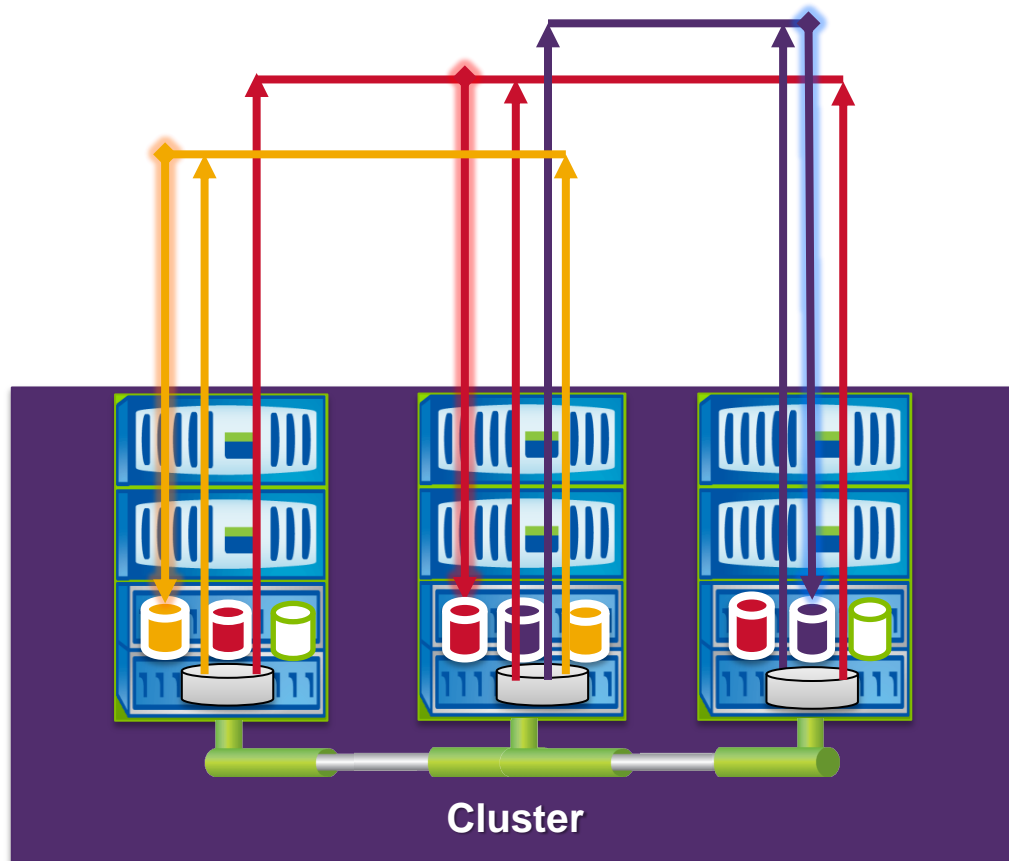


Why Is Access Audit Required?

- **Monitoring:** Actively monitors access to protected resources and has the ability to take action (perhaps automatically) when necessary
- **Evidence:** Has the ability to prove that a troubling security event did (or did not) occur
- **Compliance:** Gives customers the means to comply with legal record-keeping requirements (Sarbanes-Oxley, GLBA, HIPAA, and so on)
- **Recovery:** Detailed auditing of a damaging event allows for rolling back to a known good state



Log Consolidation: Centralized Audit Information



- Audit records for a storage virtual machine are collated from different staging areas to administrator-configured path.
- Can be accessed by mounting path as CIFS share or NFS export.



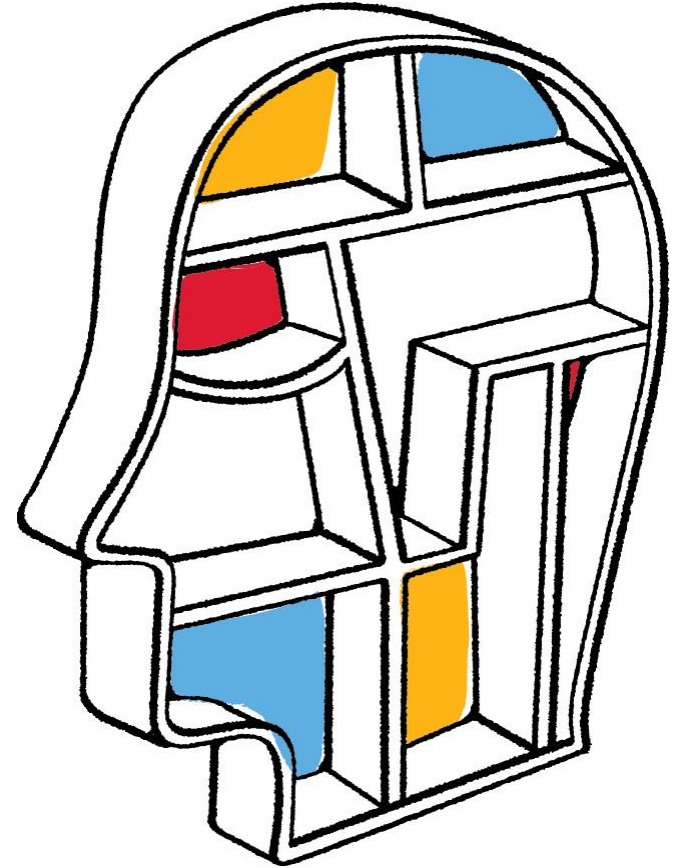
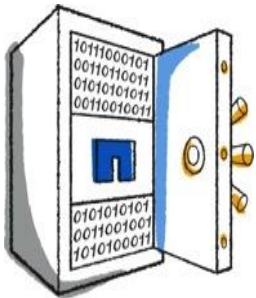
What Do We Audit?

- Log both successful and unsuccessful accesses to data as defined by NTFS SACLs and NFSv4 audit ACLs:
 - NTFS SACLs can be set from Windows® CIFS client
 - Data ONTAP® also supports FSecurity user to allow setting SACLs on the storage system
- In later releases:
 - Log both logon and logoff events for all protocols, if configured to do so



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Encryption





NetApp Encryption and Key Management Solutions

Meet Governance, Risk, and Compliance Requirements

NetApp Storage Encryption



Full Disk Encryption

- Encrypts all data
- Operates seamlessly with Data ONTAP® storage efficiency features

SafeNet StorageSecure



Storage Network Encryption

- Self-contained hardware-based encryption, key management, identity and access management and role-based administration

Protect Your Data from Unauthorized Disclosure



SafeNet KeySecure



Model k460

- Hardware appliance provides robust enterprise key lifecycle management, centralizing management of up to one million encryption keys/policies per cluster.

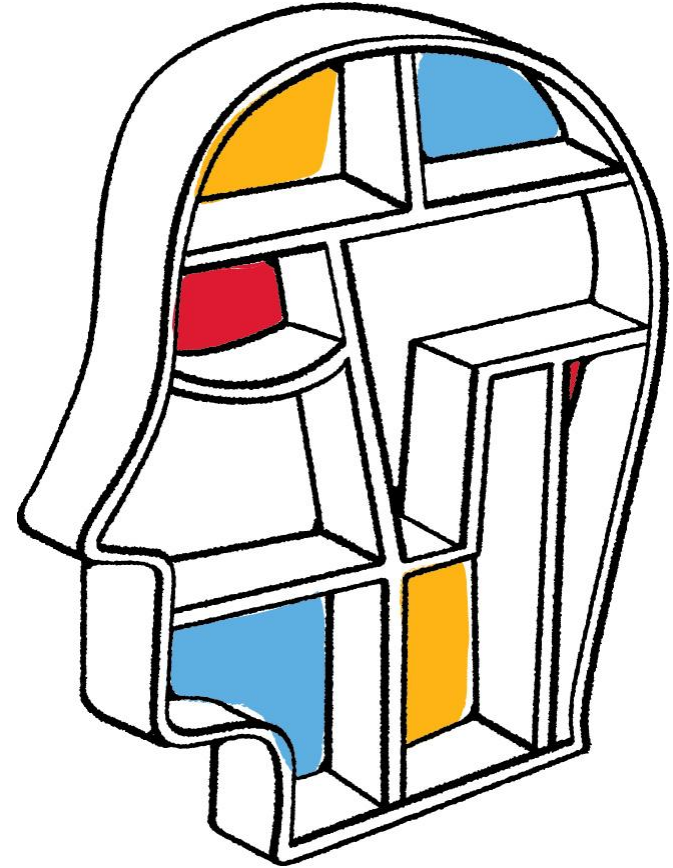
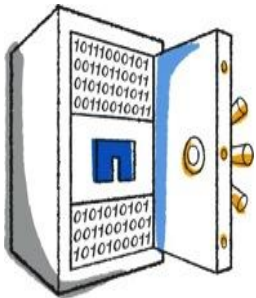
Model k150v

- Provides customers with a virtual appliance that manages and securely stores encryption keys in clustered environments.

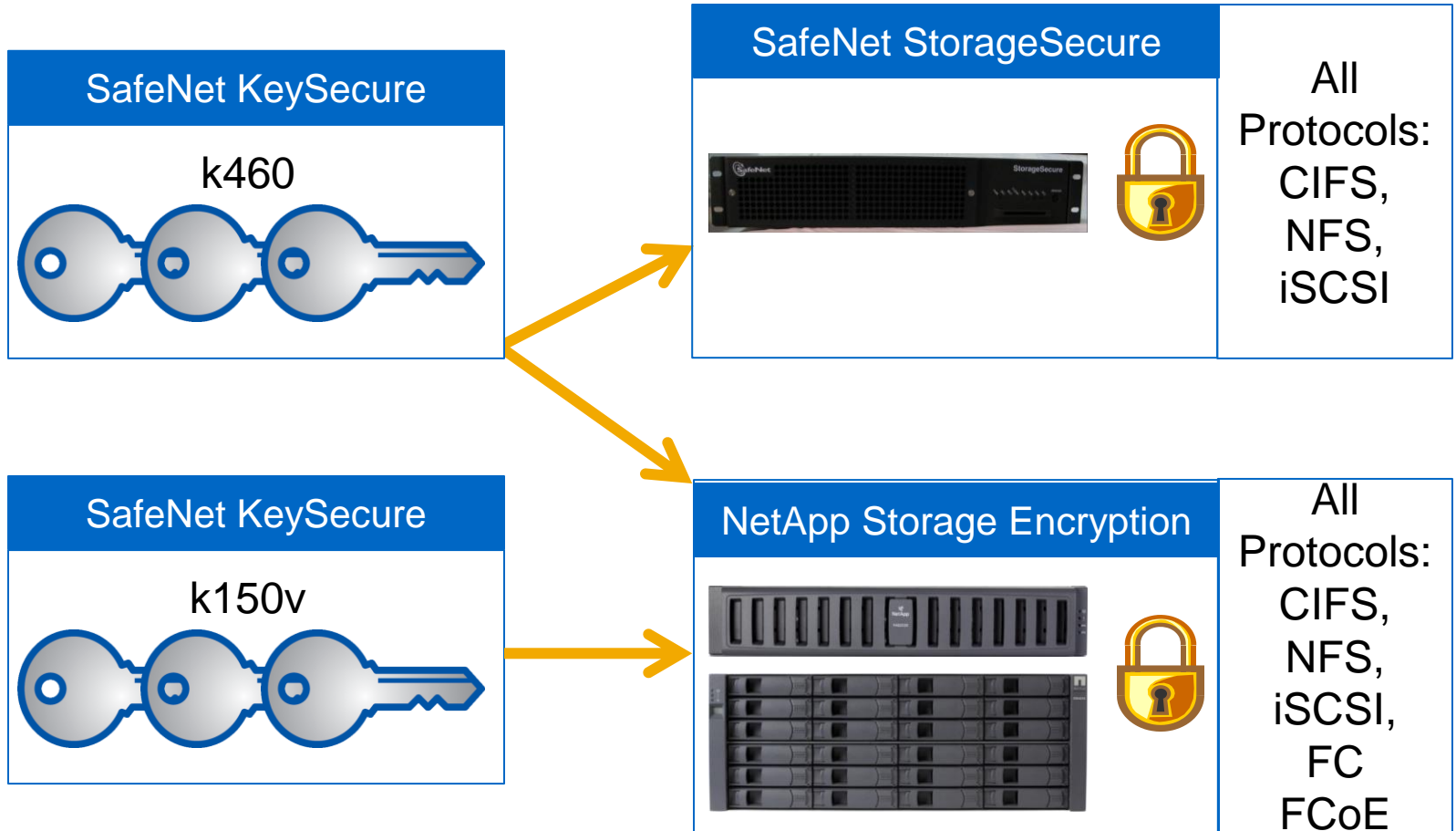


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SafeNet KeySecure by Gemalto



Enterprise Key Management





Thank you



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