

# Comprehensive Endpoint Security

## Protecting Data-at-Rest

*Compliance with data and security  
regulations*

*Joseph Belsanti  
Director, Marketing  
WinMagic Inc.*



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# Agenda

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- Key Messages
- Company Snapshot
- Evaluation Criteria for disk encryption
- SecureDoc Enterprise Edition
  - Comprehensive, robust
  - Innovation
  - Full-Suite
  - Multi Platforms
- Differentiators
- Seagate relationship



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# Key Messages from WinMagic today

- Hardware vs software encryption: true enterprise DAR solution
- Enterprise-class Disk Encryption
  - Proven innovative leader in the last 5 years
  - Multi-Platforms: MAC, Linux
- Comprehensive Security
  - Multiple Encryption Schema Management
  - Full-Suite Solution with File/Folder Encryption
  - Port Control
  - ADL
  - Hosted Services in 2008
- Core Technology developed in-house:  
**ONE INTEGRATED SOLUTION**



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# Company Snapshot

- A worldwide leader in protecting sensitive data-at-rest from unauthorized access:
  - Stolen or lost laptops and PDAs
  - Data leakage through removable media
  - Insider attacks
  - Hard drive re-purposing and disposal
- Trusted, manageable, transparent encryption solutions for laptops, PDAs and removable media



*Secure, trusted, manageable, transparent encryption solutions for data-at-rest.*



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# Company Snapshot

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- Founded in 1997
- Headquartered in Toronto, Ontario
- Operating through direct and indirect channels in over 43 countries
- Over three million SecureDoc licenses sold
- Core competencies:
  - Pre-boot authentication, full-disk encryption, enterprise-class management, third-party product integration
- Extensive third party validation and partnerships
- Strong revenue growth and profitability



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# Clients

WinMagic's SecureDoc is becoming the de-facto standard for security-conscious organizations around the world.



Yale University



THE UNIVERSITY of  
NEW MEXICO



UNC CHARLOTTE

STANFORD UNIVERSITY



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# Certifications

SecureDoc has been accredited by:

- The National Security Agency (NSA) (SECRET level)
- Federal Information Processing Standards (FIPS)
  - ✓ 140-2 Level 1 and Level 2
- Common Criteria EAL Level 4
- National Institute of Standards and Technology (NIST)
  - ✓ Certificate #1
- Canadian Communications Security Establishment
- BITS



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# Partnerships



80+ Resellers worldwide



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# Market Drivers

- Increasing recognition that data-at-rest on end-point devices is vulnerable
  - ~ 60% enterprise data resides unprotected on desktops and laptops (IDC)
  - ~ 10% laptops are lost or stolen each year (IDC)
  - Security breaches are increasingly visible and costly
- As the volume and value of data rise, there is increasingly emphasis on its governance throughout its lifecycle
- The security focus is changing to include protection for data as well as safeguards for the network



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# Data breaches in 2008 so far ...

- Texas A&M University
- Middle Tenn. State University
- Long Island University
- University of Minn.
- Georgetown University
- Penn. State University
- Baylor University
- University of Wisconsin
- Tenn. Tech University
- California State University
- University of Iowa
- University of Akron
- University of Georgia
- New Mexico State University



*Approx. 80,000 records compromised*



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# Disruptive tech or regulations?

|   |  |
|---|--|
| California's SB-1386 (and others)                   | → All companies have to disclose to residents any breach of the security of the data if unencrypted personal information is compromised.           |
| Gramm-Leach-Bliley Act                              | → Mandates companies to protect the security and confidentiality of their customers private information.   |
| HIPAA   | → Requires institutions to be in compliance to address the growing privacy and security concerns of electronically processed medical transactions. |
| Sarbanes-Oxley Act                                  | → Requires public companies to audit their financial reporting and oversight their board to prevent accounting abuses and misrepresentations.      |
| Japan's Personal Information Protection Law         | → Companies must specify why information is collected and take measures to prevent data being leaked and stolen.                                   |
| Europe's Personal Data Directives 95/46 and 2002/58 | → Firms must disclose data collection, the purpose and identify the recipient. Prevents transmission to a country without adequate protections.    |
| European Commission                                 | → Proposed law change that would force telecom firms to notify regulators and customers of all breaches of their data security.                    |

# Full-Disk Encryption

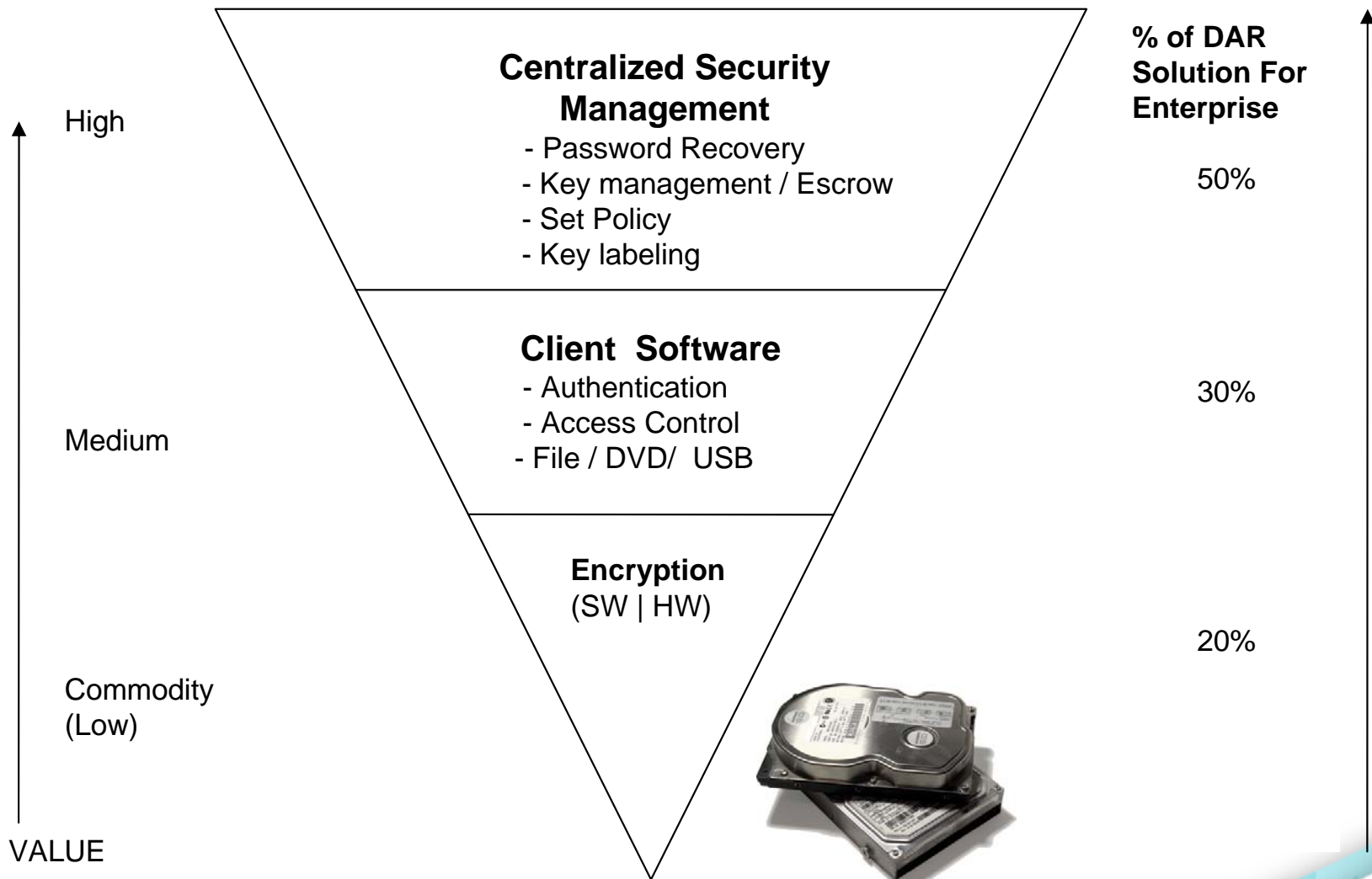
- Full-disk encryption is the acknowledged 'best practice' for protecting data on laptops and portable devices
  - Temp files are encrypted
  - Even file names are not exposed
- Easiest means to enforce encryption of all data written to removable media
  - File-level encryption is more difficult to control
- Applies to USB drives, CD/DVD
  - Most effective in protecting against internal threats



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# Data-at-Rest: Value Distribution



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# Evaluation Criteria

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- Comprehensive Data Security
- Enterprise-Class Key Management
- Business Process Integration
- User Transparency
- Interoperability with IT Infrastructure
- Vendor Pedigree



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# Comprehensive Data Protection

- Strong encryption for hard drives and removable media
- Single or multi-factor user authentication at pre-boot
  - Password, USB token, PKI, smartcard, biometrics and/or TPM
  - Only DARTT-approved vendor to employ TPM at pre-boot
- File and Folder Encryption - Manual and Automatic
- Central configuration and management of user / group profiles
  - Central assignment of user access privileges
- 'Silent' software deployment and initialization
  - Use "push" technologies like SMS
  - Supports .msi or .exe files
- Management of multiple encryption schemas



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# Benefits of Comprehensive Data Protection

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- Right tool for the right job
- AES crypto engine utilizing CPU power from disk drive
- SecureDoc providing all other clients services and enterprise services
- Maximum use of resources
- Strong pre-boot authentication in alignment with other authentication methodologies
- Centrally managed keys
- Encryption of removable media (sector by sector)
- MXI USB integration (key management)



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# Benefits of Comprehensive Data Protection

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- Ease of administration
  - One central management console for multiple encryption schemas in enterprise
  - Automatic enforcement of security policies including password rules
  - Auditing capabilities
  - Password recovery tools and self help capability
  - Active Directory support
- Unique key labeling so that keys can be easily identified for encrypted data stores



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# Types of Disk Encryption

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## **File, Volume folder encryption**

- Requires manual intervention to decrypt every time you want to use it
- Habit of creating temporary files
- Files are not safely deleted when the program exits
- Data can easily be accessed

## **Full Disk Encryption**

- Sector by sector without creating temp or backup files
- Large files will decrypt without reduced performance
- File encryption is normally a much slower process
- Full disk encryption also avoids time consuming tasks
- Safe decommissioning of PCs



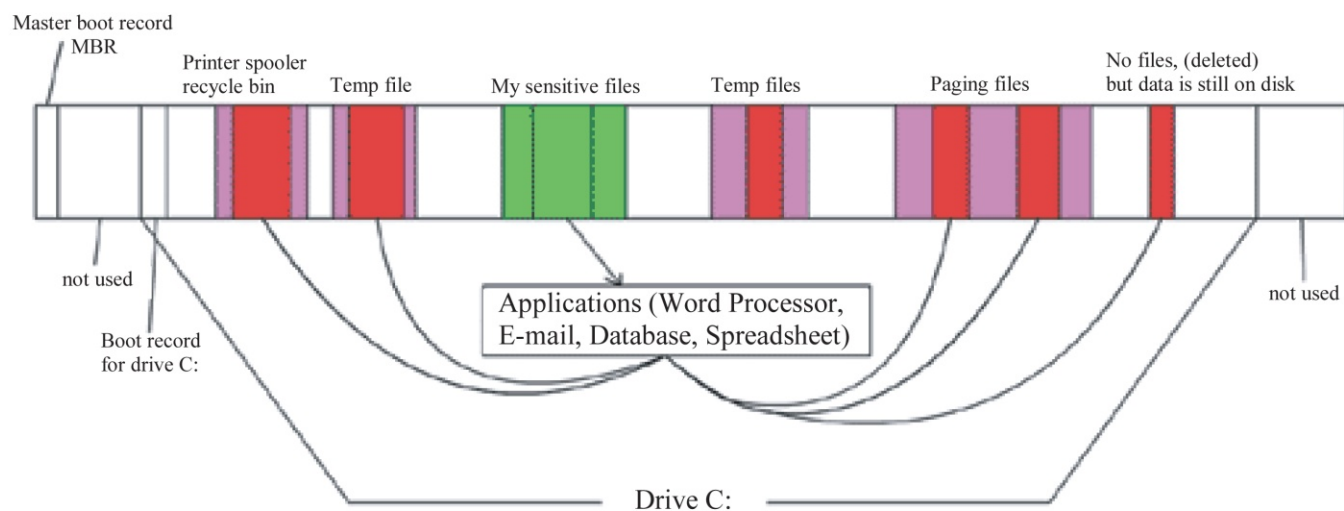
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# Data on disk

- Encrypted Space
- Sensitive Data
- File

## File Encryption on Disk



As you can see, encrypting the file "My Sensitive File" will not encrypt the same sensitive data scattered all around the disk.



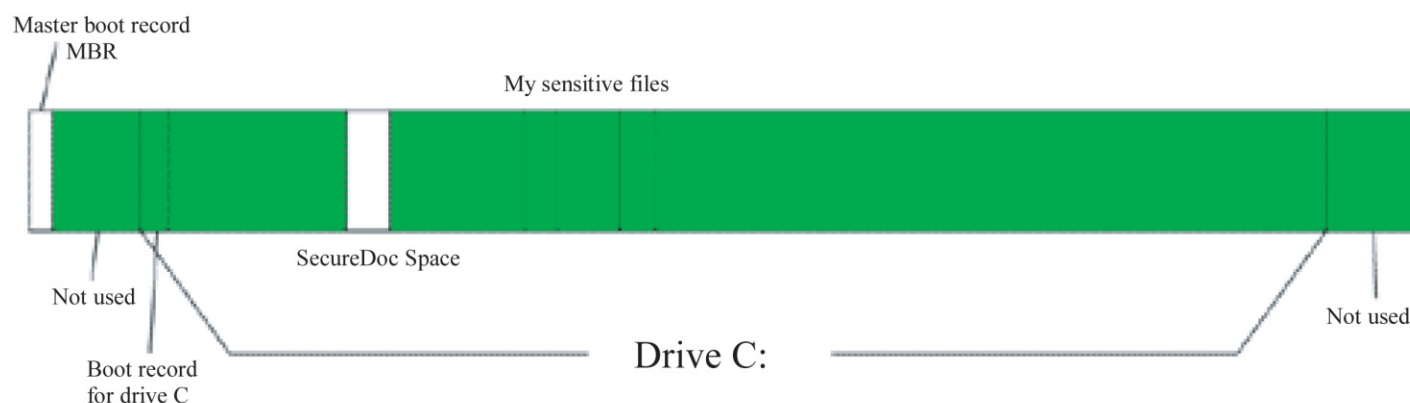
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# Data on disk

- Encrypted Space
- Sensitive Data
- File

## File Encryption with SecureDoc

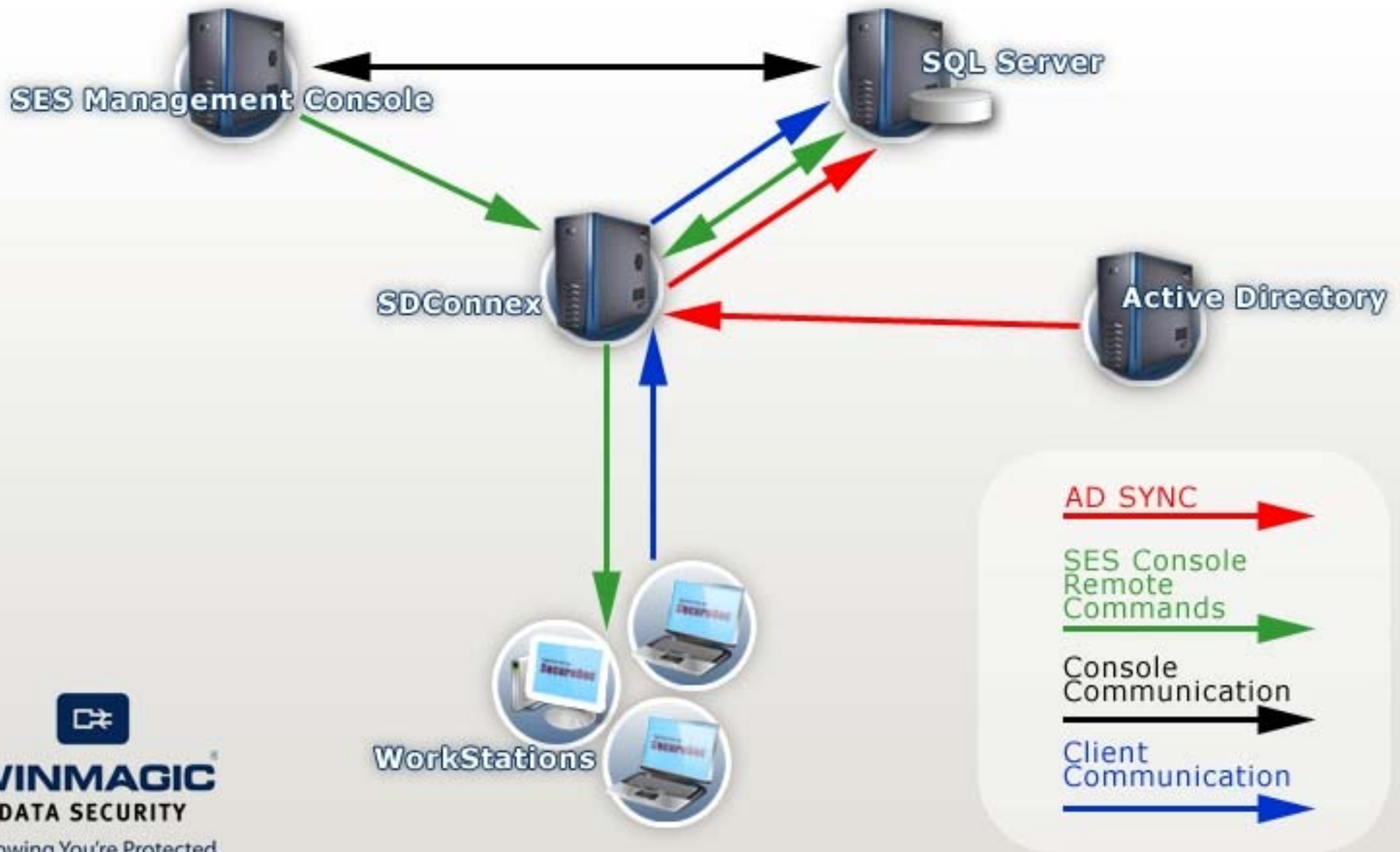


Note that SecureDoc encrypts the entire disk including the un-used space before the C partition and after it. (Encrypting only the drive C may leave attacker code in these spaces.)



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### SecureDoc Enterprise Server™

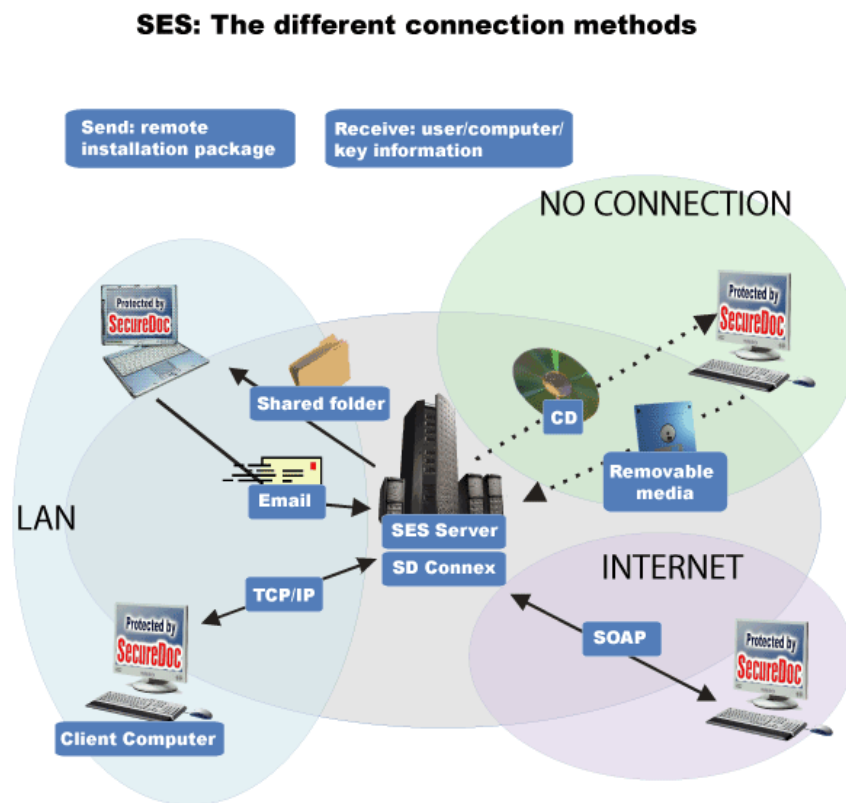
- install, encrypt, and configure user machines centrally
- flexible creation, distribution of key and key files
- assignment of access privileges to users
- customize password rules for the entire network
- recover lost passwords
- the unique design of the SecureDoc Enterprise Server's Key file management eliminates all the vulnerabilities associated with the "Master Password" concept so commonly used by other encryption software.



# SecureDoc Enterprise Server

SES can deploy SecureDoc on thousands of client computers over:

- LAN
- WAN
- Intermittent
- network connection
- Or no network connection at all.



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# Key File Concept

## Key File

- Contains encryption keys (can hold multiple)
- Stored as .DBK file (juser.dbk, sdadmin.dbk)
- Stored on hard drive
- Protected with 256 bit AES Encryption – needs password or token to access



## Keys

- Assigned to user
- Generated by SecureDoc
- added to (SES) database
- Stored in Key File
- 256 bit AES Encryption
- Used to encrypt / decrypt disk drive



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# Enterprise-Class Management

- Automatic synchronization of user / group profiles with Active Directory or other LDAP services
- Consistent, auditable enforcement of security policies and user access privileges
- 'Silent' software deployment and initialization
- Local and Remote Password recovery tools and self help capability
- Unique key labeling so that keys encrypted archives can always be restored
- Auditing capabilities
- Accommodates millions of disk sectors, files and folders



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# Comprehensive Data Security

- Disk encryption fulfills compliance requirements for stolen laptops and lost removable media
- Transparent to users:
  - No password required for each device
  - No performance degradation
- You have to ensure that full-disk encryption can apply to all media types
  - Not yet available in the majority of today's products

|              |             | Storage Media |                 |        |
|--------------|-------------|---------------|-----------------|--------|
|              |             | Fixed Disk    | Removable Disks | CD/DVD |
| Data Objects | Disk Sector | ✓             | ✓               | ✓      |
|              | File        | ✓             | ✓               | ✓      |
|              | Folder      | ✓             | ✓               | ✓      |
|              | Container   | ✓             | ✓               | ✓      |



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# Enterprise-Class Key Management

- Remote deployment and management, transparent to users
- Integration with Active Directory, users and groups
- Provides centralized administration and enforcement of security policies
- Scales to accommodate millions of users / endpoints
- How do you access encrypted data in the future, 10 years from now?
  - Do you still remember the password?
- Dynamic Key Provisioning
  - Permission is arbitrated at the time data is accessed
  - 10,000s of keys



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# Yet Transparent to User

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- Users will circumvent security solutions if they are intrusive or impede productivity
- Transparent solutions require little user intervention, minimal training and cannot be bypassed
- Questions to consider:
  - Do users have to enter passwords when accessing removable media?
  - Do users have to perform complex tasks when sending information to other users? To groups? To external partners?
  - Can installation, configuration and enforcement of security policies be controlled centrally?



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# Protecting Data at Rest

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In the final analysis:

- Significant sensitive data resides on endpoint devices
- Problem with unauthorized access due to theft or loss
- Problem with hard drive disposal procedures
- Data breaches due to problems with data at rest more significant than data being transferred from endpoints to network



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# Vendor Pedigree

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- Security solution selection is very much based on the customer's trust of the vendor
- A security solution might not be very secure:
  - How are passwords saved?
  - How secure is the password reset/recovery mechanism?
  - Is a master key utilized?
  - Can the vendor access the company's data?
  - Or someone with the source code?



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# Differentiators - Innovation

- WinMagic has been the leading innovator in disk encryption for the last five years
  - Smartcard, biometrics, PKI, TPM
  - Centralized Server based on Standard DBMS
  - First to support Windows 2000 and VISTA
  - Support MO drives (non 512 bytes sectors)
  - Key On Demand
  - ..
- With our key file concept, key labeling and a *PKCS#11 foundation*, SecureDoc uses standards throughout its architecture.



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# Differentiators

- Support for Seagate DriveTrust™ technology
  - Enhanced security, transparency and performance
  - Fast, cryptographic data erase
- Faster, more robust conversation
- Extensive pre-boot authentication
- Support for TPM at pre-boot
- Sector-based encryption of CD/DVDs and USB drives
- Automatic, policy-driven file and folder encryption
- Seamless sharing of encrypted information
- Interoperability
  - Distribution tools
  - Directory services
  - Disk imaging applications
  - Anti-virus software, disk utilities and data recovery tools



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# Differentiating Features

- Whatever you can do BEFORE disk encryption, you can do AFTER disk encrypted as well (authentication needed!)
  - Data Recovery after Virus infection
  - Bart PE / Windows PE / Linux based recovery tools
  - Disk Image Software (Ghost, Rapid Deploy, Bootworks)
  - Partitioning software, resize, add, delete partitions
- Robust initial encryption (Conversion)
  - Disk stress-test, Defrag, Power off
  - All during the initial encryption
- Tablet PC (Toshiba, Siemens-Fujitsu, IBM, Motion Computing)
- Large Disk Support (unlimited partitions/disks)
- Support for RAID controllers



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# Differentiating Features

- Supports Hibernation Mode
- Supports Removable Media encrypting full (sector-based) CD / DVD and USB thumb drives
- Strong Multifactor Authentication via passwords, Crypto Tokens, Biometrics, TPM, PKI
- Key file concept allows accessing encrypted removable disks and CD/DVD without entering password.
- Disk Access Control
  - All access / read-only if encrypted / encrypted
- Multi-boot (to Windows 2000, XP, Vista, Linux)
- Encryption of entire disk, not only partitions
- Compartmental version



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# Differentiator - Innovation

- Example – seamless sharing of encrypted information on removable media - **Innovatively**
  - Accessing media without entering password
  - User group access (e.g. Active Directory)
  - Real-time access or denial with 'Key On-Demand'
  - Authentication based on existing PKI infrastructure (e.g. the certificates already used for secure e-mails)
  - Data archive – encrypted media (and images) can be accessed easily – automatically – at any point in the future, e.g. 7 years from now
- File / Folder encryption



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# Comprehensive Data Protection Solution

- FFE File Folder Encryption
  - BASIC – traditional File/Folder Encryption
  - Local and Network
  - Implementation: all applications are in the “WHITE LIST”
- Advanced File/Folder Encryption with White List
  - And Black List, ByPass List
  - Access over the network will get encrypted data
  - Access of Spyware gets encrypted data
- Advanced File Control
  - Application Control
  - Audit log of files names and data movement
  - Anti Data Leakage
  - More with File System Control...



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# SecureDoc FFE File Folder Encryption

## Application configuration



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# SecureDoc FFE File Folder Encryption

## Audit Log information

**SecureDoc FFE**

### File and Folder Encryption Configuration

C:\My Documents\Secure Folder

#### Final Report

Security policy configuration

| Black List      | White List                     | Raw List        |
|-----------------|--------------------------------|-----------------|
| Microsoft Excel | Microsoft Word<br>Adobe Reader | Microsoft Visio |

Audit Information

Date --- Time Configuration : February / 05 / 2008 --- 14:05:00 - Toronto Canada

**Step 3**

**Steps:**

- 1 Start
- 2 Policy configuration
- 3 Finish

**Step Hint**

The details of this policy are listed here.  
Click Back to modify the details.  
Click Finish to apply this policy.  
This policy can be modified at any later time.

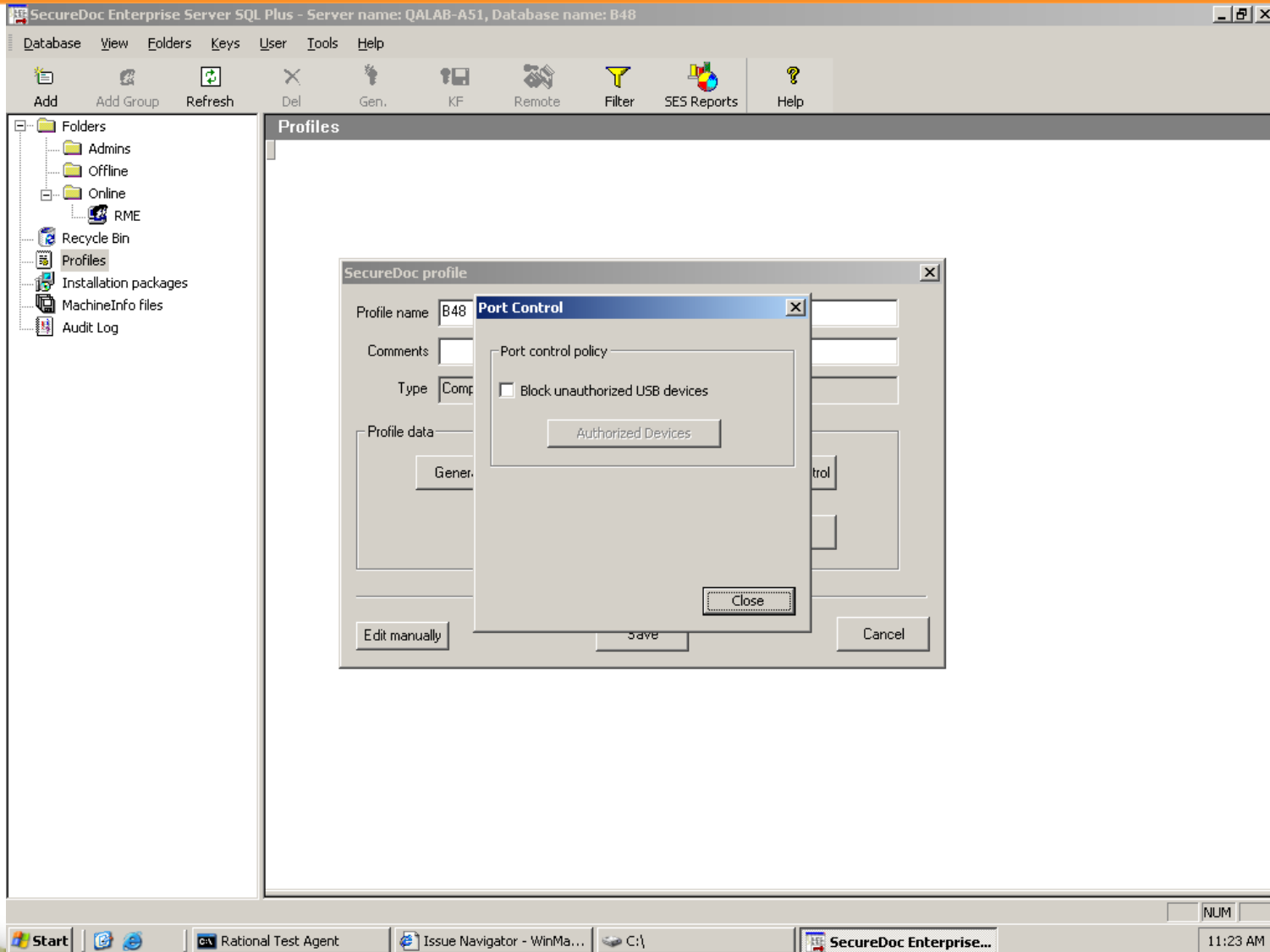
Cancel Back Finish



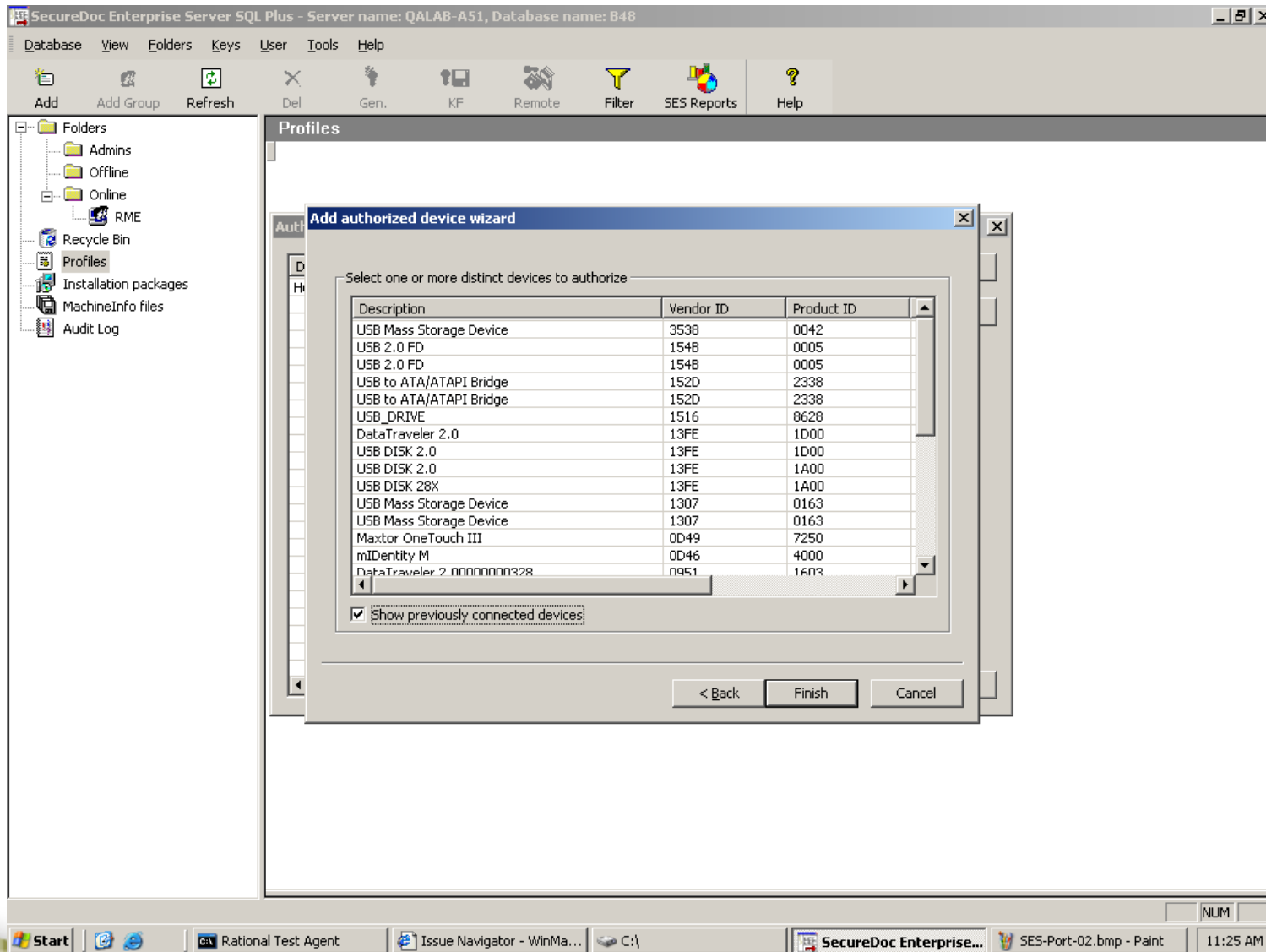
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# Comprehensive Solution – Port Control



# Comprehensive Solution – Port Control



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# Coming Up

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- Partner with complementary companies to deliver full suite of IT products
- Authentication (UPEK)
- Platform providers (Seagate, Infineon, Intel, Microsoft)
- PC Call Home (Absolute)
- Data backup, Recovery (Seagate)
- Email Encryption (WinMagic)
- Full-suite Data Protection (WinMagic)
- Hosted, Managed Services (eg Datev)
- Antivirus, Device Management, Asset Management, DRM.



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# Seagate and WinMagic

- Partnering to provide next-generation security and security management for portable data-at-risk
- 'Raising the bar' for data security, user transparency and ease-of-administration



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# Seagate and WinMagic

- Customers will not administer a discrete management system for each endpoint encryption solution they deploy
- SecureDoc with Momentus 5400 FDE.2 support allows organizations to deploy a mix of hardware and software-based encryption
  - Administrators' tools, policy engine and users' experience are the same



# Differentiators from other Seagate supporters

- One management console to manage multiple encryption schemas including **REMOVABLE MEDIA**
- Easy to install and setup through wizards
- Support of TPM at pre-boot since v1.1 and now v1.2
- Easy, automatic connection and communication between server and clients through SDConnex
- Reporting and audit log capabilities for both server and client
- Easy pricing and distribution model
- No complicated modules or add-ons, all components included in SecureDoc Enterprise Edition
- Simple client version available for initial imaging of notebooks and desktops



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# Questions and Answers

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***Thank You !!***

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