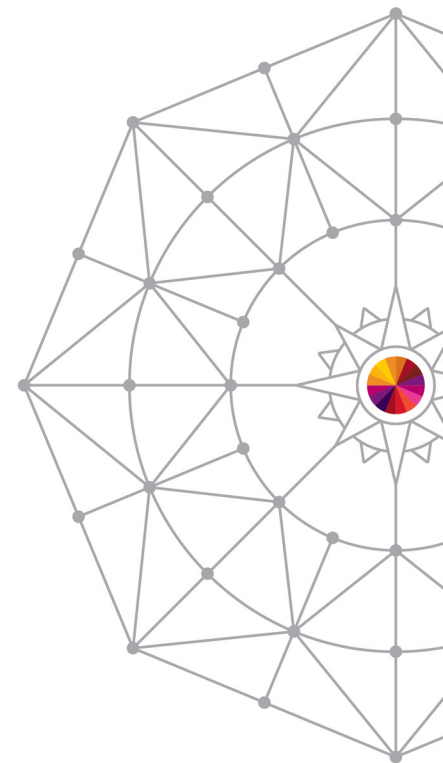


Utilizing Virtual Tape for Mainframe and Open Systems Backups and Recovery

Brad Rice and Rick Summers
SecureAgent Software

August 4, 2014



#SHAREorg



Agenda

- **Who is SecureAgent?**
- **SecureAgent VTL**
- **Customers' Experiences with SecureAgent VTL**
- **Differentiators of SecureAgent VTL Technology**

Who is SecureAgent?

SecureAgent®
Software
Secure Enterprise Solutions

- Privately Held
- More than 25 years experience in the Industry
- Offices in Zurich, Stuttgart, Various US Locations
- Test Facilities in Oklahoma, Pennsylvania, and Zurich
- Fortune 500 Customer Base

SecureAgent products including the VTL enjoy patent protections in the US and Europe. It's not just another VTL.

The VTL is a Managed Recovery Suite that uses VTL(s) with HDS disk to provide:

- Tape Replacement
- VTL Replacement & Migration
- Multi-Platform Support
- FIPS Compliant Security
- Remote Business Continuity & Disaster Recovery Tools
- One Button Recovery

SecureAgent Customers

GRZ

VISA

Medicare

SUNGARD®



NORTHROP GRUMMAN

HITACHI



Three Integrated Tools, Adding Value!

**Automated
One Button
Recovery**

SuperVision



SuperVision

Automates One-Button Remote Recovery of Mainframe, iSeries, and Open Systems

**Emulated
Encrypted
Gateway**

IDG 9074



IDG 9074

Provides Remote Encrypted Mainframe, iSeries, and Open System Connectivity for DR

**VTL and
Offsite
Disaster
Recovery**

**HDS SecureAgent
VTL**



Secure Data
Solution

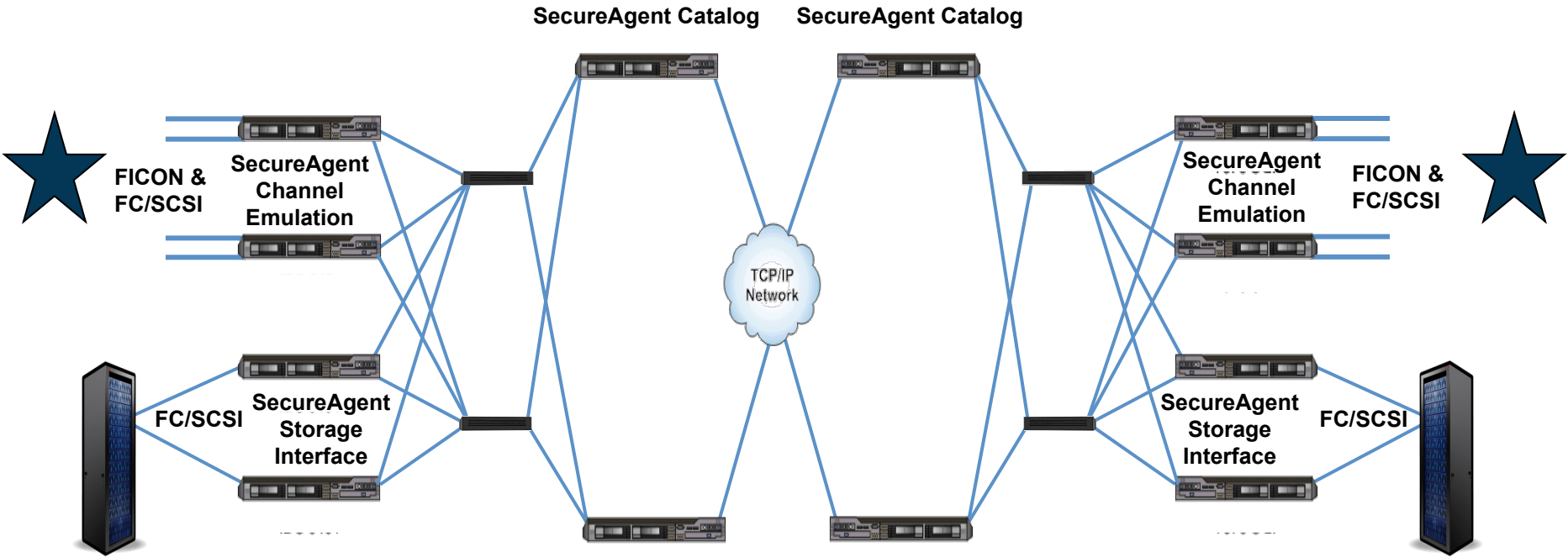
Provides All-in-One, Multi-System VTL for Mainframe, iSeries and Open Systems

A Multi-Platform VTL for all Environments



Production Site

Disaster Recovery Site



- Mainframe
 - UNIX
 - LINUX
 - iSeries
- Windows
 - Backup Exec
 - Net Backup
 - TSM

Complete your session evaluations online at www.SHARE.org/Pittsburgh-Eval



Blue Hill Data Services

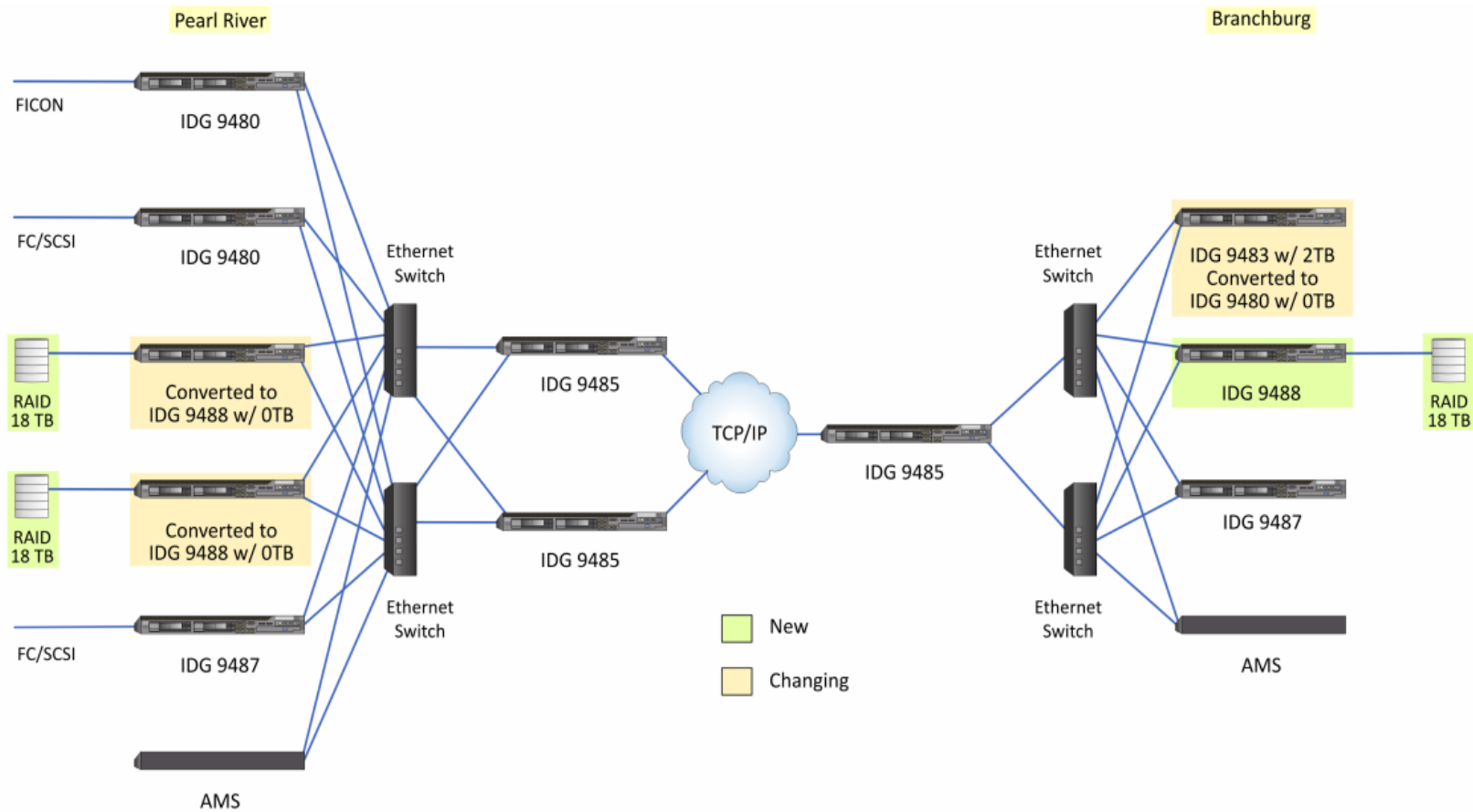


- Established in 1994
- Pearl River, NY
 - Uptime Institute Tier III/IV Classification
 - SSAE16 Type 2 (formerly SAS70 Type 2)
Compliant, PCI-DSS, EU Safe Harbor Certified
- High-Availability Disaster Recovery Centers – Branchburg, NJ; Shelton, CT; Atlanta, GA; Irvine, CA
- Grown to become a leading Mid Tier provider of IT outsourcing solutions –
- Mainframe, Open Systems, iSeries/ Mid-Range, Application Services; Dedicated Disaster Recovery, Business Continuity and 24x7 Colocation & Managed Hosting Infrastructure services
- Onshore service delivery
- Global reach (22 time zones)

Blue Hill Mainframe Backups for DR

- The SDS VTL Supports
 - IBM (3480, 3490, 3590, 3592), STK (9490, 9840, 9940)
 - Backup disk volumes to SDS VTL
 - Transmit backups to remote SDS VTL at one of our DR data centers
 - Physical Tape backup offsite method – to store on LTO4 media
 - For physical backups offsite use the SDS VTL to backup the volumes
 - Move them to the ADIC tape library with LTO4 drive
 - Send the LTO tapes offsite
 - Reduce RPO and RTO Method
 - We combine the SDS VTL with Point-in-Time technology
 - Take snapshots and backups throughout the day
 - Transmit from the SDS VTL in the primary data center to our DR data center

Blue Hill VTL Configuration



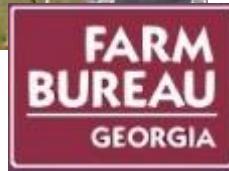
Benefits Using SDS VTL

- Reduced external media purchases
- Reduced external tape drive purchases and maintenance
- Reduced power and floor space consumptions
- Faster RTO (Recovery Time Objectives)
- Improved Recovery Point Objectives
- Encryption
- Data Compression
- Support for multiple tape media (LTO, 3590-2, STK, 3490)

Georgia Farm Bureau



GFB Headquarters I-75 @ Bass Rd. Macon, GA



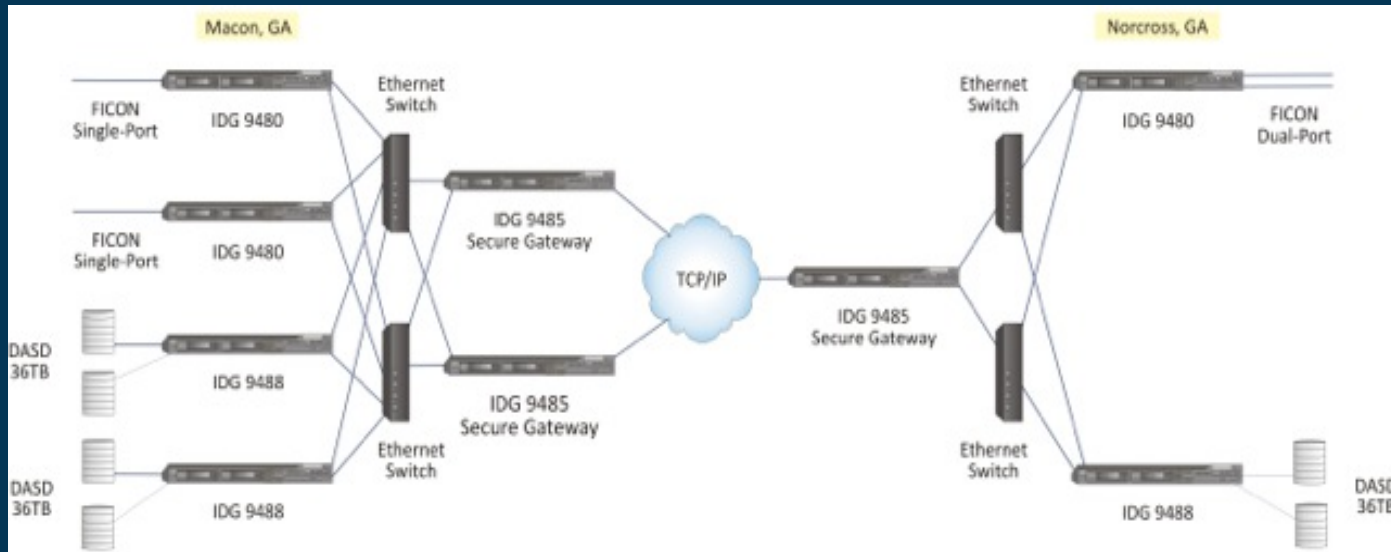
- IBM Z/10 BC
- IBM P595
- STK SL3000 silo with 6 9840-C drives and 500 tape library
- 8 STK 4490 drives with autoloaders
- At project time approximately 24,000 4490 cartridges ranging from 1 – 20+ years old
- They were taking approximately 40 tapes offsite per day
- They had roughly 5000 tapes in their offsite storage facility
- BMC Control-T tape management
- DR site 100 miles away in Atlanta area

Georgia Farm Bureau -- Finding the Right Size Solution

Evaluated several of the best known solutions in that space.

- Some were too large and complex for their needs
- Some didn't provide adequate redundancy
- Some didn't scale
 - Appliances typically couldn't add storage without adding a whole new appliance
- Most did not provide support for both Z/OS and AIX in a single solution
- Most focused on de-duplication technology for the replication
- They were very interested in encrypting the data that went offsite
- Their DR provider introduced SecureAgent to Georgia Farm Bureau

Georgia Farm Bureau configuration (after Phase II upgrade)



Georgia Farm Bureau –

Comparison of compressed and uncompressed file sizes of DFDSS backups

Uncompressed size

- 50.68GB
- 78.23GB
- 77.91GB
- 51.38GB
- 32.50GB
- 45.39GB
- 87.49GB

Compressed size

- 10.64GB
- 20.80GB
- 16.23GB
- 12.49GB
- 15.06GB
- 19.71GB
- 28.46GB

Georgia Farm Bureau (cont.)

They also have data that is already compressed by the application that they were concerned would not compress well on the SDS. Below were the original (before SDS compression but after application compression) sizes and the sizes after SDS compression.

As you can see they are being compressed further.

Original size	Compressed size on SDS
6 MB	1800 KB
251 MB	58 MB
753 MB	172 MB
994 MB	255 MB
2018 MB	446 MB

Screen Showing Transmission Log

Secure Tape Admin - GFBP_85-01 (GFB) - Log Query

File Options View Window Help

Version: 3.7.15-25 User: admin

Unit: Logging Time: 2013-10-17 05

VolSer: Device:

Severity: Message Text:

Data shown are Rows 137 to 236 of 236

Previous Page Number of items per page: 100 Next Page

EntryModified	Severity	VolumeSerial	Unit	Device	Message
2013-10-17 05:51:17	4				Query DB: count 0.021s, select 0.257 s, send result 0.010 sec
2013-10-17 05:51:49	4				Query DB: count 0.020s, select 0.257 s, send result 0.010 sec
2013-10-17 05:51:53	2	311696	C360_85-01		Idle: Xfer of entire 311696 from GFBP_85-02 to C360_85-01 is complete (1.1 GB at 12.8 MB/s).
2013-10-17 05:51:53	3	311214	GFBP_85-02		Send Xfer Request to GFBP_85-02. Remote unit C360_85-01
2013-10-17 05:51:55	3	311214	GFBP_85-02		Xfer: Start sending entire tape 311214 (74 MB) to C360_85-01
2013-10-17 05:52:03	2	311214	C360_85-01		Idle: Xfer of entire 311214 from GFBP_85-02 to C360_85-01 is complete (0.074 GB at 12.2 MB/s).
2013-10-17 05:52:03	3	311816	GFBP_85-02		Send Xfer Request to GFBP_85-02. Remote unit C360_85-01
2013-10-17 05:52:06	3	311816	GFBP_85-02		Xfer: Start sending entire tape 311816 (1.69 GB) to C360_85-01
2013-10-17 05:52:25	4				Query DB: count 0.020s, select 0.261 s, send result 0.010 sec
2013-10-17 05:52:36	3				CountTapes corrected <C360_88-01> from 36 to 32
2013-10-17 05:54:39	2	311816	C360_85-01		Idle: Xfer of entire 311816 from GFBP_85-02 to C360_85-01 is complete (1.6 GB at 12.8 MB/s).
2013-10-17 05:54:39	3	311870	GFBP_85-02		Send Xfer Request to GFBP_85-02. Remote unit C360_85-01
2013-10-17 05:54:42	3	311870	GFBP_85-02		Xfer: Start sending entire tape 311870 (47 MB) to C360_85-01
2013-10-17 05:54:47	2	311870	C360_85-01		Idle: Xfer of entire 311870 from GFBP_85-02 to C360_85-01 is complete (0.047 GB in 4s).
2013-10-17 05:54:47	3	311872	GFBP_85-02		Send Xfer Request to GFBP_85-02. Remote unit C360_85-01
2013-10-17 05:54:50	3	311872	GFBP_85-02		Xfer: Start sending entire tape 311872 (5 MB) to C360_85-01
2013-10-17 05:54:51	2	311872	C360_85-01		Idle: Xfer of entire 311872 from GFBP_85-02 to C360_85-01 is complete (0.005 GB in 1s).
2013-10-17 05:54:51	3	311874	GFBP_85-02		Send Xfer Request to GFBP_85-02. Remote unit C360_85-01
2013-10-17 05:54:54	3	311874	GFBP_85-02		Xfer: Start sending entire tape 311874 (143 MB) to C360_85-01
2013-10-17 05:55:09	2	311874	C360_85-01		Idle: Xfer of entire 311874 from GFBP_85-02 to C360_85-01 is complete (0.143 GB at 12.7 MB/s).
2013-10-17 05:55:09	3	311876	GFBP_85-02		Send Xfer Request to GFBP_85-02. Remote unit C360_85-01
2013-10-17 05:55:12	3	311876	GFBP_85-02		Xfer: Start sending entire tape 311876 (20 MB) to C360_85-01
2013-10-17 05:55:15	2	311876	C360_85-01		Idle: Xfer of entire 311876 from GFBP_85-02 to C360_85-01 is complete (0.020 GB in 2s).
2013-10-17 05:55:15	3	311881	GFBP_85-02		Send Xfer Request to GFBP_85-02. Remote unit C360_85-01
2013-10-17 05:55:17	3	311881	GFBP_85-02		Xfer: Start sending entire tape 311881 (139 MB) to C360_85-01
2013-10-17 05:55:31	2	311881	C360_85-01		Idle: Xfer of entire 311881 from GFBP_85-02 to C360_85-01 is complete (0.139 GB at 12.3 MB/s).
2013-10-17 05:55:31	3	311884	GFBP_85-02		Send Xfer Request to GFBP_85-02. Remote unit C360_85-01
2013-10-17 05:55:34	3	311884	GFBP_85-02		Xfer: Start sending entire tape 311884 (1 MB) to C360_85-01

Ready NUM

Lessons Learned by Georgia Farm Bureau

After a couple of years—

- They have 29,189+ tapes in the virtual tape catalog.
- They began with 18TB of capacity and have since upgraded to 36TB. They are using approximately 50-60% of the 36TB of capacity.
- They have 128 tape devices defined to their production lpar – far more than they could ever have been able to have with physical tape. Device availability is no longer a constraint on their scheduling.
- Administrative tasks, maintenance, and reporting are all very easy using the admin client. Minimal ongoing administration required.
- They've conducted a number of DR tests utilizing the SDS.
- In one of their DR tests they restored approx. 180 MOD-9 DASD volumes in an hour and a half. When they were using physical tapes this was a 4 hour process.
- They were able to use the built in TN3270 and z/OS console session support to perform the majority of their DR test from their office.
- They have a tape pool defined on the DR side that they write to during their DR test. All of that data is kept separate from their production volumes but is still available for review back home after their test.

Hastings Mutual Insurance Company

- Headquartered in Hastings, MI
- HMIC's backup system consisted of a StorageTek 9740 Library Storage Module and Hitachi 7490E cartridge module tape unit. Tape-based backup systems were beginning to be unreliable and restores/retrievals were impacting productivity. As HMIC grew and data storage increased, tape operations started to become more complex and costly to maintain.
- HMIC's existing business continuation procedure required shipment of tapes from Iron Mountain to their business continuity site with a potential to lose 24 hours worth of data .
- Their then current backup processes had increased to the point where they were not meeting their maintenance windows.
- DR site is 5 hours away in Indianapolis, IN



What were Hasting's Objectives of Upgrading their Then Current Mainframe Tape Backup System

- Eliminate resources required to mount and un-mount physical tapes
- Eliminate annual supply costs of tapes
- Reduce annual maintenance costs
- Reduce Power consumption costs
- Eliminate cost associated with transportation and storage of Tape Library
- Increase program execution times to stored data

Hasting's Realized Benefits of Virtual Tape

- **Elimination of tape rotations and pickup schedules for Iron Mountain**
 - Reducing costs for these services by over \$20,000.00 a year
- **Eliminated over 2,600 tapes**
- **Reduced Foot Print of Hardware**
 - Two units supporting the VTL system taking up 4U's in a 19 inch cabinet replaced 2 Refrigerator sized units taking up 32 Square feet of floor space
- **Elimination of Manual Processes**
 - Daily Tape Mounts on the two conventional Tape units Averaged 114 of which 32 required Manual intervention.
 - 48.9% were scratch mounts (Temporary Data)
 - Eliminated 1 FTE Hour daily of Manual Intervention
 - Eliminated 5 ½ FTE Hours for Saturday Backups
- **Power Consumption Reductions**
 - 3 Conventional Units running on 240 Volt 50 Amp circuits, Versus 2 VTL units running on 120 Volt 20 Amp circuits
 - Power consumption reduced yearly by over \$3,000.00



Hastings Total Benefits of using the SecureAgent VTL



- **Tangible Benefits:**

– Annual maintenance costs reduced	\$ 9,522.24
– Annual Tape costs eliminated	\$ 969.90
– Annual Power consumption reduced	\$ 3,036.00
– Operator man-hours reduced (annual avg)	\$14,040.00
– Iron Mountain costs eliminated (annual avg)	\$ 21,000.00
– Total average yearly savings	\$ 48,568.14

- **Intangible Benefits:**

- Ease of getting Disaster Recovery site ready for actual use/testing
- File recovery made easier and faster
- Elimination of Manual tape mounts

Some other SecureAgent VTL Users

- County of Ventura, California
 - Supporting VSE environment between California and Colorado for DR
- Furniture Brands
 - Supporting VSE, z/OS and AS400 environments between North Carolina and Mississippi
 - article in 2012 IBM Systems Magazine
- Centers for Medicare and Medicaid Services
 - Supporting z/OS and open systems environments between two large locations for DR



Differentiators – FIPS Security and Encryption!

Do You Allow Data To Be Stored
Or Transferred Unencrypted???

ENCRYPTION!



It's **NOT** Enough To Offer Only Compression

Large Companies Today Demand
Encryption At All Points, in motion and at rest

More And More Companies Require Multiple
Encryption Keys To Protect Different Types Of
Data

Large US Banks Are Now Requesting Unique
Encryption Keys For *Each and Every* VOLSER

Redundancy

Unplug Any component with no Production Impact

Problems in One Area of Functionality WILL NOT Affect Other Units

Reduce Production Downtime
Upgrade and Scale with no Downtime



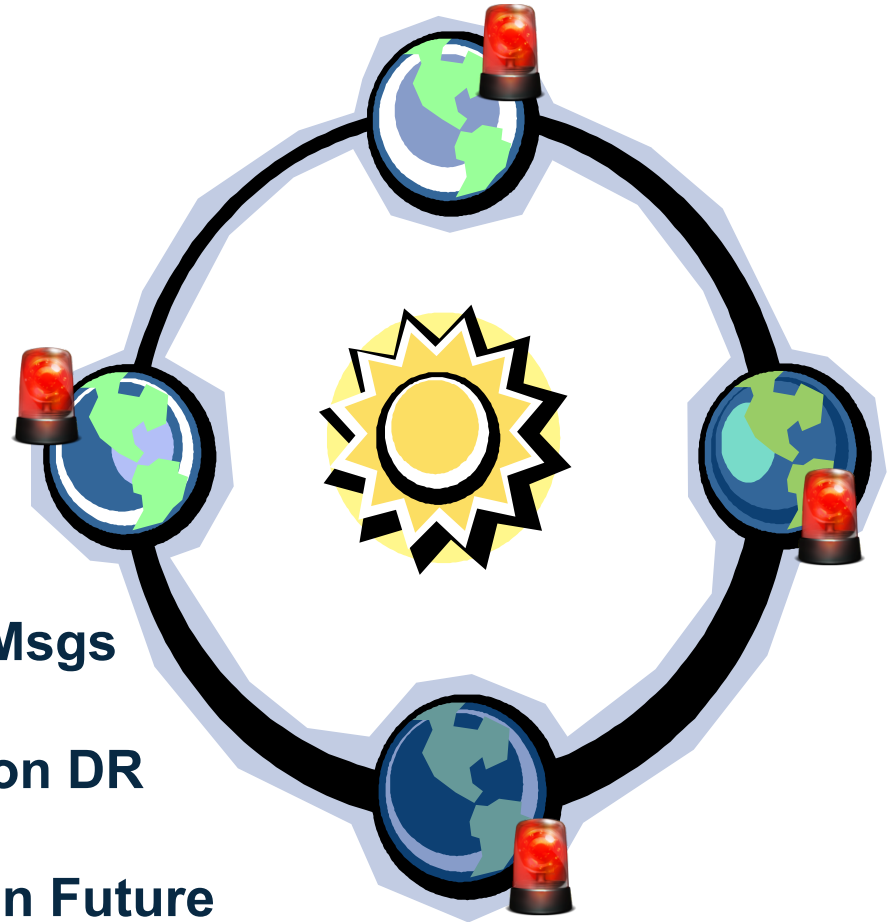
Differentiators – Integrated Alerting

Remote Alerting

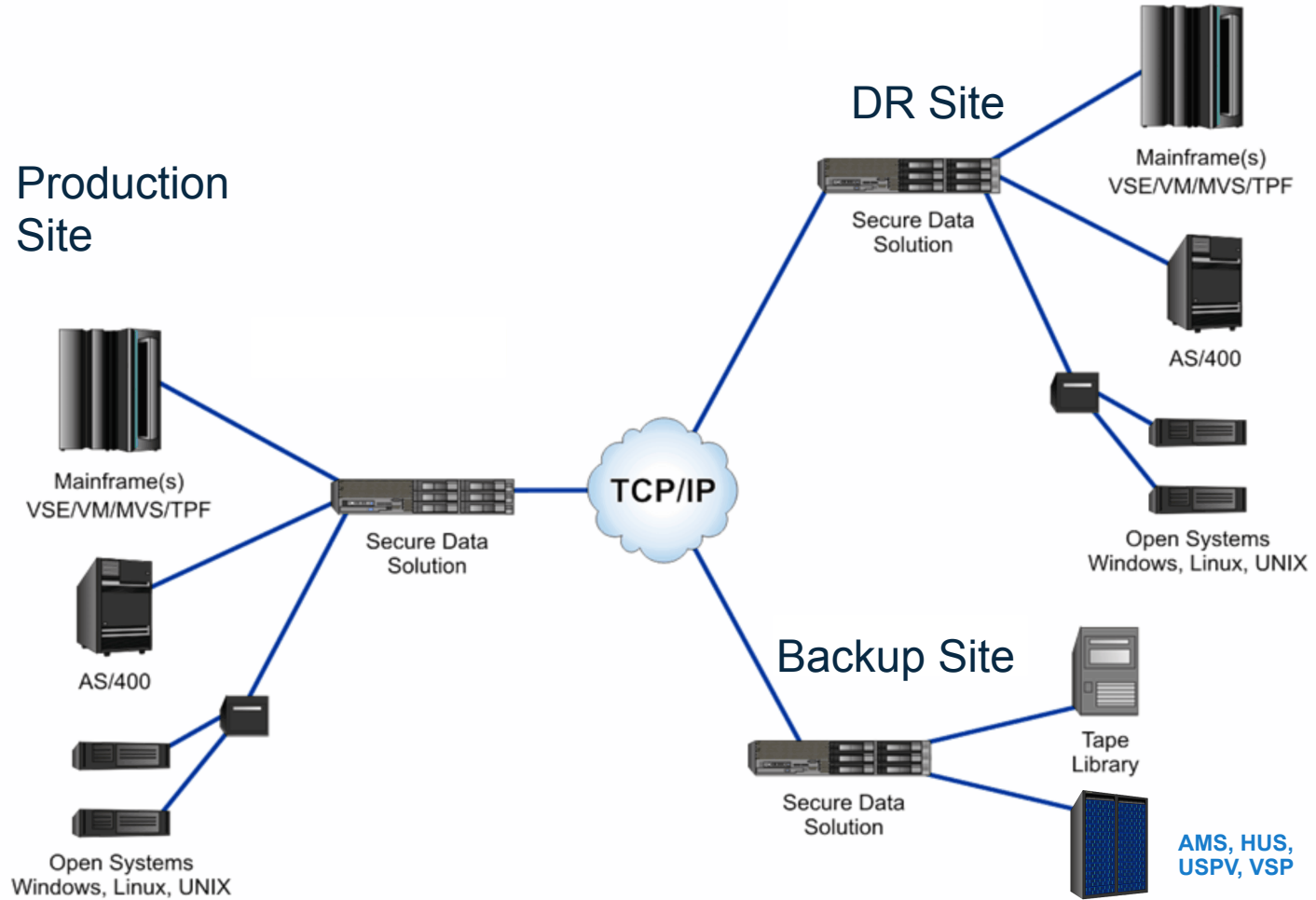
Automatically Alerts Ops with WTO Msgs

Integrated Alerts Through SuperVision DR

HDS and SecureAgent are working on Future Customizations



Integrated Multi-Site Recovery VTLs



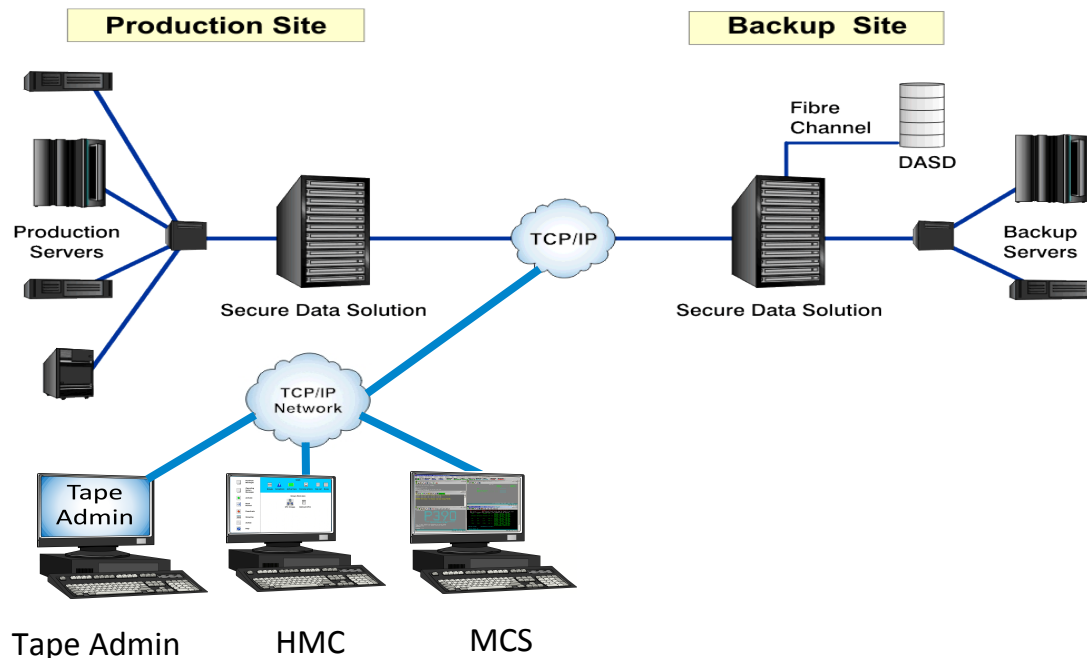
Differentiators - One Button Recovery

Integrated Console Tools and Virtual Tape – A Powerful Combination

Remote Tape Process Management

2. Remote Hardware & System Console Access

3. Integrated Automation



Complete your session evaluations online at www.SHARE.org/Pittsburgh-Eval

Contact Us



For more information please visit:
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