

Dell AppAssure Backup, Replication, and Recovery Evaluators Guide

Business needs are putting extra pressure on your backup but your backup is broken...Traditional backups can't keep up.



This guide is written to help you analyze and evaluate the Dell AppAssure backup and recovery platform and will give you valuable insight for whenever you download and evaluate your trial copy of the software. It begins by introducing key features and functions and follows with eight function guides that point out the ease of use you can experience with Dell AppAssure software. If you have any additional questions, please visit www.appassure.com or contact AppAssure sales to schedule a demo with one of our sales engineers.

Today, new problems must be solved

Data growth pegged at 800% over five years (Gartner Group 2010 Data Center conference)

- Big Data will grow more than 60% between 2012 and 2015 (IDC Press Release March 7, 2012)
- Cloud investments growing fast -\$61 billion in 2012 (Holger Kisker, Forrester Research blogpost 12/13/2011)
- Backup windows too large
- File/application-level backups don't meet latest RPO, RTO needs Snapshots alone limit recovery options
- PERHAPS THAT'S WHY many of companies plan to replace existing file/application-level backups with snapshot and replication alternatives

Dell AppAssure winner of TOP awards



VM snaps and hardware snaps are not backup

What if... You lose an entire volume?

- VMware (and Hyper-V) can snapshot the VMs
- Great for very short term protection (i.e. loading a service pack...)
- BUT it will not protect you from total loss

Hardware snaps are Copy On Write (COW) or similar

- They are tied to the original volume
- But if the original fails, the snaps are worthless

Both take up space and can cause space-related issues down the road

Dell AppAssure provides:

- Up to 288 snaps per day (as frequent as every 5 minutes!)
- Complete data integrity
- Replication for offsite failover

How do you plan for the worst?

- Replication is now critical to survival
- Backing up and moving tape is no longer sufficient
- Automation is key to always being ready
- Backup WITH replication is the new standard
- It is no longer only for the largest companies that can afford disk based replication

Dell AppAssure provides:

- Integrated backup AND replication in one product
- An affordable solution
- Local and offsite Virtual Standby for both physical and virtual systems for failover

How do you know you can recover?

- "Verify" option in most products inadequate and has no application understanding
- Random restore tests cost a lot of money in man hours
- Automation is the key to success
- More recent providers only look at the system, not the app.

Dell AppAssure provides:

- Recovery Assure[™] automation of testing critical data
- Volume Integrity testing
- SQL and Exchange Database testing for mount / attach-ability
- In-depth checksum testing of Exchange Databases

Consider this

How often to you plan on taking Snapshots of your protected servers?

• Backing up every 15 minutes consumes more bandwidth than backing up every four hours.

What is your current daily data change rate on the protected servers?

- AppAssure tracks changes at the block level so it's extremely efficient. By only backing up these changes we ensure the minimum performance impact on the agent side and maximize storage savings.
 I.e. when a block in a database changes we only capture that block change. Traditional solutions will back up the entire database.
- Servers with a greater change rate will create larger snapshots and could require longer transfer times (AppAssure moves data in excess of 8GB/min).

Are you creating virtual hot standby clones?

 If you select this option, any protected server you can be automatically created and continuously updated as a Virtual machine. If your protected server should go down, simply fire up your Virtual Hot standby. It's important to note however that the creation of this Virtual machine, although powered off, will be continuously updated with the block level changes from the source server. This type of updating requires disk resources.

What kind of agents are you protecting?

• Exchange and SQL server agents usually see greater daily change rates, and as part of AppAssure's Assured recovery procedures, run a series of checks on the Data, ESEUTIL checks in the case of Exchange, and SQL Table Mountability checks. So the end result is that SQL and Exchange Agents consume more AppAssure Core CPU, and Disk I/O.

Are you Replicating your data offsite or into the cloud?

 Replicating data off site also consumes AppAssure Core CPU and storage bandwidth. It is also important to remember when replicating data to any offsite location, that you need to ensure your firewall and TCP-IP port settings are properly configured and you have proper access to whatever remote site you are using. As far as WAN bandwith remember that only compressed and de-duplicated data is sent to ensure the most efficient use of your WAN connection.



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Evaluation Overview

Dell AppAssure evaluation considerations

Evaluation requirements: what functions are right for your business?

- Is reducing Recovery Point Objectives (RPO) or Recovery Time Objective (RTO) critical to your Service Level Agreements (SLA) or business needs?
- Is migrating from physical to virtual (P2V), virtual to virtual (V2V), or to the cloud (X2C) an end goal?
- Is protecting Microsoft applications such as Exchange, SQL, and/or SharePoint critical to your operations?
- Do you currently support multiple physical, virtual and/or cloud platforms and/or need to migrate between them?
- Is ease of use and a flexible web interface important?
- Do you want to be certain your backups can be recovered in the event?
- Would near zero performance impact on protected machines and recovery points as often as every five minutes secure your business goals?

What features are important to build the ideal data protection and disaster recovery solution?

- Single-pass Microsoft Exchange, SQL, SharePoint application backup with full system or granular recovery as well as application assurance
- Site-to-Site replication
- Automated replication of physical/virtual machines to ESX(i) or Hyper-V
- Ability to recover large non-system volumes in seconds using Dell AppAssure Live Recovery™
- Recover an entire system, single file, folder, or object anywhere
- Inline deduplication and compression at line speed to save on bandwidth and storage
- Protect physical, virtual and cloud machines all in one place
- Fast always incremental snapshots Dell AppAssure changed block tracking on physical, virtual, or cloud machines

Understanding Dell AppAssure

What is Dell AppAssure?

- Dell AppAssure is more than just a backup application, it's a recovery application
- Dell AppAssure tracks changed blocks of data on a protected system and saves that data with continual snapshots, for up to 288 recovery points per day
- Automated validation of Microsoft applications guarantees you can recover them every time anywhere
- Centralized console enables you to protect and centrally manage entire environment all from a single pane of glass

Protecting your network with Dell AppAssure is simple and easy.

Dell AppAssure requires just a few simple components to be installed in order to protect your environment:

- Dell AppAssure Core Server
- Storage for Dell AppAssure backups
- Dell AppAssure Agent(s)

All of the components are easily installed and configured.

Lets take a deeper look at each component.

Dell AppAssure Core Server



Functionality:

- Backup & Recovery:
- Centralized Management
- Centralized Storage Management
- Retention & Archive Policies
- Multi-Core, Multi Repository Scaling
- Compression and Deduplication
- Onsite/Offsite Replication
- Virtual Standby

Considerations:

- Runs on a dedicated 64-bit Windows
 Server
- Utilizes various storage types such as NAS, SAN or DAS
- Needs a multi core CPU

Off the shelf storage components



Considerations:

- Dell AppAssure supports common storage such as Direct Attached Storage (DAS), Network Attached Storage (NAS) and Storage Area Networks (SAN)
- Needs to be presented to the Dell AppAssure Core Server as a CIFS share or local storage (including ISCSI)
- Should have a business-class disk subsystem
- Storage system should not have native compression or deduplication
- Capacity should be large enough to match your backup retention goals

Dell AppAssure Smart Agent



Functionality:

- Change Block Tracking
- Near-Zero % CPU Utilization
- Creates application aware backups
- Data Volume (data & logs) grouping
- Microsoft SQL and Exchange log truncation
- Exchange mount and integrity checks
- SQL attachability checks
- Volume Integrity Check

OS Support:

- Windows Server 2003\2008\2008
 R2\2008R2 SP1 core\2012
- Windows XP\Vista\7\8
- Red Hat Enterprise Linux 6.3
- CentOS 6.3
- SuSE Linux Enterprise Server 11 SP2



Dell AppAssure Backup, Replication, and Recovery Evaluator's Guide: How to Install and Configure the Core

Why read this guide

The Dell AppAssure Core Server is the heart of the backup and recovery platform. Purpose-built for centralized management, the Core holds the system's critical functionality, including retention and archiving policies, compression, deduplication and onsite and offsite replication functions.

The Core runs on a dedicated 64-bit Windows Server and utilizes a variety of storage types, such as NAS, SAN or DAS.

The Core is easily installed and configured in various environments.

How to install the Dell AppAssure Core

- 1. Installing the Dell AppAssure Core
- 2. Configuring the Dell AppAssure Core
- 3. Dell AppAssure configuration options

1. Dell AppAssure Core installation

Run the installer and follow the installation wizard to begin your evaluation. After accepting the Licensing Agreement, check and/or install any prerequisites.





Once prerequisites are installed, click "Next."

Choose the destination folder for installation, choose the port and click "Next."

AppAssure Core Installation

Welcome



• Wetcome

Destination Folder
C:\Program Files\AppRecovery\Core
Change...
Change...
Change...
Change...
Allow Core to automatically send diagnostic and usage information to AppAssure Software, Inc
Progress
Port number
8006
Back
Next
Cancel

-1×1

Once installed, click "Finish" to begin evaluation.



Launching Dell AppAssure will bring you to the Core Console.

| (06811) | AppAssure | AA0 > Home | _ | W Q BAR | Contact AppAssure Suppor | t docs Version: 5.3.1.550 |
|------------------|-----------|---|---------------------------|-----------------------------|---------------------------------|-------------------------------|
| | | Home Machines Repl | ication Virtual Stand | by Events Tools | Configuration | _ |
| | | AAO | | | | ? Setup Core |
| | | Thank you for choosing App Setup Wizard. | Assure 5. To begin with t | ne configuration of your Co | ire, click Setup Core to launch | n the AppAssure 5 Core |
| | | Protected Machines | | | Protect Ma | chine Protect Cluster |
| | | Status Machine Name | Repository | Last Snapshot | Recovery Points | Total Protected Space |
| | | | | No data to display | | |
| | | Repositories | | | | Add New Repository |
| | | Status Repository Name | Total Size Fr | re Space Protected Da | ta Machines Recovery Poi | ints Compression Ratio |
| | | | | No data to display | | |
| | | Alerts | | | | |
| | | Level Date | Message | | | |
| | | 11/16/2012 4:31:34 | PM The Core service | on AAO has started | | |
| | | | | | | |



2. Configuring a New Dell AppAssure Core

Launch the Dell AppAssure Core Console from the Desktop Icon or the Start Menu and press "Setup Core" in the upper right of the screen to begin the configuration of the new Core.

| AppAssure | AAO > Home | Contact AppAssure Support docs Version: 5.3.1.55029 | | | | |
|-----------|---|---|--|--|--|--|
| :#: AAO | Home Machines Replication Virtual Standby Events Tools | Configuration | | | | |
| | AAO | ? Setup Core | | | | |
| | Thank you for choosing AppAssure 5. To begin with the configuration of your Core, click Setup Core to launch the AppAssure 5 Core Setup Wizard. | | | | | |
| | Protect Machine Protect Cluster | | | | | |
| | Status Machine Name Repository Last Snapshot | Recovery Points Total Protected Space | | | | |
| | No data to display | | | | | |
| - | Repositories | Add New Repository | | | | |
| | Status Repository Name Total Size Free Space Protected Date | ta Machines Recovery Points Compression Ratio | | | | |
| | No data to display | | | | | |
| | Alerts | | | | | |
| | Level Date Message | | | | | |
| | 11/16/2012 4:31:34 PM The Core service on AAO has started | | | | | |
| | | | | | | |

To begin configuration, provide a Display Name for the new core you are configuring, then press the "Arrow" to proceed.

| AppAssure 5 Core Setup Wizard | × | | | | |
|-------------------------------|---|--|--|--|--|
| > Welcome | Welcome | | | | |
| Email Notifications | Welcome to the Core Configuration Wizard. Use this Wizard to configure the Core for the first time. | | | | |
| Deploy Agent | | | | | |
| | You can change the name of the core machine as it will be displayed in the AppAssure 5 Core Console. (For example, you could change it to something more user-friendly). | | | | |
| | Display Name: AppAssure Core 0 | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
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First, configure storage for your backups; this a "Repository." Click "Add Storage Location" to begin.

| Welcome | Repository | | 00 | | |
|-----------------------|-------------------------------|-----------------------------|---------------------|--|--|
| Repository | | | | | |
| Email Notifications | Details | | | | |
| Create Encryption Key | | Composite | 100 | | |
| Deploy Agent | Kepository Name: Kepository 1 | contineeres. | × | | |
| | Storage Locations | | Add Storage Locatio | | |
| | Metadata Path Data | a Path | ze Action | | |
| | Ple | ease, add Storage Location. | | | |
| | | | | | |
| | | | | | |
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Provide the path for the new Repository in the "Metadata Path" and the "Data Path" or CIFS share. Select a size for the repository, then press "Save."

| storage Location | | | |
|--|--|---|--|
| Add file on local disk | | Add file on CIFS share | |
| Metadata Path: | D:\repository1\meta | UNC path: | |
| Data Dath: | D:\repositop(1)data | User Name: | |
| Data Fath | D. If CPOSICOLY House | | |
| Ducurturn | bill oposition y Hauta | Password: | |
| We recommend placing the the repository will delete th Details | repository in a dedicated folder (i.e. X:\R e entire contents of the repository path. | Password: | is not recommended as a delete of Show/Hide Detai |
| We recommend placing the the repository will delete th Details | repository in a dedicated folder (i.e. X:\R e entire contents of the repository path. | Password: epository(). Placing the repository on the root (i.e. X:() | is not recommended as a delete o Show/Hide Detai |



Once the Repository is created, you can edit, delete, or add more Storage Locations. Once complete click the "Right arrow."

| AppAssure 5 Core Setup Wizard | | | × | | | |
|---------------------------------------|-------------------------------|---------------------|----------------------|--|--|--|
| Welcome | Repository | | 000 | | | |
| Email Notifications | Details | Details | | | | |
| Create Encryption Key Deploy Agent | Repository Name: Repository 1 | × | | | | |
| | Storage Locations | | Add Storage Location | | | |
| | Metadata Path | Data Path | Size Action | | | |
| | D:\repository1\meta | D:\repository1\data | 30 GB Edit Delete | | | |
| | | | | | | |

Configure email notifications here by Enabling email notifications and filling in your SMTP server details. While AppAssure carries out backups automatically, if something is not right, like a backup failure due to data corruption, email notifications will let you know immediately so you can intervene to address it. Once completed press the "Next arrow."

| Repository | Email Notificat | Email Notifications | | | | |
|-----------------------|---|--|--|--------------------------------------|--|--------------------|
| Email Notifications | Email SMTP Setting | 15 | | | | |
| Create Encryption Key | NOTE: To configure the Events which will generate email notifications after you complete this wizard, go to the Configuration tab, Events section, and edit the default notification error. | | | | | |
| septor report | Enable email notif | ications | | | | |
| | SMTP Server: | hostname.domain.suf | ffix | | | |
| | | Port: | 25 | Timeout (seconds): | 30 0 | TLS |
| | | User name: | | | | |
| | | Password: | | | | |
| | Email Subject: | <hostname> - <level></level></hostname> | <name></name> | | | |
| | From: | noreply@localhost.co | m | | | |
| | Email: | <shortcompanyname></shortcompanyname> | <pre>> <productname< pre=""></productname<></pre> | > <hostname> has reported</hostname> | d an event <lev< td=""><td>el> <name>:</name></td></lev<> | el> <name>:</name> |
| | | Date/Time: <localtim< td=""><td>nestamp></td><td></td><td></td><td></td></localtim<> | nestamp> | | | |
| | | <message></message> | | | | |
| | | <if(details.errordetail <details.errordetails. <="" td=""><td>ls)> Message></td><td></td><td></td><td></td></details.errordetails.></if(details.errordetail | ls)> Message> | | | |
| | | <details.errordetails.i< td=""><td>Detail></td><td></td><td></td><td></td></details.errordetails.i<> | Detail> | | | |
| | | <endif></endif> | | | | |
| | | About this event: <de< td=""><td>scription></td><td></td><td></td><td></td></de<> | scription> | | | |



If encryption is required – for example when sending data offsite or to the cloud – use this screen to provide the name of the encryption key, a short description and a passphrase. Make a note to secure this passphrase so it can not be lost, as this is the only key for accessing your data. Once completed click the "Next arrow."

| AppAssure 5 Core Setup Wizard | I | | × | | |
|------------------------------------|---|--|---|--|--|
| Welcome | Create Encryptic | 000 | | | |
| Email Notifications | New Encryption Key | | | | |
| Create Encryption Key Deploy Agent | Name: Description: Passphrase: Confirm Passphrase: Make sure to store your AppAssure 5 uses A55 25 compromise this type of en | AppAssure Common Encryption Key Hint: Passw0rd1 | vill not be possible without the passphrase. bit keys. There are no known methods to | | |
| | | | | | |

You can use the Core Configuration wizard to Deploy Agents to machines you wish to protect. This is covered in detail in the Agent Configuration Guide. Press the checkmark button to complete the configuration.

| AppAssure 5 Core Setup Wizar | d | × | | | |
|--|---|---------------|--|--|--|
| Welcome | Deploy Agent | 0 0 0 | | | |
| Repository Email Notifications Create Encryption Key | The AppAssure 5 Agent should be installed on every machine which is to be protected by AppAssure 5. You can download the A specific platform from one of the following links and manually deploy it to each Agent, or you can use the bulk deploy feature to deploy them automatically. | | | | |
| > Deploy Agent | Component | Download Link | | | |
| | | | | | |



3. Dell AppAssure Core Configuration tab (options)

On the Configuration tab of the Core there are many optional items that can be edited. In the Repository section you can add or edit repositories.



Use the Security Menu in the Configuration tab to add or import new encryption keys.





The Events section is used to configure notification groups, email server settings, and event notification frequency.

Use the Retention Policy section to specify how long Recovery Points will be retained. The default configuration allows for recovery period spanning 3 months.

| AppAssure AppAss | sure Core 0 > Configuration | | Contact Ap | pAssure Support docs Version: 5.3.1.55029 |
|--|---|---|---|---|
| ✓ AppAssure Core 0 Protected Machines ♥ AD1 ₩ <li< th=""><th>Muchines Replication lanage ^ epositories Curity ecurity Vents etention Policy If titachability If titicensing If Il Iddets Result Settin Number Restor</th><th>Virtual Standby Events ion Policy I Recovery Points for 3 0 0 and then keep one Recovery Point and then keep one Recovery Point Newest thing Retention Period gs of simultaneous Rollups: e Defaults Apply</th><th>Tools Configuration ays tiper hour for 2 ays tiper hour for 2 ays tiper days tiper days tiper days ays tiper days tiper days 11/8/2012 </th><th>Image: mail of the second s</th></li<> | Muchines Replication lanage ^ epositories Curity ecurity Vents etention Policy If titachability If titicensing If Il Iddets Result Settin Number Restor | Virtual Standby Events ion Policy I Recovery Points for 3 0 0 and then keep one Recovery Point and then keep one Recovery Point Newest thing Retention Period gs of simultaneous Rollups: e Defaults Apply | Tools Configuration ays tiper hour for 2 ays tiper hour for 2 ays tiper days tiper days tiper days ays tiper days tiper days 11/8/2012 | Image: mail of the second s |



Use the Attachability section to configure the SQL Server instance that will be used to perform tests to ensure your SQL Server backup is recoverable. First, choose the SQL Server you want to use, and provide the credentials to access it.

| AppAssure A | ppAssure Core 0 > Configuration | DN | - | Contact A | ppAssure Support docs Version: 5.3.1.55029 |
|---|---|--|--|----------------------------|--|
| AppAssure Core 0 Protected Machines AD1 | ppAssure Core 0 > Configuration Home Machines Re Manage A Repositories Security Events Retention Policy Attachability Settings Licensing | n Plication Virtual Standby Attachability Check Set Choose which local SQL Ser SQL Server 2008: SQL Server 2008 R2: SQL Server 2012: Specify credentials with ac Credential Type: User name: Password: | Events Tools tings tver instance to use to (None) (| Contact A Configuration | ppAssure Support docs Version: 5.3.1.55029 |
| | | | | | |
| | | | | | |

The Settings section is where you can change default settings for how the Core operates. Generally the default values are a best practice. (This is the first half of the screen).

| AppAssure A | ppAssure Core 0 > Configur | ation | | | Contac | t AppAssure Support docs Versic | m: 5.3.1.55029 |
|----------------------------|---|-----------------------------------|---|-------------------------------|---|--|----------------|
| ✓ AppAssure Core 0 | Home Machines | Replication | Virtual Standby | Events T | ools Configuration | _ | |
| ✓ Protected Machines ♥ AD1 | Manage ^ Repositories Security Events Retention Policy Attachability Settings | Genera Display N Nightly J | ll lame: r Jobs obs Time: | AppAssi 12:00 A | ure Core D | ? | change |
| | Licensing | Maximum | Concurrent Transfer | 5: 3 | | | change |
| · · | | Client | Timeout Settings | | | | change |
| | | Connecti Read/Wr | on Timeout: ite Timeout: | 00:01:4 00:05:0 | 0 | | |
| | | Dedup | ication Cache Cor | figuration | | restore default | change |
| | | Primary (Secondar Metadata | Cache Location: y Cache Location: a Cache Location: | C:\Prog C:\Prog C:\Prog | ramData\AppRecovery\Rej ramData\AppRecovery\Rej ramData\AppRecovery\Rej | oositoryMetaData\PrimaryCache oositoryMetaData\SecondaryCache oositoryMetaData\CacheMetadata | |



Settings section continued.

| Deel | AppAssure | AppAssure Core 0 > Configuratio | n | | Contact AppAssure Support docs Version: 5.3.1 | .550 |
|------|-------------------------------------|---------------------------------|---|---|---|------|
| ~ # | AppAssure Core 0 Protected Machines | | Replay Engine Configuration | | change | 5 |
| | 91 AD1 | | IP Address: Preferable Port: Port in use: Admin Group: Minimum Async I/O Length: Read Timeout: Write Timeout: Write Timeout: Send Buffer Size: No Delay: | 192.168.164.131 8007 BUILTINAdministrators 65536 00:00:30 00:00:30 8192 8192 | | |
| | 9 | | Deploy Settings | | change | , |
| | | | Agent Installer Name: Core Address: Failed Receive Timeout: Max Parallel Installs: Reboot Required: Protect After Deploy: | Agent-Web.exe 20 minutes 100 Ior | | |
| | | | Database Connection Settings | | restore default change | 5 |
| | | | Host Name: Port: Retention Period: | localhost 27017 30 | | |

The last section is Licensing. Here you can review your license type, status, the key itself, the amount of licenses available to you during your trial, and the License Server connection settings.

| AppAssure A | AppAssure C | ore 0 > Config | uration | | | | Contact AppAssure Support do | cs Version: 5.3.1.55029 |
|----------------------------|--|--|---|---|-----------------------------------|------------------------|---|---------------------------|
| ✓ AppAssure Core 0 | Home | Machines | Replication | Virtual Standby | Events | Tools | Configuration | |
| ✓ Protected Machines ♥ AD1 | Manage Reposit Securit Events Retent Attach Setting Licensi | e A tories y ion Policy ability s ng | License License S License K License Pool Size Machines | Details Vype: tatus: key: Pool Protected: Server | | Ent Act Unl 1 | terprise tive Change | ? |
| | | | License S Last resp Last cont Next atte | erver Address: onse from licensing : act with licensing se empt to contact licer | verver: rver: Ising server: | htt Suc 11/ | tps://appassure.licenseportal.com/ ccess /16/2012 08:32 PM /16/2012 09:32 PM Contact Now | |



Dell AppAssure Backup, Replication, and Recovery Evaluator's Guide: How to Deploy Dell AppAssure Agents

Why read this guide

Dell AppAssure Smart Agents are ultra-lightweight agents that have the intelligence to allow inherently higher-levels of protection than agentless backup schemes, including higher-speed backups, super-efficient changed-block tracking, and needing only one backup pass for both granular and system-level recoveries. There is a small time commitment you have to make for all this performance: a one-time install on each protected machine.

How to Deploy Dell AppAssure agents

- 1. Deployment Notes
- 2. Active Directory deployment
- 3. vCenter/ESX(i) deployment
- 4. Manual deployment
- 5. New deployment
- 6. Deploying a Local Agent
- 7. Deploying a Linux Agent

The Dell AppAssure Agent

Dell AppAssure agents protect and manage the backup and recovery of individual machines in a variety of environments. Each agent allows for block tracking, data volume grouping and the creation application aware backups, with near-zero percentage CPU utilization.

Dell AppAssure agents support the following operating systems:

- Windows Server 2003\2008 \2008 R2\2008 R2 SP1\2012 core
- Windows XP\Vista\7\8
- Red Hat Enterprise Linux 6.3
- CentOS 6.3
- SuSE Linux Enterprise Server 11 SP2

Deployment notes

When deploying an AppAssure Smart Agent to a machine you wish to protect, that machine will automatically and immediately reboot, and from that point on will be automatically protected unless otherwise selected

But if you don't want the machine to reboot immediately, select the "Edit" button next to the machine to be deployed

| Home | Machines | Re | plication | Vi | rtual Standby | Events | Tools | Configuration | | _ | _ | | | | _ |
|------------------|---------------|----|-----------|--------|-----------------|-----------|--------|--------------------|------------|----------------|--------------------|----------|---|--------|--------|
| Tools | | ^ | Deploy | Ager | nt to Machines | | | | | | | | | | ? |
| System Boot C | n Info CDs | | Add ma | chines | ; from: >Active | Directory | > vCei | nter/ESX(i) > L | Local Core | > Manually > N | lew 🌣 Settings | ☆ Remove | | | |
| Mount | ts | | Z | | Display name | | User | name | | | Message | | | | |
| Bulk P | rotect | | | • | VM1-W2K8 | | appas | sure.lab\administr | rator | | Machine is ready t | o deploy | | | Edit |
| Bulk D | eploy | | V | • | VM2-W2K8 | | appas | sure.lab\administr | rator | | Machine is ready t | o deploy | | | Edit |
| Downle | oads | | | | | | | | | | | | 2 | Verify | Deploy |
| Archiv | e | ~ | | | | | | | | | | | | | |

On the pop-up screen deselect "Protect machine after install" and "Automatic reboot after install"

Just remember to reset the reboot command at some point in the near future so the machine can begin to be protected.

| Edit Settings | × |
|-----------------|---|
| Host name: | VW2-W2K8 |
| Display name: | VM2-W2K8 |
| Port: | 8006 |
| User name: | appassure.lab\administrator |
| Password: | |
| | Automatic reboot after install Protect machine after install |
| Repository: | repository-002 |
| Encryption Key: | (none) 👻 |
| | Save |

Assuming "Protect machine after install" has been selected the agent will begin creating its base image after its initial reboot.

Dell AppAssure is application aware and will automatically protect all volumes on the system while accounting for dependencies.

By default, snapshots are created every 60 minutes, but can be set as frequently as every five minutes for high-transaction environments or at longer intervals for applications where data changes infrequently.

1. Active Directory deployment

To deploy Dell AppAssure via Active Directory:

- Connect to the Dell AppAssure core server
- Go to Tools-> Bulk Deploy-> Active Directory

| Ho | ne M | Aachines | Re | plication | ¥irtual Standby | Events | 1 Tools | Configuration | | | | | |
|-----|-----------|----------|----|-----------|---------------------------------------|-------------|----------|------------------|--------------------------------|------------|-----------------|--------|--------|
| T | - 1- | | | | | | | | | | | | |
| | | - - | - | Deploy | Agent to Machine: | 5 | | | | | | | ? |
| B | oot CDs | fo | | Add mac | hines from <mark>: 3> Activ</mark> | e Directory | ∕ > vCer | nter/ESX(i) > Lo | cal Core > Manually > New | ⇔ Settings | ⇒ Remove | | |
| AA | ounts | | | | Display name | | | | User name | | Message | | |
| В | ulk Prote | ect | | | | | | | Nesse add machines fan dealau | | | | |
| 2 B | ulk Deplo | ру | | | | | | ŀ | tease, and machines for deploy | | | | |
| De | ownloads | s | | | | | | | | | | Verify | Deploy |
| A | chive | ~ | | | | | | | | | | | |

- Enter your domain controller's IP or host name
- Enter domain administrator's credentials

| Domain: | dc-001 | | |
|------------|---------------|-----------|--|
| User name: | administrator | Password: | |

- Select the machines that you wish to deploy to
- Click "Add"

- Click "Verify" to ensure the machines are online
- Once the machines have been verified click "Deploy" to begin the deployment

| Home | Machines | Re | plication | Vi | rtual Standby | Events | Tools | Configuration | | | | | _ |
|------------|----------|----|-----------|--------|-----------------|-------------|--------|-------------------------|--|--------------------|-----------------|--------|--------|
| 7 1 | | | | | | | | | | | | | |
| foots | - 1-6- | - | Deploy | Age | nt to Machines | 5 | | | | | | | ? |
| Boot | CDs | | Add ma | chine: | s from: > Activ | e Directory | > vCei | nter/ESX(i) > Local Cor | e > Manually > Manuall | lew 🕸 Settings | ⊞ Remove | | |
| Mour | nts | | _ | | Display name | | User | name | | Message | | | |
| Bulk | Protect | | | 0 | VM1-W2K8 | | appas | sure.lab\administrator | | Machine is ready t | o deploy | | Edit |
| Bulk | Deploy | | | ۰ | VM2-W2K8 | | appas | sure.lab\administrator | | Machine is ready t | o deploy | | Edit |
| Down | loads | | | | | | | | | | | Verify | Deploy |
| Archi | ive | ~ | | | | | | | | | | - | |

Click the "Events" tab to monitor the progress of the deployment

| | | | | and the second second | | | | | | | | | |
|---|-----------------------|--------------------|-------------|---|--------------------------|--------------|--------|----|------------------|--------|----------|------------------------|--------|
| asks | | | | | | | | | | ? | 🖌 Active | Complete | 🔲 Fail |
| Job | | | | | | | Status | St | art Time | , I | End Time | | Detai |
| Deploying\Upgr | ading AppAssure Agent | to '2' machine | e(s). | | | | 0 of 2 | 11 | /13/2012 2:22:28 | PM | | | ×, |
| | | | | | | | | | | | | | |
| Job Details | | | | | | | | | | | | | |
| Start Time: | 11/13/2012 2:22:28 | PM | | Rate: | | | | | | | | | |
| | | | | Progress: | 0 of 2 | 2 | | | | | | | |
| End lime: | | | | | | | | | | | | | |
| End lime: Elapsed Time: | 1 minutes, 5 secon | ds | | Total Worl | k: 2 | | | | | | | | |
| End lime: Elapsed Time: | 1 minutes, 5 secon | ds | | Total Worl Cancel: | k: 2 Click | here to ca | ncel | | | | | | |
| End Time: Elapsed Time: Child Tasks | 1 minutes, 5 secon | ds | | Total Worl Cancel: | k: 2 Click | t here to ca | ncel | | | | | | |
| End Time: Elapsed Time: Child Tasks Task | 1 minutes, 5 secon | ds | _ | Total Worl Cancel: | k: 2 Click | here to ca | ncel | | | Status | Rate | Progress | |
| End Time: Elapsed Time: Child Tasks Task Installing AppAs | 1 minutes, 5 secon | ds K8' machine: | Downloading | Total Worl Cancel: g installation | k: 2 Click n files | : here to ca | ncel | | | Status | Rate | Progress 22 of 100% | |

2. vCenter/ESX(i) deployment

To deploy Dell AppAssure via vCenter/ESX(i):

- Connect to the Dell AppAssure core server
- Go to Tools-> Bulk Deploy -> vCenter/ESX(i)

| H | ome | Machines | R | eplication | Virtual Standby | Events | 1 Tools | Configuration | | | | | |
|---|---------|----------|---|------------|---------------------|-------------|----------|--------------------------|-------------------|--------------|---------|----------|-------|
| | | | | | | | - | | | | | | 10 |
| | Tools | | ^ | Deploy | Agent to Machine | s | | | | | | | ? |
| | System | Info | | | | D: . | | | | Lan Internet | - 8 | | |
| | Boot Cl | Ds | | Add mac | nines from: > Activ | e Directory | 3 > vCer | nter/ESX(1) > Local Core | > Manually | > New Settin | gs | | |
| | Mounts | 5 | | | Display name | | | User | name | | Message | | |
| | Bulk Pr | otect | | | | | | 01 | | | | | |
| 2 | Bulk De | eploy | | | | | | Please, ad | Id machines for o | deploy | | | |
| 1 | Downlo | ads | | | | | | | | | | Verify D | eploy |
| | Archive | e | ~ | | | | | | | | | | |

- Enter the IP or hostname of your vCenter/ESX(i) server
- Enter administrator credentials

| 168.10.40 | Port: | 443 | |
|------------|-------------------------|---|---|
| inistrator | Password: | | |
| | 168.10.40 inistrator | 168.10.40 Port: inistrator Password: | 168.10.40 Port: 443 inistrator Password: |

• Select the machines to which you are deploying the agents

After you have selected your machines you need to create a username:

- Click on "Settings" and enter the username and password that you wish to deploy with
- Click "Verify" to validate installation credentials
- Click "Deploy" when ready

| ? | | | | | | Aachines | Agent to | Deploy |
|--------|----------|-----------------|------------------|--------------|------------------|------------------------|--------------|----------|
| | emove | ⇔Settings 1 = R | > Manually > New | > Local Core | > vCenter/ESX(i) | > Active Directory | chines from: | Add ma |
| | Message | | User name | | | ay name | Disp | V |
| dit | Edi | | | | | W2K8.appassure.lab | ● VM4 | |
| dit | Edi | | | | ab | point-001.appassure.la | share | |
| Deploy | 3 Verify | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

| User name: | appassure\administrat | or | |
|-----------------|-------------------------------------|---------------|---|
| Password: | | | 2 |
| Port: | 8006 | | |
| Repository: | ✓ Protect machine repository-002 | after install | |
| Encryption Key: | (none) | - | |

• After clicking deploy, click the "Events" tab to monitor the progress of the deployment

| sks | | | | | | | | ? | 🔽 Active | Complete |
|------------------|-------------------|---------------------|----------------|-----------|----------|--------------|-----------------|--------|----------|------------|
| Job | | | | | | Status | Start Time | | End Time | De |
| Deploying\Upgr | ading AppAssure A | gent to '2' machine | e(s). | | | 0 of 2 | 11/13/2012 2:22 | 28 PM | | |
| | | | | | | | | | | |
| Job Details | | | | | | | | | | |
| Start Time: | 11/13/2012 2:2 | 2:28 PM | R | ate: | | | | | | |
| End Time: | | | Pr | rogress: | 0 of 2 | | | | | |
| Elapsed Time: | 1 minutes, 5 s | econds | T | otal Wor | k: 2 | | | | | |
| | | | Ca | ancel: | Click he | re to cancel | | | | |
| Child Tasks | | | | | | | | | | |
| Task | | | | | | | | Status | Rate | Progress |
| Installing AppAs | sure Agent to "VM | 2-W2K8' machine: | Downloading in | stallatio | n files | | | 22% | | 22 of 100% |
| instanting HppHs | | | | | | | | | | |

3. Manual deployment

To deploy Dell AppAssure manually via the Core server:

- Connect to the Dell AppAssure core server
- Go to Tools-> Bulk Deploy -> Manually

| Ho | me | Machines | R | eplication | Virtual Standby | Events | 1 Tools | Configuration | | | _ | | |
|------|---------|----------|---|------------|---------------------|-------------|---------|-----------------|--|---|-----------------|--------|--------|
| - 53 | | | | | | | - | | | | | | 0 |
| T | ools | | ^ | Deploy | Agent to Machine | s | | | | | | | ? |
| Sy | stem l | nfo | | | | | | | | | | | |
| B | oot CD | 5 | | Add mac | hines from: > Activ | e Directory | > vCer | nter/ESX(i) > I | Local Core 3 > Manually | > New 🛱 Settings | ⊞ Remove | | |
| AA | ounts | | | | Display name | | | | User name | | Message | | |
| В | ulk Pro | tect | | | | | | | Discourse of the section of the sect | la de la construcción de la constru | | | |
| 2 B | ulk Dep | loy | | | | | | | Please, add machines for d | Jeploy | | | |
| D | ownloa | ds | | | | | | | | | | Verify | Deploy |
| A | rchive | | ~ | | | | | | | | | | |

- Enter all of machines that you wish to deploy agents to
- Take note of the format for entering the names: hostname::username::password::port
- When done click "Add"

- Click "Verify" to ensure the machines are online and ready to deploy
- Once the machines have been verified click "Deploy"

| Home | Machines | Re | plication | ٧i | rtual Standby Ev | rents Tools | Configuration | | | | _ |
|-------------------|------------|----|-----------|--|------------------|-------------|-------------------------|----|----------------------------|--------|--------|
| Tools | | ^ | Deploy | Ager | nt to Machines | | | | | | ? |
| System Boot Cl | Info Ds | | Add ma | Add machines from: > Active Directory > vCenter/ESX(i) > Local Core > Manually > New \$\$ Settings #Remove | | | | | | | |
| Mounts | 5 | | | | Display name | Use | r name | | Message | | |
| Bulk Pr | otect | | | 0 | VM1-W2K8 | abt | assure.lab\administrato | C. | Machine is ready to deploy | | Edit |
| Bulk De | eploy | | | • | VM2-W2K8 | app | assure.lab\administrato | • | Machine is ready to deploy | | Edit |
| Downlo | ads | | | | | | | | | Verify | Deploy |
| Archive | е | ~ | | | | | | | | | |

After clicking deploy click the "Events" tab to monitor the progress of the deployment

| isks | | | | | ? | 🖌 Active | 🔲 Complete 📄 Fai |
|---|--|-----------------------------|------------------|--------|-----------------------|----------|------------------------|
| Job | | | | Status | Start Time | End Time | Deta |
| Deploying\Upgr | ading AppAssure Agent to '2' machine(s). | | | 0 of 2 | 11/13/2012 2:22:28 PM | | I. |
| Job Details | | | | | | | |
| Start Time: | 11/13/2012 2:22:28 PM | Rate: | | | | | |
| End Time: | | Progress: | 0 of 2 | | | | |
| Elapsed Time: | 1 minutes, 5 seconds | Total Work: | 2 | | | | |
| | | Cancel: | Click here to ca | ancel | | | |
| | | | | | | | |
| Child Tasks | | | | | | | |
| Child Tasks Task | | | | | Status | Rate | Progress |
| Child Tasks Task Installing AppAs | sure Agent to "VM2-W2K8' machine: Dow | nloading installation files | ; | | Status | Rate | Progress 22 of 100% |

4. New deployment

To deploy Dell AppAssure to a new machine via the Core server:

- Connect to the Dell AppAssure core server
- Go to Tools-> Bulk Deploy -> New

| ŀ | lome | Machines | R | eplication | Virtual Standby | Events | 1 Tools | Configurati | on | _ | | _ | _ | |
|---|------------------|-----------------|---|------------|---------------------|-------------|----------|-------------|--------------|-----------------------|------------|-----------------|--------|--------|
| | Tools | | ^ | Deploy | Agent to Machine | s | | | | | | | | ? |
| | System Boot C | n Info | | Add mac | hines from: > Activ | e Directory | r → vCer | nter/ESX(i) | > Local Core | > Manually 3 > New | # Settings | ⊞ Remove | | |
| | Mount | 5 | | | Display name | | | | User na | ame | | Message | | |
| 2 | Bulk Pr | rotect eploy | - | | | | | | Please, add | I machines for deploy | | | | |
| - | Downlo | pads | | - | | | | | | | | | Verify | Deploy |
| | Archive | e | ~ | | | | | | | | | | | |

- Enter the hostname and display name of the machine to which you wish to deploy
- Enter administrator credentials for that machine
- If you do not wish to reboot the machine automatically after the deployment, de-select "Protect machine after install"
- Select the repository that the machine should send its backups to

| Host name: | Sharepoint | | | |
|------------------|---|---------------|--|--|
| Display name: | Sharepoint | | | |
| Port: | 8006 | | | |
| User name: | administrator | administrator | | |
| Password: | | | | |
| Repository: | Automatic reboot after install Protect machine after install repository-002 | | | |
| Enonymption Vous | (nono) | | | |

5. Local agent deployment

Download the Dell AppAssure agent from AppAssure.com Run the installer locally on the machine that you wish to protect Click "Next" to begin the installation process

After reading the license agreement you must then "Accept" the agreement. After accepting the agreement you can then click "Next" to proceed with the install

If your machine is missing any prerequisites, you will be prompted to allow Dell AppAssure to install the missing components for you Once all prerequisites are met you can then click "Next" to proceed with the install

| AppAssure Agent Install | ation | 8-0- | -1× |
|-----------------------------|--------------------|-------------------|---------------|
| Welcome | | | |
| License Agreement | | | |
| Prerequisites | | 2 | the method |
| Installation Options | Click 'Next' butto | on to continue Ap | pAssure Agent |
| Progress | instattation. | | |
| Completed | | | |
| DELL | Back | Next | Cancel |

Dell AppAssure will send back diagnostic and usage information if you choose to allow Choose "Next" to continue with the installation

| AppAssure Agent Instal | lationX |
|------------------------|---|
| Welcome | Destination Folder |
| License Agreement | C:\Program Files\AppRecovery\Agent |
| Prerequisites | Change |
| Installation Options | Allow Agent to automatically send diagnostic and usage information to AppAssure Software, Inc |
| Progress | Port number 8006 |
| Completed | |
| DELL | Back Next Cancel |

Note: Enabling automatic feedback will allow the Dell AppAssure core to send logs periodically from all agents and cores to Dell.

To complete the installation and begin protecting your machine you must reboot the system

If you choose not to reboot you will not be able to begin taking backups of your system until a reboot has take place Choose "Finish" to complete the installation

| AppAssure Agent Instal | lation – 💌 |
|------------------------|--|
| Welcome | AppAssure Agent is now installed on this computer. |
| License Agreement | To backup this computer, launch Core Console and place this computer under protection. |
| Prerequisites | Need help? Contact your managed solution provider or visit <u>http://www.appassure.com/</u> . |
| Installation Options | You must restart your system for the configuration chapped to take effect. Select Yes to restart now or No |
| Progress | if you plan to restart later and click Finish. |
| Completed | Yes, I want to restart my computer now. No, I will restart my computer later. |
| DEL | Back Finish Cancel |

6. Installation of Dell AppAssure Linux agent

This installation is a manual process executed by root (sudo) in a terminal window, the following pre-requisites should be followed:

- Apply all outstanding patches to the base OS (sudo apt-get update)
- Download the Ubuntu Appassure Agent and copy it into /tmp
- Execute the installer script: cd /tmp; sudo ./appassure-installer-ubuntu-amd64-x.x. | tee > aa_install.log
- The installer produces a large log file which is saved in /tmp/aa_install.log in this example

notroot@ubuntu:/mnt/hgfs/VMShare\$ uname −a Linux ubuntu 3.2.0–23-generic #36–Ubuntu SMP Tue Apr 10 20:39:51 UTC 2012 x86_6

| x86_64 x86_64 GNU/Linux |
|--|
| notroot@ubuntu:/mnt/hgfs/VMShare\$ more |
| AppAssure installer starting up |
| CopyRight (C) AppAssure Software Inc. All Rights Reserved. |
| Determining operating system environment |
| Preparing command line utilities options |
| Installing required packages Reading package lists |
| Building dependency tree |
| Reading state information |
| dkms is already the newest version. |
| libblkid1 is already the newest version. |
| libpamOg is already the newest version. |
| libpcre3 is already the newest version. |
| linux-headers–3.2.0–23-generic is already the newest version. |
| linux-headers–3.2.0–23-generic set to manually installed. |
| libc6 is already the newest version. |
| make is already the newest version. |
| 0 upgraded, 0 newly installed, 0 to remove and 100 not upgraded. |
| done |
| Extracting archive packages into /tmp |
| Installing apprecovery packages |
| <u>Selecting pre</u> viously unselected package appassure-vss. |
| More(19%) |

The installer completes successfully and displays the message "Starting Appassure Agent... done"

| notroot@ubuntu:/mnt/hgfs/VMShare\$ uname –a |
|--|
| Linux ubuntu 3.2.0–23-generic #36–Ubuntu SMP Tue Apr 10 20:39:51 UTC 2012 x86_64 |
| X86_64 X86_64 GNU/Linux |
| notroot@ubuntu:/mnt/hgfs/VMShare\$ tail −20 aa_install.log |
| Processing triggers for ureadahead |
| ureadahead will be reprofiled on next reboot |
| Processing triggers for initramfs-tools |
| update–initramfs: Generating /boot/initrd.img–3.2.0–23–generic |
| Setting up appassure-agent (5.3.1) |
| package: appassure-agent |
| os: debian |
| stage: configure; upgrade |
| script: postinst |
| Adding system startup for /etc/init.d/appassure-agent |
| /etc/rc0.d/K20appassure−agent ->/init.d/appassure−agent |
| /etc/rc1.d/K20appassure−agent ->/init.d/appassure−agent |
| /etc/rc6.d/K20appassure−agent ->/init.d/appassure−agent |
| /etc/rc2.d/S20appassure−agent ->/init.d/appassure−agent |
| /etc/rc3.d/S20appassure−agent ->/init.d/appassure−agent |
| /etc/rc4.d/S20appassure−agent ->/init.d/appassure−agent |
| /etc/rc5.d/S20appassure-agent →/init.d/appassure-agent |
| Starting Appassure Agent done |
| Cleaning working directories |
| Done |
| notroot@ubuntu:/mnt/hgfs/VMShare\$ _ |
| |

Dell AppAssure Backup, Replication, and Recovery Evaluator's Guide: How to Manually Protect a Machine

Why read this guide

In some cases, including environments with expanded firewall and DNS settings, manual protection of the Dell AppAssure agent may be necessary.

How to manually protect a machine

After manual installation of an agent, that machine needs to be added to a Dell AppAssure Core and protected. Click "Protect Machine."

| DELL | Арр | Assure A | ppAssure Core 0 > Hom | e | | | | and the | Contact | AppAssure Support | docs Version | n: 5.3.1.550 |
|------|----------------|-----------------------------------|-----------------------|-----------------|-----------------|-----------------|-----------------------|--------------------|---------|--------------------|-----------------|--------------|
| | Home | Machines Replication | Virtual Standby | Events | Tools Cont | figuration | = | _ | = | _ | _ | |
| | Арри | Assure Core 0 | | | | | | | | | | ? |
| | Prote | ected Machines | | | | | | | | Protect Machi | ne Protect C | luster |
| | Status | Machine Name | | | Repositor | Repository | | Last Snapshot | | Recovery Points | Total Protected | Space |
| | AD-2008R2-0001 | | | | Repository 1 | | 11/17/2012 1:51:33 PM | | 10 | 1 | 5.41 GB | |
| | • | SharePoint-2010-0001 Repository 1 | | | | | | 11/17/2012 2:08:13 | РМ | 1 | 1 | 9.57 GB |
| | Repositories | | | | | | | | | | Add New Repo | sitory |
| • | Status | Repository Name | | | | Total Size | Free Spac | Protected Data | Machine | es Recovery Points | Compression | n Ratio |
| | • | Repository 1 | | | | 88.19 GB | 78.25 | GB 34.98 GB | | 2 | 11 | 72% |
| | Alert | 5 | | | | | | | | | | |
| | Level | Date | Message | | | | | | | | | |
| | 0 | 11/17/2012 2:07:56 PM | Protected machine 's | p0' has been ad | lded | | | | | | | |
| | 4 | 11/17/2012 1:27:12 PM | Deploy AppAssure Sof | ftware, Inc Age | nt on 'sp0' has | been cancelled. | | | | | | |
| | 0 | 11/17/2012 1:21:22 PM | Deploy AppAssure Sof | ftware, Inc Age | nt on 'sp0' has | started | | | | | | |
| | 4 | 11/17/2012 1:07:16 PM | Deploy AppAssure Sof | ftware, Inc Age | nt on 'sp0' has | been cancelled. | | | | | | |
| | 0 | 11/17/2012 12:58:32 PM | Deploy AppAssure Sof | | | | | | | | | |

First, connect to the machine you wish to protect. Provide the Host Name or IP address, the port, and credentials. Once connected, configure the Display name, choose the Repository and encryption key. The Volume groups will be listed, and protection will be set at default value of 60 minutes between backups.

| Host: | 192.168.164.128 | Port: | 8006 |
|------------|-----------------|-----------|-------|
| User name: | notroot | Password: | ••••• |

| Display Name: | 192.168.164.128 | |
|-----------------------------|-----------------|-----------|
| Repository: | Repository 1 | Ŧ |
| Encryption Key: | (none) | Ŧ |
| Initially pause protection: | | |
| | | - L. D. (|
| Volumes | Ap | biy Defau |
| Volumes Volume groups | Ap | piy Derau |

NOTE: Protection settings can also be modified from the default settings, detailed in the next section.

1. How to configure custom protection settings

Configuring protection schedules

Default settings direct the Dell AppAssure agent installed on each protected machine to perform a backup every 60 minutes throughout the day. You can adjust the frequency for longer intervals or to as little as every five minutes. Select the machine you wish to configure and continue to the next screen.

| App. | Assure App | oAssure Core 0 > Hom | e | | docs Version: 5.3.1.55 | | | |
|--------|----------------------|----------------------|--------|-------|--------------------------|-----------------------|-----------------|-----------------------|
| Home | Machines Replication | Virtual Standby | Events | Tools | Configuration | | _ | _ |
| АррА | Assure Core 0 | | | | | | | ? |
| Prote | ected Machines | | | | | | Protect Mach | ine Protect Cluster |
| Status | Machine Name | | | Re | pository | Last Snapshot | Recovery Points | Total Protected Space |
| • | AD-2008R2-0001 | | | Re | pository 1 | 11/19/2012 5:59:17 PM | 62 | 15.71 GB |
| • | SharePoint-2010-0001 | | | Re | pository 1 | 11/19/2012 5:56:14 PM | 22 | 28.15 GB |
| • | SQL Server-2010-0001 | | | Re | pository 1 | 11/19/2012 5:41:41 PM | 6 | 18.46 GB |
| 0 | Ubuntu-12.04 LTS-001 | | | Re | pository 1 | 11/19/2012 2:55:44 PM | 5 | 18.75 GB |

Modify the default Protection Settings by selecting the Protection Settings highlighted below in red.

| DELL | AppAssure | AppAssu | re Core 0 > AD-2008 | R2-0001 > Summary | _ | Co | ntact AppAssure Support doo | s Version: 5.3.1.550 |
|------|--|---|---------------------|-------------------------|-------------------------|---|-------------------------------|------------------------|
| S | iummary Rec | overy Points Events | Tools Confi | guration | _ | _ | _ | _ |
| | AD-2008R2 | -0001 | | | | | | |
| | Summary | | | | | | (| ? • Actions |
| | Host: AD1 Last Snapshot: Next Snapshot: Encryption: Version: | 11/19/2012 5:59:17 PM 11/19/2012 6:59:17 PM Disabled 5.3.1.55029 | | | | | | |
| ° [| Volumes | | | | | | | |
| | C:\ | | Total size: 40 GB | Used Space: 13.72 GB | Free space: 26.28 GB | Every 60 minutes peak, every 60 minutes weekends |] | |
| | | | | | | | | |

Click "Edit" to change the protection schedule for this machine.

| Volu | imes | [Protection is enabled Pause Protection] Apply Default | | | | | | |
|----------|---------------|--|--|--|--|--|--|--|
| | Volume groups | | | | | | | |
| v | > C:\ | Every 60 minutes peak, every 60 minutes weekends Edit | | | | | | |

Here you can edit the protection schedule of a machine. You can have a weekday and a weekend schedule, as well as weekday "Peak" and "Off Peak" schedules for protected volumes.

Or you can simply choose once-a-day protection.

You may also Apply this custom schedule to "all volumes."

Once configured Press "OK" to proceed.

| edule | |
|-------------------------------------|--|
| Weekday | |
| Start Ti Interval Off-peak (1 | me: 12:00 AM ; End Time: 11:59 PM ; : 60 ; minutes 1:59 PM to 12:00 AM) ction interval during off-peak Time: 60 ; minutes |
| Weekends | ection interval during weekends: 60 🗘 minutes |
| Daily protection | n Time: 7:00 PM 🔅 |

Once completed, the new Protection Schedule is configured and displayed in a summary window. Here you can see this particular machine will be protected every 10 minutes during peak periods.

| OFFE | AppAssure | AppAssi | ure Core 0 > AD-2008 | R2-0001 > Summary | | 1444 | Contact AppAssure Support | docs Version: 5.3.1.5502 |
|------|---|--|----------------------|-------------------------|-------------------------|-----------------------|---------------------------|----------------------------|
| | Summary Rec | overy Points Events | Tools Confi | guration | _ | | | |
| | AD-2008R2 | -0001 | | | | | | |
| | Summary | | | | | | | ? - Actions |
| | Host: AD1 Last Snapshot: Next Snapshot: | 11/19/2012 6:14:20 PM 11/19/2012 6:24:20 PM | 1 | | | | | |
| | Encryption: Version: | Disabled 5.3.1.55029 | | | | | | |
| | Volumes | | | | | | | |
| | C:\ | | Total size: 40 GB | Used Space: 13.72 GB | Free space: 26.28 GB | Every 10 minutes peak | | |
| | | | | | | | | |

Dell AppAssure Backup, Replication, and Recovery Evaluator's Guide: How to Configure Replication

Why read this guide

Replication is a key element in many data backup and recovery scenarios, and allows users to protect date by replicating it at alternative locations, physical or in the cloud. Dell AppAssure replication is a quick and easy way to install original recovery points on another Dell AppAssure Core.

Configuring replication

Protected machines may have their Recovery Points replicated to another Dell AppAssure Core. Core replication is used for redundancy by sending data to remote sites, datacenters, or Cloud sites.

To begin Replication, select Replication > Actions > Add Remote Core on the Core you wish to replicate.

| Deel |) Арр/ | Assure | Арр | Assure Core 0 > Repl | ication | | _ | - | | Contact AppAssure Supp | ort docs Version: 5.3.1.5502 |
|------|--------|--------------|----------------|----------------------|---------|-------|---------------|------------|----------|------------------------|----------------------------------|
| | Home | Machines | 1 Replication | Virtual Standby | Events | Tools | Configuration | | _ | _ | |
| | Replie | cation | | | | | | | | | 2 - Actions 3 Add Remote Core |
| | Outgo | oing Replica | ation | | | | | | | | Settings |
| | | | Remote Core | Name | | | | State | Machines | Progress | |
| | | | | | | | No data | to display | | | |
| | 0 | | | | | | | | | | |
| | Incom | ning Replica | ation | | | | | | | | |
| | | R | emote Core Nam | e | | | | State | Machines | Progress | |
| | | | | | | | No data | to display | | | |

Complete the "Select Replication type" pop-up by supplying the Core name (IP/host name), port, and the credentials for the Core.

Specify the machines to be replicated on the "Add Remote Core" pop-up by selecting the checkboxes. If the remote Core has multiple Repositories, you may specify which repository here. Press "Start Replication" to start the operation.

| Replac | e an existing replicated Core o | n sql1.appassure.lab: | - |
|---------|---------------------------------|----------------------------|------|
| Add a i | new Core to replicate to sql1.a | ppassure.lab: AppAssure Co | re 0 |
| nt Nan | nes | | |
| | Name | Repository | |
| V | AD-2008R2-0001 | Repository 1 | • |
| | SharePoint-2010-0001 | Repository 1 | • |
| | SQL Server-2010-0001 | Repository 1 | ~ |
| | Ubustu 12 04 LTC 001 | Reportion 1 | - |

Once you've configured Replication you can see the Replicated Machines listed

| Home | Machines | Replication | Virtual Standby | Events | Tools | Configuratio | | | | | | | |
|--------|------------------------------------|-------------|-----------------|--------------------------|-------|-----------------|-----------------|-----------------------|-------------------------|--|--|--|--|
| Арр | AppAssure Core 2 | | | | | | | | | | | | |
| Prote | Protected Machines Protect Cluster | | | | | | | | | | | | |
| Status | Machine Na | ne | | Repository Last Snapshot | | | Last Snapshot | Recovery Point | s Total Protected Space | | | | |
| | | | | | No | data to display | | | | | | | |
| Repli | icated Machi | nes | | | | | | | | | | | |
| Status | Machine Na | ne | | Repository | | | Recovery Points | Total Protected Space | Last Snapshot | | | | |
| • | AD-2008R2- | 0001 | | Repository | 1 | | 203 | 17 GB | 11/20/2012 5:49:31 PM | | | | |

Here is Summary sheet for the machine showing Recovery Points replicated to a second server:

| Deell | AppAssure | AppAssi | ure Core 0 > AD-2008 | R2-0001 > Summary | | A SAR | Contact AppAssure Support do | cs | Version: 5.3.1.55029 |
|-------|----------------|-----------------------|----------------------|-------------------------|-------------------------|-----------------------|--------------------------------|----|----------------------|
| | Summary Rec | overy Points Events | Tools Confi | guration | _ | | _ | | |
| | AD-2008R2 | -0001 | | | | | | | |
| | Summary | | | | | | | ? | - Actions |
| | Host: AD1 | | | | | | | | |
| | Last Snapshot: | 11/20/2012 5:59:38 PM | K. | | | | | | |
| | Next Snapshot: | 11/20/2012 6:09:38 PM | 1 | | | | | | |
| | Encryption: | Disabled | | | | | | | |
| | Version: | 5.3.1.55029 | | | | | | | |
| | Volumes | | | | | | | | |
| | C:\ | | Total size: 40 GB | Used Space: 13.72 GB | Free space: 26.28 GB | Every 10 minutes peak | | | |
| | Replication | | | | | | | | |

Dell AppAssure Backup, Replication, and Recovery Evaluator's Guide: How to Configure Virtual Standby for ESX(i) and Hyper-V

Why read this guide

Dell AppAssure's Virtual Standby provides the ability to offer high availability to mission critical servers at all times. Any machine that is protected with Dell AppAssure can automatically be recovered as converted to a virtual machine on VMware ESX(i) or Workstation, or Microsoft Hyper-V platforms.

Dell AppAssure allows business to achieve much-improved business continuity for their IT services, as evidenced by its highly granular five-minute Recovery Point Objective's (RPO) and near-zero Recovery Time Objectives (RTO's) - far better than traditional recovery methods that can take hours or days.

Configuring

Virtual standby allows for the automatic creation of a virtual machine based on backups stored in the Dell AppAssure repository.

To create a virtual standby:

- Connect to the Dell AppAssure core server and click "Virtual Standby"
- Click "Actions"
- Click "Add"

| Н | ome | Machines | Replication | 1 Virtual Standby | Events | Tools | Configuration | _ |
|----|--------|------------|-------------|-------------------|--------|-------|--------------------|------------|
| | | | | | | | | |
| | Virtua | al Standby | | | | | | ★2 Actions |
| Ì | | | | | | | | 3 Add |
| 12 | | | | | | | | Pause |
| | | | | | | | No data to display | Resume |
| | | | | | | | | Stop |

- Select the machine to be used as a virtual standby
- Choose the type of virtual standby to be created for the selected agent

| Add Vi | rtual Standby | | | | | × |
|--------|---------------|---|--------------|---|---|------|
| Agent: | 192.168.10.68 | • | Export type: | ESX(i) Export ESX(i) Export | Ŧ | |
| | | | | VMWare Workstation Export Hyper-V Export | | ncel |

Note: Choosing VMware Workstation Export will generate a folder which contains all the files necessary to run the virtual machine.

To create a virtual standby for ESX(i), enter the hostname/IP of the ESX(i) host or vCenter server along with administrator credentials. When done, press "Connect."

In the pop-up window enter the desired configuration for the virtual standby machine.

| ser name: administrator | | | Port: | 443 | | | |
|-------------------------|-----------|--|-----------|-----|---|--|--|
| ptions Vo | olumes | | Password. | | | | |
| Virtual Mach | ine Name: | EXCH-001 | | |] | | |
| Memory: | | Use the same amount of RAM as source machine Use a specific amount of RAM: 4096 | | | | | |
| Resource Po | ol: | AA Lab/AA Cluster/Resources datastore1 | | | | | |
| Datastore: | | | | | | | |
| Disk Mappi | ng | | | | | | |
| Disk Provisio | ning: | O Thin | O Thick | | | | |
| Disk Mapping | : | Automatic 👻 | | | | | |

Note: "Perform initial ad-hoc export" will trigger an immediate conversion on a machine's backup to a virtual standby upon selecting "Save."

If choosing to export a machine to Hyper-V, Dell AppAssure will require the hostname/IP of a Hyper-V host.

In the Hyper-V export pop-up window, enter the desired configuration for the virtual standby.

| Hyper-V Export | | ? X |
|--|---------------------------------------|------|
| 🔿 Use local machine | | |
| emote host: | | |
| Hyper-V Host Name: | 192.168.10.50 | |
| Port: | 8010 | |
| User name: | administrator | |
| Password: | | |
| VM Machine Location: | c:\virtualmachines | |
| Export Volumes Options | | |
| | | |
| Volume | | |
| ✓ (Volume Labeled 'Systematic Systematic | em Reserved') | |
| ✓ C:\ | | |
| | | -) |
| | · · · · · · · · · · · · · · · · · · · | |
| Perform initial ad-hoc export | Save | ncel |
| | | _ |

Note: "Perform initial ad-hoc export" will trigger an immediate conversion on a machines backup to a virtual standby upon selecting "Save."

After saving the configuration, the virtual standby task will be displayed and take place after every snapshot is taken.

| Home | Mac | hines Replica | ation Virtual Sta | ndby Events | Tools (| Configuration | | | | | |
|------|----------------|--|-------------------------------------|---------------------|--------------|---------------|-------------|----------|---------------------------------|--------------------------------------|-----------------------------|
| Virt | ual Sta | ndby | | | | | | | | | Actions |
| | • | EXCH-001 Destination: Export Type: | 'EXCH-001' on vCer VMWare ESX(i) | ter target '192.168 | 3.10.50:443' | | l | Last exp | port: Not performed | | - |
| | • | VM1-W2K8 Destination: Export Type: | 'VM1-W2K8' at 'c:\v Hyper-V | irtualmachines' | | | l | Last exp | port: Not performed | | • 🕅 |
| Expe | ort Qu Mach | eue ine Name | Destinat | ion | | | Export Type | | Maximum concur Schedule Type | rent exports number set to Status | o: 5 (edit) 🔽 Actions |
| | VM1- | W2K8 | VM1-W2 | K8′at′c:\virtualma | chines' | | Hyper-V | | Ad-hoc | | 15% |

Dell AppAssure Backup, Replication, and Recovery Evaluator's Guide: How to do Live RecoveryTM for Microsoft Exchange

Why read this guide

For most businesses Microsoft Exchange Server is an essential and highly visible business communications tool. In this document we'll show how Dell AppAssure's Live Recovery feature can help your company achieve near-zero Recovery Time Objectives (RTO).

Live Recovery eliminates the need for hours-long Exchange recoveries after a failure. With just a few steps, an Exchange Server administrator can have users sending and receiving emails, and also accessing stored emails, within minutes of a server loss, even if very large amounts of mailbox and message data are being restored.

How to do Live Recovery[™] for Microsoft Exchange

To begin a Live Recovery of an Microsoft Exchange server, connect to the Dell AppAssure core server and select your Exchange server.

| WIN | -CEBR35JC9MT | | | | ? |
|--------|----------------|--------------|------------------------|-----------------|-----------------------|
| Prote | ected Machines | | | Protect Machin | e Protect Cluster |
| Status | Machine Name | Repository | Last Snapshot | Recovery Points | Total Protected Space |
| 0 | core-002 | repository-1 | 11/26/2012 10:47:16 AM | 492 | 1.27 TB |
| ٢ | DC-001 | repository-1 | 11/26/2012 10:50:19 AM | 491 | 31.4 GB |
| • | EXCH-001 | Repository 2 | 11/26/2012 11:13:04 AM | 231 | 122.44 GB |
| 0 | SharePoint-001 | Repository 2 | 10/26/2012 12:01:12 AM | 19 | 35.82 GB |
| 0 | SQL-001 | repository-1 | 11/26/2012 10:33:55 AM | 491 | 73.95 GB |
| ۲ | ubuntu-002 | repository-1 | 11/26/2012 10:50:50 AM | 362 | 55.76 GB |
| • | VM1-W2K8 | repository-1 | 11/8/2012 12:48:07 AM | 482 | 32.61 GB |
| 0 | VM2-W2K8 | repository-1 | 11/15/2012 10:08:07 AM | 475 | 20.05 GB |
| 0 | VM3-W2K8 | repository-1 | 11/26/2012 10:39:02 AM | 488 | 46.36 GB |
| 0 | VM4-W2K8 | repository-1 | 11/26/2012 10:33:55 AM | 492 | 74.36 GB |

Once connected to your Exchange sever, select the "Recovery Point's" tab

- Select a recovery point and expand it by clicking the arrow to the left of the "Status" bubble
- Select "Rollback"

| Summary 1 Recovery Points Events Tools Configuration | | | | |
|---|-----------------|-------------------------------|--|--|
| EXCH-001 Recovery Points | | | | ? |
| Summary | | | | |
| Total Recovery Points: 231 | Reposito | ry Status | | |
| Passed Checks Count: 196 | | | | |
| Required Checks Count: 34 | | | | |
| Failed Checks Count: 0 | Repository 2 - | 1.8 | | |
| Total Protected Data: 122.44 GB | | | | |
| Repository: Repository 2 | 1 | | | |
| | 0 0.2 0.4 0.6 1 | .8 1 1.2 1.4 1.6 Size (TB) | 1.8 | |
| | | Used | Free | |
| | | | | |
| | | | | (|
| Recovery Points | | | | Actions |
| Page 1 of 10 (232 items) 🛞 🕙 1 2 3 4 5 6 7 8 9 10 🕑 😕 | | | | |
| Statur Encounted Contantr | | | Ì | |
| | | Tuno | Creation Date | Size |
| | | Туре | Creation Date | Size |
| v 2 • (Volume Labeled 'System Reserved'), C: E: F:\ | | Type Incremental | Creation Date 11/26/2012 11:43:05 AM | Size 22.46 MB |
| Volume Labeled 'System Reserved'), Cri, Eri, Fri | | Type Incremental | Creation Date 11/26/2012 11:43:05 AM | Size 22.46 MB |
| Clume Labeled 'System Reserved'), Cri, Eri, Fri | | Type Incremental | Creation Date 11/26/2012 11:43:05 AM Mount Export - 3 Roll | Size 22.46 MB ack Delete Check - |
| 2 (Volume Labeled 'System Reserved'), Cil, Eil, Fil Actions | | Type Incremental | Creation Date 11/26/2012 11:43:05 AM Mount Export - 3 Rolt | Size 22.46 M8 ack Delete Check - |
| 2 Contents | | Type Incremental | Creation Date 11/26/2012 11:43:05 AM Mount Export - 3 Rolt | Size 22.46 MB ack Delete Check - |
| 2 Contents Status Title | | Type Incremental | Creation Date 11/26/2012 11:43:05 AM Mount Export - 3 Rolt | Size 22.46 MB ack Delete Check • |
| 2 Contents Status Title (Volume Labeled 'System Reserved'), Cil, Eil, Fil | | Type Incremental | Creation Date 11/26/2012 11:43:05 AM Mount Export - 3 Rolt | Size 22.46 MB ack Delete Check - Size 400 KB |
| 2 Image: Contents Status Title > Image: Contents | | Type Incremental | Creation Date 11/26/2012 11:43:05 AM Mount Export - 3 Rolt | Size 22.46 MB ack Pelete Check - Size 400 KB 20.27 MB |

- Select the Exchange server under "Protected Machine"
- Click "Load Volumes"

| Rollback - Cho | ose Destination | ? × |
|----------------|-----------------|--------------|
| Protected A | Nachine | |
| EXCH-00 | 1 (Source) | • |
| Recovery C | onsole Instance | 1 |
| Host: | | |
| Passwor | : | |
| | | Load Volumes |

- Select the volumes to mount and the destinations to mount them to
- Enable the "Live Recovery" and "Force Dismount" options
- Click "Rollback" when ready

| - | Source | Destination |
|---|---|--------------------------------------|
| 8 | Volume (C:\) 6.62 GB free of 39.9 GB | |
| | Volume (System Reserved) 68.77 MB free of 100 MB | |
| 1 | database (E:\) 30.25 GB free of 60 GB | database (E:\)30.25 GB free of 60 GB |
| V | logs (F:\) 95.09 GB free of 100 GB | logs (F:\)95.09 GB free of 100 GB |

Dell AppAssure Backup, Replication, and Recovery Evaluator's Guide: How to do Bare-Metal Recovery (BMR)

Why read this guide

Bare-Metal Recovery (BMR) provides the ability to restore an entire system back to the original or dissimilar hardware. For example, a physical system can be restored to a virtual or cloud platform, and vice versa. This functionality separates the Operating System from a specific platform, providing portability.

Bare-Metal Recovery is most often used in disaster recovery scenarios or migration projects. This can be used to deploy new hardware in case of disaster, and also facilitate the migration to a public or private cloud.

Installation Notes

1. Prepare Target Machine:

- The Dell AppAssure Boot CD can be created at the "Tools" tab of the Core Server. This will create an ISO CD image based on Microsoft WinPE.
- If restoring to a physical machine, burn the ISO image to a CD or DVD. If restoring to a Virtual Machine (VM) the ISO may be mounted as a virtual CD ROM.
- Once booted, this machine will be ready for the user to connect to it from the Core Server to begin the Bare-Metal Restoration process.

2. Connect to the target server's Boot CD via IP address to start the restore.

To begin creating the Boot CD open the "Tools" tab of Core and select the "Boot CDs" menu. In the Actions menu at the right of the screen select "Create Boot CD"

| Deel | AppAssure | | Арр | Assure Core 0 > Tool | s | | | | Contact AppAssure Support doc | s Version: 5.3.1.55029 |
|------|--|-----|-------------|----------------------|--------|-------|---------------|--------------------|---------------------------------|--|
| | Home Machi | nes | Replication | Virtual Standby | Events | Tools | Configuration | _ | _ | |
| | Tools System Info Boot CDs | ^ | Boot C | Ds 60 Path | _ | | | | Creat | ? • Actions Create Boot CD Delete |
| | Mounts Bulk Protect Bulk Deploy Downloads | | - | | | | | No data to display | | |
| | Archive | ~ | | | | | | | | |
| | Diagnostics | ~ | | | | | | | | |
| | Reports | ~ | | | | | | | | |
| • | | | | | | | | | | |

Enter the desired name of the Boot CD ISO in the Output Path field. To configure this Boot CD to use DHCP, you may leave the default (all zeros) under the "Connections" section; otherwise, enter your desired network configuration. Optionally, you may add Ultra VNC to this Boot CD so that you may remotely connect to it. You may also add custom drivers to this Boot CD via the "Add a driver" section. Press "Create Boot" CD to continue.

| tions | | Drivers | _ | _ | _ | |
|---------------------|---------|---------|------|------|---------|--------------|
| Connection | | Class | Name | Date | Version | Manufacturer |
| IP Address: | 0.0.0.0 | | | | | |
| Subnet Mask: | 0.0.0.0 | | | | | |
| Default Gateway: | 0.0.0.0 | | | | | |
| DNS Server: | 0.0.0.0 | | | | | |
| Ultra VNC | | | | | | |
| Add Ultra VNC: | | | | | | |
| Auto-select VNC Por | | | | | | |
| UltraVnc Port: | 5900 | | | | | Add a drive |
| Illtra VNC Password | | | | | | |

Once the machine is booted to the Boot CD the IP and password will be displayed. This information is required by the Core Server in order to begin recovery.

| C 5.3.1 (55029) | | | | |
|-------------------------------|-----------------|---------------|---------------|--------------------------|
| Console About | \$ | | | Daiversal Accovery Coase |
| - Network adapters settings - | TD address | Mask | Cataway | Change |
| Local Area Connection | 192.168.164.135 | 255.255.255.0 | 192.168.164.2 | |
| | | | | Reboot |
| | | | | Driver Injection |
| | | | | Command prompt |
| • | | | • | |
| Authentication | | | | |

From the Dell AppAssure Core, browse to the Recovery Point of the Server you wish to restore. Select a Recovery Point and press the "Rollback" button.

| DELL | Арр | Assure | AppAssu | re Core O > S | harePoint-2010-000 | 1 > Recovery Point | - | 19 | C | ontact AppAs | sure Suppor | t docs | Version: 5.3.1.5 | 5029 |
|------|---|---------------------|-----------------|---------------|--------------------|--------------------|-----------------------|----|-------|--------------|-------------|----------|------------------|----------|
| | Summar | ry Recovery | Points Events | Tools | Configuration | _ | _ | = | - | - | - | = | - | ^ |
| | Share | ePoint-2010-(| 0001 Recovery F | oints | | | | | | | | | ? | |
| | Sum | mary | | | | | | | | | | | | |
| • | Total Recovery Points: 43 Total Protected Data: 31.22 GB Repository 1 Repository 1 25.3 62.9 0 10 20 30 40 50 60 70 80 90 Size (GB) Used Free | | | | | | | | | | | | | |
| | Reco | overy Points | | | | | | | | | | | + Actions | |
| | Page 1 | 1 of 2 (43 items) | | > » | | | | | | | | | | |
| | S | tatus Encrypte | ed Contents | | Туре | | Creation Date | | | | | Size | | |
| | ~ | • 6 | C:\ | | Incremental | | 11/20/2012 3:00:04 PM | | | | | 91.35 MB | | |
| | | Actions Contents | | | | | | | Mount | Export + | Rollback | Delete | Check 🔻 | Ŧ |
| • | | | | | | | | | | | | | | |

In the pop-up window enter the IP address and password displayed on the Dell AppAssure Boot CD. Press "Load Volumes" when done.

| Rollback - Choo | se Destination | ? > |
|-----------------|-------------------|--------------|
| Protected Mach | ine | |
| SharePoint-2 | 010-0001 (Source) | T |
| Recovery Conso | ole Instance | |
| Host: | 192.168.164.135 | |
| Password: | ••••• | |
| | | Load Volumes |
| | | |

Choose the appropriate Disk Mapping and click "Rollback" to begin the recovery.

| isk | Mapping | | | _ |
|-----|-------------------------|-------------------------------|--------------------------|---|
| ~ | Source Volume | | Destination Disk | |
| 1 | Volume (C:\) 19.68 G | <mark>8 fre</mark> e of 40 GB | Disk0 Capacity: 40 GB | |

The summary screen will show statistics and progress of the recovery.

| Nov 2012 08:0 | lumes 'C:\' from the machine ShareP 0:04 UTC, (Incremental) | oint-2010-0001 | to the machine Universal Rec | overy Console, | recovery point as of 20 |
|----------------------------|--|----------------|------------------------------|----------------|-------------------------|
| Start Time: | 11/21/2012 9:45:37 AM | | | End Time: | 11/21/2012 11:12:14 AM |
| Status: | Succeeded | | | | |
| Details | | | | | |
| Elapsed Time: | 1 hours, 26 minutes, 36 seconds | Progress: | Succeeded | | |
| Rate: | 4.11 MB/s | Total Work: | 20.86 GB | | |
| Time Remaining: | 00:00:00 | | | | |
| Child Tasks | | | | | |
| Task Details | | | | Status | |
| Rolling back volur | ne 'C:\' | | | Succeeded | |
| Start Time: | 11/21/2012 9:45:53 AM | Rate: | 4.13 MB/s (20.86 GB total) | | |
| | 11/21/2012 11:12:07 AM | Progress: | Succeeded | | |
| End Time: | | Total Works | 20.86 GB | | |
| End Time: Elapsed Time: | 1 hours, 26 minutes, 14 seconds | TOLAL WORK. | 20.00 00 | | |

Press the "Reboot" button on the target machine and confirm the reboot by clicking the "Yes" button to complete the recovery process.

| Network adapters settings | ; | Maak | Criticular | Change |
|---------------------------|-----------------------|--|-------------------------|------------------|
| Local Area Connection | 192.168.164.135 | 255.255.255.0 | 192.168.164.2 | |
| | DO NOT re Are you: | eboot until the restore sure you want to rebo | e is completed. pot? | Reboot |
| | | Yes | No | Driver Injection |
| | | | | Command prompt |
| | | - | | |

Dell AppAssure Backup, Replication, and Recovery Evaluator's Guide: How to do a file and folder recover

Why read this guide

Recovery Points, also referred to as snapshots (snaps), are backups taken at regular intervals which protect entire machines, their disks, applications, and data. Dell AppAssure allows users to access these Recovery Points using the familiar Windows Explorer interface for recovering files and folders.

Any Recovery Point can be mounted to a directory on the Core server, enabling administrators and users to inspect the data located in the Snapshot using native Windows search tools.

Configuring

Select the machine where the file for recovery was located, and then select the recovery point from that machine to begin.

| • | AppAssı | ıre | AppAssure Co | ore 0 > AD-2008R2-0001 > Recovery Points | Contact AppAssur | e Support docs Version: 5.3 |
|--|--------------------------|-------------|--------------------------|--|--|---------------------------------|
| Su | immary | Recovery P | oints Events | Fools Configuration | | _ |
| | AD-2008 | R2-0001 Re | covery Points | | | Ċ |
| | Summary | , | | | | |
| | Total Prot Repository | ected Data: | 17.04 GB Repository 1 | Repository 1 - 25.1 | 63.1 20 30 40 50 60 70 80 90 Size (GB) | |
| | Recovery | Points | | | | - Actio |
| | Page 1 of 9 | (220 items) | | 4 5 6 7 8 9 > ≫ | | |
| | Status | Encrypted | Contents | Туре | Creation Date | Size |
| | > 0 | 6 | C:\ | Incremental | 11/20/2012 8:34:18 PM | 2.36 MB |
| | > 0 | 6 | C:\ | Incremental | 11/20/2012 8:24:05 PM | 1.83 MB |
| and the second s | | | | | | |

Select the Recovery Point you want to access by clicking the ">" symbol next to the snapshot. It can also be expanded by clicking the ">" symbol. Once the point in time you want to select is chosen click "Mount" on the Action panel.

| Deel | AppAssure | AppAssure Core 0 > AD | 2008R2-0001 > Recovery Points | - 19896 | Contact AppAssure Support do | cs Version: 5.3.1. |
|------|--|---------------------------------|-------------------------------|-----------------------------|--------------------------------|----------------------|
| | Summary | | | | | Ŀ |
| | Total Recovery Points: Total Protected Data: Repository: | 220 17.04 GB Repository 1 | | Repository Status | | |
| | | | Repository 1 - 25.1 | 63.1 | | |
| | | | 0 10 20 | 30 40 50 60 70 Size (GB) | 80 90 | |
| 0 | Recovery Points | | | | | + Actions |
| | Page 1 of 9 (220 items) | | 6789 🔊 测 | | | |
| | Status Encrypted | Contents | Туре | Creation Date | Size | |
| | v 🔍 🔓 | C:\ | Incremental | 11/20/2012 8:34:18 PM | 2.36 | MB |
| | Actions | | | | Mount Export - Rollba | ack Delete |

In the pop-up menu, define the location of the mount under "Mount Location", the "Mount Type" and decide whether or not to create a Windows share.

To create a Windows share of this Mount, click the checkbox "Create a Windows share for this mount", name the share, and optionally add groups who can access the share on the network.

| Mount Recovery Point | ? |
|---|---------------------------------------|
| Mount Location | |
| Local folder: C:\AA_MountsiAD-2008R | 2-0001-20121121-115154 |
| Volume Images | |
| ☑ C:\ | |
| Mount Type | |
| Mount Read-only Mount Read-only with previous writes Mount Writable | |
| Create a Windows share for this Mount | |
| Share name: | AD-2008R2-0001-20121121-115154 |
| Allow access to members of Group (optional field): | (for example: Guests, Administrators) |
| | Mount |

After clicking the "Mount" button, you can click on this pop-up window as shown to monitor the Mount process in the next window.

| Active Task | |
|----------------------------------|---------------------|
| Monitor Active Task | Open Monitor Window |
| Recovery Point Mount job started | |
| | Close |

The Active Task window displays the status of the mount process and indicates when it's completed successfully.

| Start Time: | 11/20/2012 8:41:18 PM | | | End Time: | 11/20/2012 8:41:29 PM |
|---|---|--|---|---------------------|-----------------------|
| Status: | Succeeded | | | | |
| Details | | | | | |
| Elapsed Time: | 11 seconds | Progress: | Succeeded | | |
| Rate: | | Total Work: | ••• | | |
| Time Remaining: | 00:00:00 | | | | |
| | | | | | |
| Child Tasks Task Details | | | | Status | |
| Child Tasks Task Details Mounting Increment Unwritten | al of 'C:\' on 'AD-2008R2-0001' as of '11 | /20/2012 8:34:18 PM' (1 | 1/20/2012 8:34:18 PM local time) | Status Succeeded | |
| Child Tasks Task Details Mounting Increment Unwritten Start Time: | al of 'C:\' on 'AD-2008R2-0001' as of '11 11/20/2012 8:41:18 PM | /20/2012 8:34:18 PM' (1 Rate: | 1/20/2012 8:34:18 PM local time) | Status Succeeded | |
| Child Tasks Task Details Mounting Increment Unwritten Start Time: End Time: | al of 'C:\' on 'AD-2008R2-0001' as of '11 11/20/2012 8:41:18 PM 11/20/2012 8:41:29 PM | /20/2012 8:34:18 PM' (1 Rate: Progress: | 1/20/2012 8:34:18 PM local time) Succeeded | Status Succeeded | |
| Child Tasks Task Details Mounting Increment Unwritten Start Time: End Time: Elapsed Time: | al of 'C:\' on 'AD-2008R2-0001' as of '11 11/20/2012 8:41:18 PM 11/20/2012 8:41:29 PM 10 seconds | /20/2012 8:34:18 PM' (1 Rate: Progress: Total Work: | 1/20/2012 8:34:18 PM local time) Succeeded | Status Succeeded | |

Opening Windows Explorer to the Mount location will allow you to browse the Recovery Point contents.

| 🕌 database | | | | | |
|----------------------------|---|--------------------|-----------------|-------|----|
| 😋 🔾 🗸 🕹 🗸 Computer | ▼ Local Disk (C:) ▼ ServerData ▼ database | - 😂 | Search database | | 2 |
| Organize 👻 Indude in libra | ary 🔻 Share with 🔻 Burn New folder | | | 8== • | |
| ☆ Favorites | Name ^ | Date modified | Туре | Size | |
| E Desktop | file 1.dbf | 11/20/2012 8:22 PM | DBF File | 11 | KB |
| Downloads | file2.dbf | 11/20/2012 8:23 PM | DBF File | 11 | KB |
| Recent Places | file3.dbf | 11/20/2012 8:23 PM | DBF File | 11 | KB |
| 📜 Libraries | | | | | |
| Documents | | | | | |
| J Music | | | | | |
| Pictures | | | | | |
| Videos | | | | | |
| Computer | | | | | |
| 🗣 Network | | | | | |
| 3 items | | | | | |

Note that all mounts will take the format of: drive_letter\drivename\folder

Explorer is pointed (in this example) to C:\AA_Mounts\AD-2008R2-0001-20121121-014423\C_\ServerData\database

| 퉬 database | | | | | | | _0 |
|--|---|--|----------------------------------|----------------------|-----------------|-------|----|
| 🕞 🖓 🗸 🗸 Computer | • System (C:) • AA_Mounts • AD-2008R2-000 | 1-20121121-014423 • C_ • | ServerData • database | - | Search database | | Į |
| Organize 👻 Indude in libra | ary 🕶 Share with 💌 Burn New folder | | | | | 8== - | |
| 🔆 Favorites | Name * | Date modified | Туре | Size | | | |
| Desitop Downloads Decent Places Loraries Documents Music | fie1.obf fie2.obf fie3.obf | 11/20/2012 8:22 PM 11/20/2012 8:23 PM 11/20/2012 8:23 PM | DBF File DBF File DBF File | 1 KB 1 KB 1 KB | | | |
| Pictures Videos Computer | | | | | | | |
| | | | | | | | |
| 3 items | | | | | | | |

The Mount's Windows share is also visible via Windows Explorer over the network.

| ganize 🔻 Burn N | ew fol | der | | 855 - | - 🔳 | 2 |
|---------------------|--------|------------|--------------------|-------------|-----|----|
| | - | Name ^ | Date modified | Туре | | Si |
| Libraries | |) config | 11/20/2012 8:21 PM | File folder | | |
| Documents Music | _ |) database | 11/20/2012 8:23 PM | File folder | | |
| Pictures | | 🎉 logs | 11/20/2012 8:21 PM | File folder | | |
| Videos | | | | | | |
| Computer | | | | | | |
| Network | | | | | | |
| vmware-host | Ξ. | | | | _ | |

Mounted Recovery Points remain mounted until an administrator dismounts them via the Core Server by going to Tools > Mounts section.

Here, single or multiple Mounted Recovery Points can be dismounted.

To dismount, select "dismount" and confirm the action.

It All Boils Down To...

RPO - Recovery Point Objective

How Much Data Are You Willing To Lose? 5 Minute RPO... REALLY!

RTO - Recovery Time Objective

How Much Productivity Time Are You Willing To Lose? Near ZERO RTO... REALLY!

Resources

Dell AppAssure Documentation, including User Guides http://docs.appassure.com

Dell AppAssure Customer forum http://forum.appassure.com

Sales and Pricing Information <u>www.appassure.com</u> <u>sales@appassure.com</u>

Twitter: <u>@AppAssure</u> Facebook: <u>http://www.facebook.com/appassure</u>

