

Backup and Recovery FAQs

This document answers frequently asked questions regarding the Emerson system Backup and Recovery application.



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Introduction

The Backup and Recovery application is an easy to use, easy to manage data backup and disaster recovery solution for your DeltaV system, AMS Suite (AMS Device Manager and AMS Machinery Manager) and other critical information. Sold and supported by Emerson, the Backup and Recovery application is based on the industry leading Acronis Backup & Recovery software. The Backup and Recovery application includes standard backup plan templates for all DeltaV workstation types and the AMS Suite.

General Information

Why was Backup and Recovery developed?

Backup and Recovery was developed to meet customer demand for an Emerson supported data backup and recovery solution. Backup and Recovery was the first product released from the User Driven Enhancements Program (UDEP).

Is Backup and Recovery an Emerson standard product?

Yes. Backup and Recovery is sold and supported by Emerson.

How do I get technical support for Backup and Recovery?

Technical support for Backup and Recovery is provided under your DeltaV system Foundation Support or Guardian Support agreement. If you have Foundation or Guardian Support, you call the Global Service Center for support just like any other DeltaV product.

Can I use Backup and Recovery to back up data on non-Emerson PCs?

Backup and Recovery is intended to provide a backup and recovery solution for Emerson systems and associated data. Backup and Recovery is capable of backing up data on non-Emerson PCs, but it is recommended that Backup and Recovery only be used to backup non-Emerson data related to the operation of the DeltaV system and/or AMS Suite. To backup data on non-Emerson PCs that are not associated with the operation of the DeltaV system or AMS Suite, it is recommended you contact your local Acronis sales representative.

What version of the Acronis Backup & Recovery software is used?

Backup and Recovery v1.2 uses Acronis Backup & Recovery 11 Advanced Server and Advanced Workstation and Acronis Backup and Recovery 10 OEM Server and Workstation. Backup and Recovery v2.3 uses Acronis Backup & Recovery 11.5 Advanced Server and Advanced Workstation. Backup and Recovery v2.3 replaces Backup and Recovery v1.2.

What versions of the DeltaV system can I use Backup and Recovery?

Backup and Recovery v2.3 can be used with DeltaV v9.3.1, v10.3.1, v11.3.1, and v12.3.

What operating systems are supported?

Backup and Recovery can be used on the same versions of the Microsoft Windows client and server operating systems as approved for use on the DeltaV system versions that are compatible with Backup and Recovery.

Does Backup and Recovery replace the Critical Data Backup Application?

Yes. Backup and Recovery is a functional replacement for the Critical Data Backup Application (CDBA).

I am currently using CDBA. How do I upgrade to Backup and Recovery?

CDBA customers should contact their local Emerson sales offices for details on upgrading CDBA to Backup and Recovery.

I am interested in Backup and Recovery but I do not have the resources to implement it. Can Emerson help?

Yes. Emerson has a Backup and Recovery Lifecycle Care program to help with Backup and Recovery network architecture, installation, and validation. Please refer to the Backup and Recovery Services FAQ white paper or contact your local Emerson sales office for more information.

Where can I find more detailed information on Backup and Recovery?

The Backup and Recovery product data sheet and frequently asked questions white paper may be found on the Emerson Process Management Web site. In addition, detailed product and user documentation is provided on the Backup and Recovery DVD as noted below. You may also contact your local Emerson sales office for more information.

Emerson documentation:

- Introduction to Backup and Recovery
- This manual provides an overview of backup system architecture and software installation, as well as detailed reference material for using the Emerson Backup Plan Templates and for data recovery tasks.

Acronis documentation:

- Acronis Backup & Recovery User Guide
- Acronis Backup & Recovery Command-Line Reference
- Acronis Backup & Recovery Quick Start Guide
- Acronis Backup & Recovery Installation Guide

System Architecture

What components are included with Backup and Recovery?

Backup and Recovery includes installation options for the backup agent, management console, management server, storage node, bootable media builder, components for remote installation, command-line tool, tray monitor, PXE server, wake-on-LAN proxy, and license server. In addition, the optional features of Universal Restore and Deduplication are included and available with the appropriate licenses.

What system architecture options are available?

With Backup and Recovery there are three supported architecture options available; the options are defined by the location of the management server. In the first option, the management server is installed on a DeltaV Application Station and used to back up workstations and servers within the same DeltaV system. In the second option, the management server is installed on a non-DeltaV PC located on the network level above the DeltaV area control network ("level 2.5"). The management server is located within the DeltaV system firewall and used to back up workstations and servers within a single DeltaV system or possibly multiple DeltaV systems that share the same level 2.5 network and reside within the same system firewall. In the third option, the management server is installed on a non-DeltaV PC located on the plant LAN ("level 3"). The management server is located outside the DeltaV system firewall and used to back up workstations and servers within a single DeltaV system or multiple DeltaV systems that are connected to the same level 3 network and/or AMS Suite and/or non-DeltaV workstations and servers on the level 2.5 and level 3 networks. It is recommended that Backup agents only be installed on Emerson and non-Emerson PCs involved in the operation of the DeltaV system or AMS Suite.

If I am using the management server on a DeltaV Application Station and backing up data from DeltaV workstations, can I use the DeltaV area control network to transfer my backup data?

It is recommended you use a separate "backup network" created by configuring the third network interface card (NIC) in the DeltaV workstations and servers. If it is not possible to create a separate backup network and you only have a few DeltaV workstations to backup and you use a redundant DeltaV area control network, the DeltaV area control network may be used. In this case, you may consider adjusting your backup plans to limit the amount of network bandwidth consumed by the backup data transfer.

Is Backup and Recovery a software only solution?

Yes. Backup and Recovery is sold as a software only solution. Backup and Recovery is used to backup data on PC hardware and store this data to PC or network storage hardware, but there is no specific hardware sold with Backup and Recovery.

What hardware components are required?

The Backup and Recovery software components must be installed and run on PCs running the Microsoft Windows Operating System. The Storage Node may also be installed on other network addressable storage devices.

What hardware is supported?

The Backup and Recovery agents are supported for use on any Dell desktop, workstation or server class PC approved for use as a DeltaV workstation or host for the AMS Suite.

Where can I store my backup data?

Backup data is stored in vaults. There are three types of vaults available: managed, unmanaged, and personal. A managed vault is maintained by a Storage Node and may be created on a network share, storage area network (SAN), network addressable storage (NAS), tape device, or on a hard disk drive local to the management server or storage node. An unmanaged vault is maintained by a backup agent and may be created on a network share, SAN, NAS, FTP and SFTP servers, or on a hard disk drive local to the management server. A personal vault is specific for each backup agent and may be created on network share, FTP server, removable media, tape device, or on a hard disk drive local to the backup agent PC.

Can I back up more than one DeltaV system?

Yes. Backup and Recovery can back up data from multiple DeltaV systems. Consider the level 2.5 and level 3 network architecture options when backing up more than one DeltaV system.

Does the Backup and Recovery software work through a network firewall?

Yes. Backup and Recovery uses TCP port 9876 for local installation and for communication between components. The setup program automatically opens this port through Windows Firewall. If you use a different firewall, make sure that the port is open for both incoming and outgoing requests through that firewall. Backup and Recovery also uses TCP ports 445 and 25001 for remote installation. Make sure that these ports are added to exceptions in the firewall settings on the remote machines. TCP port 445 is added to exceptions automatically by Windows Firewall when you enable File and Printer Sharing. After installation, you can change the ports at any time to match your site security policy. Changing the default port number requires the restart of the Acronis Remote Agent service.

Can I use Backup and Recovery to back up a virtual machine?

Yes. You will install the backup agent on the virtual machine and register it on the management server. The virtual machine will be treated as a physical machine. The virtual machine will appear in the management console along with the other physical or virtual machines in your backup system. The backup agent in the virtual machine will require a license for the backup agent just like a physical machine.

Installation

Where do I install each Backup and Recovery component?

The Backup and Recovery components may be installed on a single PC or multiple PCs, as required by your specific needs and network architecture. A backup agent must be installed on every PC that requires back up. The management server, license server, and storage vault(s) should be installed on one or more conveniently located PCs. The management console can be installed on the management server PC but you can install a management console on any PC that requires access to a backup agent.

How do I install the Backup and Recovery components?

The install files for Backup and Recovery are included on the Backup and Recovery DVD. You can install the management server and the components for remote installation on one PC and then deploy the Backup and Recovery components to the other PCs in your backup network from the management server.

Do I need to install the Backup and Recovery components in a particular order?

Yes. Installing Backup and Recovery is a multiple-stage process. To successfully install Backup and Recovery, you must do the following in the order listed:

- Install the Backup License Utility from the DVD and generate your site license code
- Send your site license code to Emerson to receive your encrypted license file
- Use the Backup License Utility to decrypt the license file and create a text file that includes the license keys
- Run the setup program for Backup and Recovery, including any licensed options, such as Universal Restore or Deduplication
- Install the Emerson Backup Plan Templates on the management server and managed machines

After installing Backup and Recovery you can configure the application. You can also import the Emerson Backup Plan Templates, as required. More details on the installation process can be found in the "Introduction to Backup and Recovery" document located on the Backup and Recovery DVD.

Can the management server be installed on a DeltaV Application Station?

Yes. The management server and other Backup and Recovery data management components may be installed on a DeltaV Application Station. It is recommended that if the DeltaV Application Station is used as the management server, no other DeltaV applications be used on the Application Station.

Can the management server be installed on a non-Emerson PC?

Yes. The management server and other Backup and Recovery data management components may be installed on a non-Emerson PC. It is recommended the management server and other Backup and Recovery data management components be installed on a Dell R710 or other DeltaV system approved Dell server.

Which operating systems can be used to install the management server?

The management server may be installed on a PC running Windows XP SP3, Windows 7 (32-bit), Windows Server 2003 SP2 or Window Server 2008 SP2. For performance reasons, you may consider using a server class PC if you have more than a few PCs that require backup.

Licensing

How is Backup and Recovery licensed?

Backup and Recovery is licensed by the number of PCs you want to back up and the operating system in use by the PCs being backed up. In other words, each backup agent requires a license. In addition, the optional Deduplication and Universal Restore features are licensed per agent. The other Backup and Recovery components do not require a license.

What Backup and Recovery licenses are available?

The Backup and Recovery v2.3 includes the licenses as shown below. For specific model numbers, refer to the Backup and Recovery Product Data Sheet available on the Emerson Process Management web site.

- Backup and Recovery Workstation
- Backup and Recovery Workstation with Universal Restore
- Backup and Recovery Workstation with Universal Restore and Deduplication
- Backup and Recovery Server
- Backup and Recovery Server with Universal Restore
- Backup and Recovery Server with Universal Restore and Deduplication
- Backup and Recovery Server with Deduplication Evaluation
- Backup and Recovery Media Pack
- Backup and Recovery Workstation – Version Upgrade
- Backup and Recovery Workstation with Universal Restore – Version Upgrade
- Backup and Recovery Workstation with Universal Restore and Deduplication – Version Upgrade
- Backup and Recovery Server – Version Upgrade
- Backup and Recovery Server with Universal Restore – Version Upgrade
- Backup and Recovery Server with Universal Restore and Deduplication – Version Upgrade

How do I determine how many licenses I need?

To properly license and install Backup and Recovery, you need to determine the number of workstations and server class PCs you want to back up and of these PCs, determine which workstations and servers require Deduplication and/or Universal Restore. You also need to determine how many copies of the media pack (i.e. the software installation DVD) you require. At least one copy of the media pack is needed to install the Backup and Recovery software, but multiple copies can be purchased, as needed. For example, you have three servers and five workstations that require backup and for the three servers you want the flexibility to restore backup images to a different server, if necessary. Thus, you will need to purchase three Backup and Recovery Server with Universal Restore licenses and five Backup and Recovery Workstation licenses. You also determine you only need one copy of the media pack so you will purchase one media pack along with the licenses.

What is the Backup and Recovery evaluation license?

The Backup and Recovery evaluation license provides a fully functional, 30-day time limited version of Backup and Recovery Server with Deduplication and can be used to evaluate the Backup and Recovery software on a PC running any of the supported Windows operating systems. To upgrade to the full version of Backup and Recovery, simply purchase the appropriate licenses and apply the new licenses to the license server. Up to three evaluation licenses may be purchased per site.

What is the difference between the workstation and server licenses?

The workstation licenses are used when the backup agent is installed on Windows workstation/client operating systems, such as Windows XP and Windows 7. The server licenses are used when the backup agent is installed on Windows server operating systems, such as Windows Server 2003 and Windows Server 2008.

What is Universal Restore?

Universal Restore allows you to recover all your data and applications onto a brand new workstation or server to a different model or the same model with different components installed. Universal Restore captures all your system parameters, so there's no need to reconfigure anything. Simply insert the required device drivers during the recovery process.

What is Deduplication?

Deduplication allows you to store the same data only one time, regardless of how often the data appears across your workstations and servers. Deduplication may be applied at the workstation or server being backed up; it may be applied at the storage node, or both. Apply Deduplication at the PC being backed up to avoid unnecessary network traffic; apply Deduplication at the storage node to increase the speed of the backup task.

What are the version upgrade licenses?

The version upgrade licenses are used to upgrade from a previous version of Backup and Recovery to the latest version. To upgrade Backup and Recovery to the latest version, you will need to purchase the appropriate upgrade licenses.

To upgrade to the latest version of Backup and Recovery, what licenses do I need?

To upgrade to the latest version of Backup and Recovery, you need a version upgrade license for each PC that you want to upgrade and each PC that will be upgraded must also be licensed with its existing version license. By example, if you want to upgrade a PC from Backup and Recovery v1.2 to Backup and Recovery v2.3, you will need a Backup and Recovery v2.3 upgrade license and the PC must have a license for Backup and Recovery v1.2.

Do I need to purchase the Backup and Recovery version upgrade licenses?

Yes. The Backup and Recovery version upgrade licenses must be purchased from Emerson for each PC that you want to upgrade. There is a tiered version upgrade license price structure. Backup and Recovery customers that are current on their DeltaV Foundation Support or Guardian Support contracts will pay a reduced price for their version upgrade licenses. Backup and Recovery customers that are not current on their DeltaV Foundation Support or Guardian Support contracts will pay the full price for their version upgrade licenses.

With my DeltaV Foundation Support contract I typically get DeltaV system software version upgrades at no additional cost. Why do I need to purchase the Backup and Recovery version upgrade licenses?

Backup and Recovery is based on the Acronis Backup & Recovery Advanced (ABR) software. Emerson's commercial agreement with Acronis for use of the ABR software includes a version upgrade license cost to align with the Acronis version upgrade license policy. Emerson has created a tiered version upgrade license price structure to give the Backup and Recovery customers that are current on their DeltaV Foundation Support or Guardian Support contracts a price break on the purchase of their version upgrade licenses.

I want to use Universal Restore and Deduplication on selected workstations. Can I license these optional features only on certain workstations?

Yes. In your backup system, you can have a some workstations and servers with the only the base license, some with the base license plus Universal Restore, and some with the base license plus Universal Restore and Deduplication. The License Server will accept a combination of agents with and without these optional features. Note the Backup and Recovery licenses are sold in the bundles as shown in the table above. The Universal Restore and Deduplication options must be purchased with the base license. You cannot purchase these optional features later and add them to the base license. If you think you might need Universal Restore and/or Deduplication at some point in the future, you should purchase these optional features with the base license. If you purchase the Backup and Recovery Server base license now and want to add Universal Restore later, you will need to purchase a new license for Backup and Recovery Server with Universal Restore.

How do I order the Backup and Recovery licenses?

The Backup and Recovery ordering process occurs in two steps. The first step is to place an order for the Backup and Recovery licenses and media pack. The second step is to provide information to Emerson for creation of your license keys.

For the first step, order the media pack and licenses for the number of workstations and servers that require backup. You will receive the Backup and Recovery media pack and a license certificate for each workstation and server license ordered. The media pack includes the installation DVD and is required for installation of the Backup and Recovery software. For each Backup and Recovery order, it is expected that at least one copy of the media pack is ordered along with the licenses for the workstations and servers that require backup.

For the second step, using the DVD, install the Backup License Utility on the PC where you want to manage your Backup and Recovery licenses. Run the Backup License Utility to generate a license order code that is unique to the license server PC. Email the following information to Emerson at emailregistrationsystems@emerson.com to receive your license keys:

- The license order code
- The Emerson sales order number
- The DeltaV system ID
- The serial number of each license ordered as found on the license certificate

Within the next business day, you will receive by return email an encrypted license file containing your Backup and Recovery license keys. Detailed instructions on the Backup and Recovery software installation and licensing process are provided in the installation guide included on the Backup and Recovery DVD.

Once I have my Backup and Recovery licenses, how do I apply the licenses?

Once you have received the encrypted license file from Emerson that includes your license keys, copy the license file to the license server PC and launch the Backup License Utility. From the Backup License Utility, browse to the license file and select Export Licenses which will decrypt the license file and create a text file with your the license keys. During the installation process, you will use this text file to apply the licenses to the license server. More details on the licensing process can be found in the installation guide included on the Backup and Recovery DVD.

I want to back up my DeltaV system. How do I license Backup and Recovery for a single DeltaV system?

As an example, assume in your DeltaV system you want to back up the Professional Plus station and two Application Stations. You want a single license server due to the system size and you want the license server to reside on an Application Station. Purchase the Backup and Recovery media pack and three Backup and Recovery licenses, one for each DeltaV workstation, using the appropriate Backup and Recover edition and operating system in use by each DeltaV workstation. Install the Backup License Utility on the Application Station and run the Backup License Utility to obtain the license order code. Email the license order code, the Emerson sales order number, the DeltaV system ID, and the three license serial numbers to Emerson to receive an encrypted license file containing three Backup and Recovery license keys.

I want to back up multiple DeltaV systems. How do I license Backup and Recovery for multiple DeltaV systems?

As an example, assume you have two DeltaV systems and you want to back up the Professional Plus station, three Operator Stations, and one Application Station on each system and one central AMS Suite server. You want a single license server for both DeltaV systems to enable centralized license management and you want the license server to reside on a non-DeltaV workstation at level 2.5. Purchase the Backup and Recovery media pack and 11 Backup and Recovery licenses, one for each DeltaV workstation in each system and one for the AMS Suite server, using the appropriate Backup and Recover edition and operating system in use by each DeltaV workstation and AMS Server. Install the Backup License Utility on the non-DeltaV workstation and run the Backup License Utility to obtain the license order code. Email the license order code, the Emerson sales order number, the DeltaV system ID of whichever system you wish to associate Backup and Recovery technical support, and the 11 license serial numbers to Emerson to receive an encrypted license file containing 11 Backup and Recovery license keys.

I have Backup and Recovery licensed on a PC that has failed. Can I reuse the same license on a replacement PC?

Yes. You can revoke a Backup and Recovery license that is in use. Revoking makes used licenses available again. You may need to revoke a license in the following cases:

- A PC failure.
- A component that requires a license (such as a backup agent) is uninstalled from the PC.
- A PC is taken out of service permanently.

You may revoke the license from the PC either before or after removing the PC from the system.

When is it appropriate to use Emerson's Backup and Recovery product versus Acronis Backup & Recovery?

Emerson's Backup and Recovery product is intended for use to back up DeltaV system and AMS Suite workstations and servers and related control system and asset monitoring data. Acronis Backup & Recovery is intended for use on IT or non-control system related workstations and servers. Also note Emerson's Backup and Recovery is sold and supported by Emerson and Acronis Backup & Recovery is sold and supported by Acronis.

I am currently using another third party backup product to back up my DeltaV system workstations. Can I continue to use this third party product to back up my DeltaV system?

Yes. If you are satisfied with your current backup solution, there is no reason to change it. You will continue to purchase products, services and support from your third party supplier. However, if you would like a complete data backup and recovery solution that is supported by Emerson, you will need to purchase Backup and Recovery.

The initial release of Backup and Recovery included an advanced version and a standalone edition but the latest version does not. Why is this?

The latest version of Backup and Recovery is based on Acronis Backup & Recovery Advanced Server and Advanced Workstation but is simply called Backup and Recovery Server and Workstation, respectively. The advanced edition has proven to be significantly more popular than the standalone edition and thus Emerson decided to simplify the Backup and Recovery product options and only offer the advanced edition.

Upgrades

I have a previous version of Emerson's Backup and Recovery. Can I upgrade to the latest version?

Yes. You can upgrade from a previous version of Emerson's Backup and Recovery solution to the latest version by purchasing the appropriate version upgrade licenses. The version upgrade license must match the previous version license if you want to retain the functionality of the latest version. For example, if you have Backup and Recovery v1.2 Advanced Server with Universal Restore and you want to upgrade to the latest version and keep the Universal Restore option, you will purchase Backup and Recovery Server with Universal Restore – Upgrade Version.

Do I have to uninstall my existing version of Backup and Recovery before upgrading to the latest version?

No. You can upgrade an existing version of Backup and Recovery by installing the latest version "on top" of the existing version. Details on upgrading Backup and Recovery can be found in the documentation found on the Backup and Recovery DVD.

What do I need in order to upgrade my existing version of Backup and Recovery to the latest version?

You will need to purchase the appropriate version upgrade licenses and media pack, send your site license code to Emerson, take delivery of your version upgrade license file, license and install the latest version.

I have a previous version of Emerson's Backup and Recovery Advanced Server and I want to upgrade to include Universal Restore. Can I do this?

No. You can upgrade from a previous version of Emerson's Backup and Recovery solution to the latest version and keep the same functionality, but you cannot add functionality with the upgrade.

I have a previous version of Emerson's Backup and Recovery Advanced Server with Universal Restore and Deduplication, but I am not using the Deduplication feature. Can I upgrade to the latest version and not purchase the Deduplication option?

Yes. You can upgrade from a previous version of Emerson's Backup and Recovery solution to the latest version and remove the Universal Restore and/or Deduplication options, as needed. If you do not want a particular option after the upgrade, do not purchase it with the upgrade license. For example, if you have Backup and Recovery v1.2 Advanced Server with Universal Restore and Deduplication, and you no longer need the Deduplication option, you will need to purchase Backup and Recovery v2.3 Server with Universal Restore – Upgrade Version.

Can I add more PCs to my backup network after an upgrade?

Yes. After you have upgraded your existing version to the latest version, you can add more PCs to your backup network by purchasing the appropriate number of new version licenses for the number of PCs that you want to back up.

Can I use different versions of Backup and Recovery in my backup network?

No. You will need to keep all PCs in your backup network at the same version of Backup and Recovery.

I am using the Backup and Recovery standalone edition. Can I upgrade to the latest version of Backup and Recovery?

Yes. The latest version of Backup and Recovery does not include a standalone edition but you can upgrade to the latest version by purchasing the appropriate Backup and Recovery Server and Workstation upgrade licenses for the PCs you have running Backup and Recovery Standalone Server and Standalone Workstation, respectively. For example, if you have Backup and Recovery v1.2 Standalone Server with Universal Restore and you want to upgrade to Backup and Recovery v2.3, you will need to purchase Backup and Recovery Server with Universal Restore.

Data Backup

How do I back up my data?

Backup and Recovery uses backup plans to provide the definition of what data is backed up. The backup plan defines what data is backed up, when it backed up, and where the backup data is stored. Backup plans may be created to backup any data related to your DeltaV system or AMS Suite. In addition, Emerson provides several backup plan templates for use in backing up your DeltaV system and AMS Suite. The backup plan templates provide everything you need to back up your DeltaV system data and workstations and AMS Suite data. The backup plan templates may also be modified to add your specific files, folders or databases that require backup.

What backup plan templates are provided?

There are four sets of backup plan templates provided for use with Backup and Recovery; centralized backup plans and local backup plans for use with the C: disk volume and centralized backup plans and local backup plans for use with the D: disk volume. A centralized backup plan is configured, modified, and saved in the management server, from which it can then be deployed to managed machines. A centralized backup plan template must be imported into the management server. A local backup plan is configured, modified, and saved locally through the management console for a managed machine, and cannot be deployed to other managed machines. The C: disk volume backup templates store the temporary backup data to a location on the C: volume; the D: disk volume backup templates store the temporary backup data to a location on the D: volume. The centralized and local backup plan templates provided are shown at the end of this section.

Can I edit the Emerson backup plan templates?

Yes. Once you import the backup plan templates into the management server you may add, delete, or modify any of the backup plan template configurations. Note each backup plan template does not have a storage location configured, so as a minimum you will want to configure the backup data storage location in each backup plan template.

Can I create my own backup plan templates?

Yes. You can create your own backup plans using the management server and then export these plans for import into other Backup and Recovery installations.

Can I schedule my backup plan to run as needed?

Yes. Backup and Recovery provides a full featured backup plan scheduler that allows you to schedule the execution of the backup plans as needed.

Can I create an image backup of my entire PC?

Yes. With Backup and Recovery you can create an image backup of your workstations and servers.

Can I back up individual files and folders?

Yes. Backup and Recovery allows you to back up individual files and folders.

Can I back up a running DeltaV system?

Yes. Backup and Recovery can be scheduled to run at any time, even during system use. DeltaV system or AMS Suite applications or databases do not need to be shut down or inactive during the execution of a backup task. Note, however, any data changes made during the execution of a backup task may not be captured if the changed data was saved after the backup task completed.

How are the DeltaV databases backed up?

Backup plan templates are provided for the DeltaV configuration database, Batch Historian, Continuous Historian (DeltaV Continuous Historian and legacy (PI) historian), and Event Chronicle. In these backup plan templates, each DeltaV database is first backed up to a temporary location using the specific database's internal backup mechanism and then the backup data is copied from the temporary location to the storage location configured in the backup plan. The temporary backup files are located on either the C: or D: disk volume and the location is determined by the backup plan templates used, either the C: disk volume templates or the D: disk volume templates.

How often should I create backups?

This depends on your specific requirements. The backup plans may be scheduled to run at any frequency. Backup and Recovery provides the capability to use popular backup schemes, such as Grandfather-Father-Son and Tower of Hanoi, as well as to create custom backup schemes. All backup schemes are based on full, incremental and differential backup methods.

What are the data storage requirements for my system?

Your specific data storage requirements depend on several factors, such as how often you back up your data, what type of data are backed up, the level of compression applied, use of Deduplication, etc. In general, a full block-level backup with normal compression requires about 50% of the space required by the data on the disk. For example, a backup data archive of one hard disk drive with 2 partitions, one partition of 100GB with 5GB used and a second partition of 200GB with 15GB used, would be about 10GB (50% of 20GB). Note with incremental/differential backups the general rule is not as straightforward, the backup data archive size depends on the data changes, which depends on system usage.

Can my backup data be compressed?

Yes. You can configure each backup plan to provide the desired level of compression on the data being backed up. The backup plan configuration provides four levels of compression: None, Normal, High, and Maximum. A higher level of compression means the backup file will be smaller, but also means the backup plan will take longer to complete. The default compression setting is Normal.

How does data compression affect the size of my backup data?

The backup plan configuration provides four levels of compression: None, Normal, High, and Maximum. The optimal data compression level depends on the type of data being backed up. For example, even maximum compression will not significantly reduce the archive size if the archive contains essentially compressed files, such as .jpg, .pdf or .mp3. However, formats such as .doc or .xls will be compressed well.

How can I secure my backup data files?

You can configure archive protection in each backup plan to provide the desired level of security on the data being backed up. If you enable archive protection, you can set a password for the archive and also select the desired level of encryption on the archive. The archive protection feature provides four levels of encryption: Do not encrypt, AES 128, AES 192, or AES 256. The default archive protection setting is Disabled.

Backup Plan Template	Backup Data / Description
Centralized_InitializeBackup	Sets up directory structure required to use centralized backup plan templates on managed machines
CentralizedBackupAdvancedControl LocalBackupAdvancedControl	SQL database for DeltaV Simulate Suite and Tune with InSight
CentralizedBackupAms LocalBackupAms	AMS Device Manager database
CentralizedBackupBatchHistorian LocalBackupBatchHistorian	Batch Historian database
CentralizedBackupContinuousHistorianDeltaV LocalBackupContinuousHistorianDeltaV	DeltaV Continuous Historian database
CentralizedBackupContinuousHistorianLegacy LocalBackupContinuousHistorianLegacy	Legacy Historian database
CentralizedBackupDvDataNonDatabase LocalBackupDvDataNonDatabase	Designed to back up data in the following folders: <ul style="list-style-type: none"> • DvData\Batch\Journals • DvData\Charts • DvData\Graphics-iFix • DvData\Import-Export • DvData\PowerUp • DvData\YellowPages
CentralizedBackupEventChronicle LocalBackupEventChronicle	Event Chronicle database
Centralized_ImageBackupAllDisks	Designed to back up all disks on managed machines
Local_ImageBackupDisk1	Designed to make a sector-based image back up of a specific disk
CentralizedBackupMachineryHealth LocalBackupMachineryHealth	AMS Machinery Manager databases
Centralized_NodeBackup	Designed to back up specified DeltaV databases on managed machines
Local_NodeBackup	Designed to back up specified DeltaV databases
CentralizedBackupObjectivity LocalBackupObjectivity	DeltaV Objectivity database files
CentralizedBackupObjectivityExportFhx LocalBackupObjectivityExportFhx	Exported FHX files
CentralizedBackupOpcMirror LocalBackupOpcMirror	OPC Mirror configuration database
CentralizedBackupVCAT LocalBackupVCAT	Version Control and Audit Trail (VCAT) database

Data Recovery

How do I recover my data?

In the management console, you create a recovery task that defines what data is to be recovered, the storage location where the data is to be recovered from, the directory location where the data is to be recovered to, and the time when the data recovery is to occur.

Can I create my own recovery plan templates?

Yes. You can create your own recovery plan templates, export these templates from one backup system and import them into other backup system.

Are instructions provided to help me recover my data?

Yes. User documentation is provided on the Backup and Recovery DVD to help guide you during your data recovery process. The Emerson document *Introduction to Backup and Recovery* provides information on how to recover your data and supplements the detailed data recovery information found in DeltaV Books Online. In addition, Acronis documentation is provided to give you more information on how to create recovery plans.

What is bare metal restore?

Bare metal restore is the ability to restore a backup image to a PC that has no operating system or other software already installed. You will need to use some form of bootable media (e.g. CD, DVD, USB flash drive) or network boot from the Acronis PXE Server to restore a PC from bare metal.

Can I restore a backup image from one PC to another PC?

Yes. You can use the Backup and Recover software to take a backup image of a PC and restore this image to the exact same or the same model PC. If you have purchased the Universal Restore option, you can restore the backup image to a dissimilar PC that is licensed under the same operating system licensing model. For more details on the DeltaV PC operating system license types and affected PCs, refer the Emerson white paper "DeltaV Workstation Operating System Licensing".

Does Emerson have recommended practices for data recovery?

Yes. When recovering data, consider the following recommended practices:

- Instructions for recovering DeltaV system and AMS Suite data are included in the Introduction to Backup and Recovery user documentation provided on the Backup and Recovery DVD and in DeltaV Books Online and AMS Books Online. Consult these documents for procedures and advisories regarding data recovery.
- Instructions for recovering data created by third-party software (such as Microsoft Excel, for example) are not covered in the Emerson documentation. Consult the user documentation from the third-party software supplier and Acronis for procedures and advisories regarding data recovery.
- Before initiating a data recovery procedure, disable any scheduled or automated backup task operating in associated system areas. Neglecting to suspend a related backup task could invalidate the integrity of recovered data, backed up data, or both.
- Some DeltaV workstations automatically start a Windows service named DeltaV. Before recovering any DeltaV system data, with the exception of the DeltaV configuration database, manually stop the DeltaV service and temporarily change its startup type to Manual or Disabled on any DeltaV workstation included in the data recovery operation. Stopping the DeltaV service disables all other services related to DeltaV. After completion of the data recovery operation, reset the startup type for the DeltaV service to Automatic, and then restart the workstation. Verify that all data was recovered successfully, and then delete any temporary files or folders created during recovery procedures.

- Recover DeltaV system data to a temporary folder to allow verification of the recovered data prior to bringing it back online.
- On the DeltaV workstation where data is to be recovered, create a temporary folder on the drive with the most free space (D:\temp, for example). When creating the recovery task in the management console of Backup and Recovery, specify this temporary folder as the destination for the archive to be recovered. After verifying the recovered data and copying it from the temporary folder to its appropriate location within the DeltaV file structure, you can delete the temporary folder.

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