

BRMS – Stress Relief

By Garth Tucker

What is more stressful in a disaster recovery than not knowing where your tapes are, if the backups were successful, or how to go about getting the data off the tapes and back on a system? Maybe being shot at by large guns is more stressful, and that is likely the next step the business will take against you if they can't get to their email soon. But to paraphrase my good friend Gary, "The good news is: BRMS will fix this."

How Will BRMS Help Relieve Stress?

By simplifying your save/restore strategy, thus reducing the amount of time you will spend worrying about whether or not you're saving what you need and whether or not it's restorable.

Having taken part in disaster recoveries both real and test, I can attest to the fact that most people panic when faced with a system outage and no plan for recovery. Yes, I have seen senior administrators who bore a striking resemblance to a camel caught in headlights when a system rolled over and played dead. Even in a test scenario, many people are unsure of what they should be doing. These same people calm down significantly when the BRMS recovery report is put in front of them with its listing of volumes required and detailed steps to follow. Before becoming a computer nerd, I made my living sailing boats back and forth to the Caribbean and through the Great Lakes. While at sea, we encountered the occasional storm and the guys who panicked were "paid off" at the next port by the Captain and given a ticket home. The same holds true for disaster recovery in IT, don't be the person who gets booted after the storm.

Staying calm and doing your job is much easier with a detailed plan to follow. Imagine a junior operator or non-technical person trying to reload an i5 with 5TB of data without a plan to follow (this is a real possibility in a true disaster), now imagine that person with the BRMS recovery report to follow. Much easier to imagine isn't it.

Debbie Saugen from IBM in Rochester is the most knowledgeable BRMS person I know and she has published many articles and presentations on setting up your BRMS implementation. The next few paragraphs outline some of her insights and documentation on the BRMS product.

Media Management

The BRMS database keeps track of all your tapes and what objects have been saved on each tape. By default, BRMS tracks items at the library level, but you can request object-level-detail and/or member-level-detail. When each tape is written, the move policy associated with the tape tracks the tape as it moves among the locations you have specified.

The BRMS database provides:

- A listing that ensures enough tapes are available for the next evening's backups



Garth Tucker (before becoming a nerd)

- A list of all tapes at a given location, which can be used to check that the tapes are where they should be
- An error threshold listing, showing tapes that should be taken out of circulation because of errors or age.

Backup Management

BRMS uses Control Groups that replace the CL programs or scheduled jobs from the GO SAVE menu that you currently use. A control groups consists of a list of the items to backup as well as other parameters related to the type of save, i.e. restricted state or save while active and if you choose, CL commands *EXIT function.

Since BRMS backups use the same format, anyone with BRMS experience can easily comprehend your backup, which makes staff turn-over more easily integrated and more importantly, in a DR where your own staff may not be available to restore your system. If you have a requirement to save spoolfiles, BRMS offers this functionality through simple lists based on their OUTQ, job name, file name, user name, and/or userdata parameters and allows them to be backed up so that attributes such as overlays, graphics, images, special fonts, etc. are retained. Compare this to the OS/400 method of backing up spoolfiles where the files are copied to database files prior to saving, and the attributes aren't retained. It's clear which method is more useful and reliable.

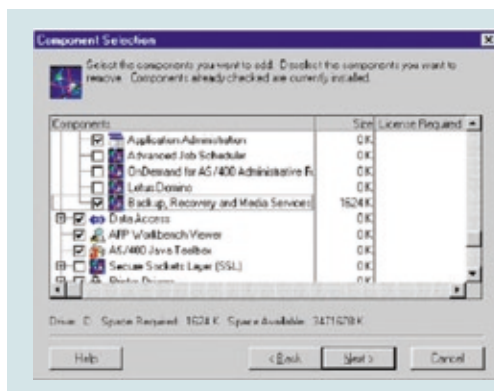


Figure 1. BRMS manages your save/restore environment by controlling your media, backups and recoveries. This is accomplished through an easy to use menu interface, from OS/400 commands or through a plug-in to iSeries Navigator for those of us with a preference for GUI management.

Recovery Management

When BRMS saves are complete, a recovery report is generated that provides instructions for rebuilding your system or restoring individual objects. The recovery report provides a plan and volume identification as well as object names to help even someone with little to no experience recover your system. It is very important that you print this recovery report every day and send it with the tapes from the save — as recovering without it, while not impossible, is more difficult — and the point of this exercise is to reduce our stress.

Failing to print the report with each backup is the most common mistake I see people making when using BRMS. This is because they don't understand that the report is not generic, and the objects that are saved in QUSRBRM at the end of the save and restored early in the recovery are not always in the same place. The tape and location of these objects changes every time you perform a save, and these are what provide the list of recovery objects in the STRCYBRM screens.



Figure 2. Tape drives are part of your BRMS inventory.

shrinking backup windows, it is a great idea to look at the BRMS save-while-active function for your daily saves to allow your system to function with little to no interruption to processing. The frequency of changes to your system will determine how often you must perform a full system save. The system must be restricted to do a *SAVSYS, but with BRMS you could create a *SAVSYS that does not save user data, restart the system and then perform a save-while-active for *ALLUSR, DLO and IFS.

How – The media class you select will be based on your tape technology or technologies. When you install BRMS or run the INZBRM *DEVICE command, your tape drives will be added to the BRMS inventory and you will then add media that corresponds to the drive. By using the WRKDEVBRM command we can view all of the media devices that BRMS has found and configured.

The next step is to enroll and initialize media by using one of the following approaches:

- Work with Media (WRKMEDBRM) command and select option 1 (Add)
- Add Media to BRM (ADDMEDBRM) command
- Add Media Library Media to BRM (ADDMLMBRM) command to add volumes to a media library (MLB) such as the 3494 Automated Tape Library Data Server. Media can be enrolled into the BRMS/400 media inventory at any time. The only requirement is that the media must be known to BRMS/400 prior to any save or restore operation.

You need to decide whether you want to initialize the media during enrollment. This is done using the initialize tape parameter on both commands. Media classes define the types of physical media that are used for backup, archive, or recovery operations. Within each type of physical media, there may be a further distinction by format or capacity. At the time of installation, BRMS creates media classes to match the tape devices that you have installed on your system.

A successful implementation of BRMS is dependent upon the media policy. The media policy ties together the required information to implement BRMS. It

The BRMS recovery report is not a replacement for a full scale DR Plan, but should certainly be a major piece of your strategy.

Getting Started

Over the last several years, I have set up many BRMS implementations for clients, and as a rule I ask some simple questions:

- What
- How
- How Long
- Where

Once you have these answers, follow the IBM instructions, as per the following:

What – This refers to the data that will be backed up in each control group. You must decide what data you need to save each day, week, month, quarter and year. With

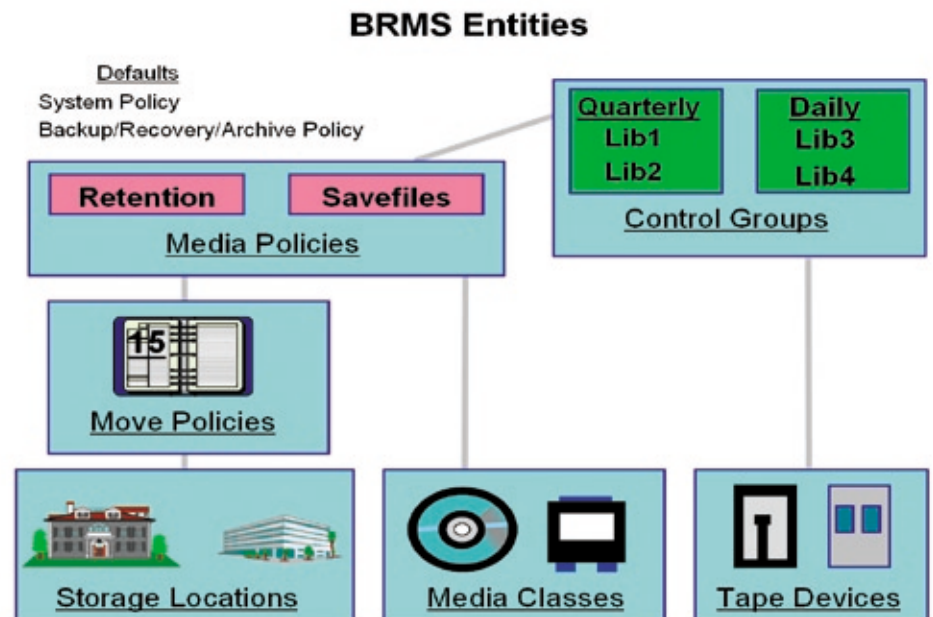


Figure 3. When setting up BRMS, you can create your own objects or use the defaults.

combines the media management characteristics and defines the retention of the data that is being saved. When saving through BRMS, you have to specify a media policy. The media policy directly defines the type and length of retention for data saved on media. It also references the media class and move policy to be used for the save.

How Long – The retention period of data is the next piece of information that must be factored in when designing your BRMS implementation. This period will generally vary based on the type of save being performed. Nightly backups may need to be retained for one week, where monthly backups may need to be retained for one or more years. The retention information is specified in the media policy.

Where – The next decision is what to do with the media that now contains the latest backup. Typically, media is moved into a fireproof safe, another location or to a combination of these. The journey that media makes after it has been used — and until it expires and then returns to the home location — is defined in the move policy. When multiple locations are used to store media for one or more systems, BRMS tracks the location of the media. You can identify when the media is moved, and reports can be produced providing a complete inventory of media held at a particular location. This is especially useful when recovering from a system failure. The BRMS move policy is used to define the movement of media between storage locations and the length of time that the media stays in each location.

Use the WRKLOCBRM command to display the storage locations that are defined in BRMS. This command can also be used to add, change or remove storage locations. In addition, you can work with media or containers that are in the storage locations by selecting additional parameters when using the change option for a specific storage location.

Let's Review:

- Media management tracks your tapes and the data contained.
- Backup management automates, schedules, and runs your backups – reducing the chance of human error.
- Recovery management simplifies the restore of data from tapes and allows for less confusion during an emergency.

Volumes can be written about how to properly prepare for a disaster recovery and each solution has many options, but at the end of the day it's a choice between costs versus reliability. BRMS has a slightly higher price tag compared to the included native OS/400 menus and commands. However, when you factor in the ease, reliability, and stress relief of knowing that your data actually gets to the tapes, where it is, and that it can be recovered — money should not be a deciding factor. Also, many of the larger i5 servers come with BRMS included in the price, so if you already have it for free, there's no reason not to implement it. Get your IBM Business Partner sales representative on the phone and have them price BRMS for you and then spend some time learning the product. You'll be glad you did.



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