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SPK and Associates
900 E Hamilton Ave, Ste.100
Campbell, CA 95008

How to Restore files using Bacula

Bradley Tinder, Systems Integrator, SPK and Associates

Setup

There are some prerequisites before running a restore job in Bacula. First, you need to have a Restore job definition in your bacula-dir.conf file. This doesn't have to have any vital information in the job definition, think of it as a placeholder for your restore job. In other words, you can modify the parameters of the restore job once you begin the restore process, so don't be caught up on this job definition. Below is a sample job definition that I use at one of our clients.

```
Job {
  Name = "RestoreFiles"
  Type = Restore
  Client=backup-fd
  FileSet="FilesystemAll"
  Storage = Neo2000
  Pool = Default
  Messages = Standard
  Where = /mnt/restore
}
```

Some notes about this job definition:
1. The client needs to match your file director name.
2. The Where parameter can be anywhere. You will have the option to change this.
3. The Pool parameter is not critical. This will be changed once you start the restore job.

The other prerequisite for running a restore job in Bacula is that you need to shut off your normal backup jobs while this job is running. This is somewhat dependant on how you do your backups, but I've found that it's easiest to shut them off so nothing gets overwritten or backed up again by mistake. If you are doing backups to disk on a separate volume, then that should be okay to continue doing nightly backups (you ARE doing nightly backups, right?) while the restore job is running. If anything, make sure the job that you are restoring to is not running or will not run while you do the restore. One thing to keep in mind is how much data you are restoring and what medium you are restoring from (tape vs. disk). If restoring from tape, it might take quite some time, so you don't want jobs overlapping and causing you headaches.

The actual restore process is quite simple, although it can be a bit intimidating at first glance. There are 3 steps to running a restore job, and I'll walk you through them here.

Step 1: Launch the restore job within the Bacula console

This is as simple as typing **restore** in the Bacula console. Once you type that in, you are presented with the following menu:

```
To select the JobIds, you have the following choices:
     1: List last 20 Jobs run
     2: List Jobs where a given File is saved
     3: Enter list of comma separated JobIds to select
     4: Enter SQL list command
     5: Select the most recent backup for a client
     6: Select backup for a client before a specified time
     7: Enter a list of files to restore
     8: Enter a list of files to restore before a specified time
     9: Find the JobIds of the most recent backup for a client
    10: Find the JobIds for a backup for a client before a specified time
    11: Enter a list of directories to restore for found JobIds
    12: Select full restore to a specified Job date
    13: Cancel
```

Most of the options listed here are pretty self explanatory, but there are a few I should clarify and go over the options that I typically use when doing a restore.

If you know exactly what job it is that you want to restore from, option #3 is the one for you. Just enter the JobID and you can move on to the next step. Option #12 is an easy one as well, that will do a full restore to a specified job date. Options #7 and #8 are great if you have some specific files or directories you need to restore and you can easily enter the full path to them and restore them.

The one option I typically use is option #6, and I'll go a bit more in detail with this option. This option will prompt for a date and time, you enter them and it will restore the files you select to the most recent backup before the entered date.

For example, a user asks me to restore directory /tmp/userdir1 as it was on November 30th, 2011. So, I select option #6 and I'm presented with the following prompt:

Enter date as YYYY-MM-DD HH:MM:SS :

I would enter 2011-12-01 00:00:00. That way I would select the backup that was done on the 1st to restore to. Note that this very dependent on WHEN you do your backups. For the above example, assume I do my nightly backups at 21:00 every night, so the date and time I entered would ensure I get the backup done on the 1st. If I was doing my backups at midnight, I would need to enter 2011-12-02 so I would choose the backup done at midnight on the 1st.

Step 2: Select the files to restore

After selecting your file daemon, you will next need to select which fileset you want to restore from. Going with our example in the previous step, we will then be presented with a list of all the jobs required to get the files restored. Since I do full backups once a week and incremental backups during the week, I would need the 4 incremental jobs and the full backup from the 26th to restore the files as they were on November 30th. Bacula displays these jobs and the tapes or files (depending on your backup medium) required to restore. A note about tapes: You will need to load these tapes into your library changer or have them ready on-site to do the restore. Once this information is displayed, Bacula then puts you into what they call file selection mode. I won't go into too much detail about the file selection mode, but you can type "help" to get more info about navigating this mode. Basically you need to "mark" the files and/or directories you want to restore and then type "done".

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Step 3: Modify parameters of the restore job

After you exit the file selection mode, you will be presented with the default parameters for the restore job. These will match the parameters you setup in the bacula-dir.conf configuration file. There is an option when you are shown the parameters, mod, which you will want to select. Once you select mod, you can then modify any of the parameters of the job. You will probably want to modify the location of where you want the files restored, and the pool. You can also modify the time of when to restore if the tape drive is being used (for example).

After you're done modifying, you can start the restore!

Happy restoring and be glad that you did backups!