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## **Less known Solaris Features: Point-in-time copy with AVS - Part 2: Basics**

One of this methods is the usage of the point in time copy functionality of the Availability Suite. I've wrote about another function of AVS not long ago when i wrote the tutorial about remote replication. Point-in-time-copy and remote replication are somewhat similar (you detect and record changes and transmit those to a different disk, albeit the procedures are different). Thus it was quite logical to implement both in the AVS.

**Availability Suite (AVS)**The AVS is a Suite consisting out of two important parts: The "Remote Replication" functionality and the "Point-in-time Copy" functionality. Regular readers of this blog will remember the remote replication as i've already written a tutorial about it. The Availability Suite is integrated to Solaris Express Community and Developer Edition. You can use it for free. It's available for Solaris as well, but when you want support for it, you have to buy the product, as it's a add-on product for Solaris 10

The jargon of Point in Time Copies with AVSOkay, as every technology the mechanisms of Point-in-time copies have their own jargon and i will use it quite regulary in this tutorials.

**Master volume**The master volume is the source of the point in time copy. This is the original dataset

**Shadow volume**The shadow volume is the volume, which contains the point in time copy

**Virtual shadow volume** There are certain methods to establish a point in time copy, that copies only the original data in the case the data is changed on the master volume. But such a shadow volume is incomplete, as the unchanged parts are missing on the shadow volume . For this the virtual shadow volume was introduced.The idea is simple, but effective. Whenever a block wasn't changed since the last sync of your point-in-time copy, the data is delivered by the master volume. When the block has changed, the data is delivered by the shadow volume. This is transparent to the user or the application, as this virtual shadow volume is created by the AVS point-in-time copy drivers. You access this virtual shadow volume simply by using the name of the shadow volume, even albeit the volume doesn't contain all the needed data.

**Bitmap volume** All this mechanisms need a logbook about all the changes made to the master volume. This job is done by bitmap volume. Whenever a block on the disk is changed, AVS marks this in the bitmap volume. The bitmap volume is used at several ocassions. By using the bitmap volume it can effienctly sync the master and the shadow volume, you can construct the virtual shadow volume with it in an efficent way.

All types of volumes can be placed on real disk or volumes represented by Veritas Volume Manager or Solaris Volume Manager.

**Types of copies**Point-in-time Copy in AVS supports three types of copies:

independent copies

dependent copies

compact independent copies

All three have a basic idea. Using a bitmap to track changes and using it generate a point-in-time copy. But the methods behind it are quite different. In the next three parts of this tutorial i will dig deeper into this methods.

Posted by Joerg Moellenkamp in English at 20:43