

EMC Mainframe Software Support Newsletter

December 2012

Welcome to this month's EMC Mainframe Software Support Newsletter - MSSN.

MSSN is a technical resource for our mainframe customer base. In it you will find tips on product usage, various host based software commands, Knowledge Base Solutions written in the past month specific to the mainframe environment and other things we feel might be important for you to maximize your EMC product experience.

While this newsletter is part of the EMC effort to keep our customers up to date on the use of our products, we also encourage you to visit the [EMC Mainframe Enablers Support page](#) for more in-depth information.

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[Featured Topic: Consistency Groups for z/OS with Autoswap \(Part II\)](#)

In the October 2012 issue of the Mainframe Software Support Newsletter, we started the discussion of Consistency Group with Autoswap. In that issue we went over the basic concept of Consistency Group in z/OS and how it provides a consistent image on the R2 boxes in the event of a disaster. As stated then, this provided a recoverable copy of the customer data that was consistent and had no loss of write activity. EMC took that a step further to provide the ability to transparently swap, without operational interruption, to the R2 box for continuous availability in the event the production z/OS LPARs were still available. This requires the R2 box to be channel attached to the production LPAR. If you'll recall, when an event occurs where a device or link becomes unavailable a 'trip' occurs. The Enginuity Consistency Assist (ECA) feature on the Symmetrix opens an ECA window for the defined congroup and alerts the Mainframe Enablers (MFE) software which opens an ECA window for other boxes in the defined congroup. The Enginuity code then blocks active write IOs to the group while MFE software ensures all the links in the consistency group have had their links suspended. Then the MFE software closes the ECA window(s) .

With Autoswap for z/OS a different activity takes place, depending on the event. These events are defined using the Congroup Autoswap Extension parameter, CAXOPTS, in the Consistency Group parmlib member. CAXOPTS is pointed to by the CAX sub-parm in the actual Consistency Group definition in the same parmlib member. These events include: intervention required; nopaths; synclinkfailure. For a complete description of events and other parameter values refer to the z/OS Consistency Groups Product Guide.

The Autoswap activity has several steps. During this process, the AutoSwap SW does the following:

- Temporarily halt I/O to the swap group. AutoSwap holds all write I/O during the swap process to ensure dependent write consistency. This step protects data and ensures restartability in the swap group should failures occur in the infrastructure during the swap event
- Condition the RDF devices to disable access to the source devices and enable access to the target devices. During the time I/O to the devices is being queued, AutoSwap reconfigures the SRDF pair to allow the application I/O stream to be serviced by the target SRDF device.
- Transfer reserves to the target devices.
- Switch the contents of the Unit Control Blocks (UCBs) of the source and target pairs. Because the contents of the UCBs are swapped, the redirection of I/O is transparent to the applications running. The redirection of I/O persists until the next IPL, unless a swap back is initiated.
- Release the halted I/O. AutoSwap uses the Cross System Communication facility of SCF to coordinate swaps across multiple z/OS images in a shared DASD or parallel sysplex environment. Because AutoSwap uses SCF, the AutoSwap consistency environment can span multiple LPARS, within or outside parallel sysplexes, multiplexes, or combinations of these.
- The writes are then continued, now to the R2.

You can verify this by doing a planned swap on a test LPAR, if one is available. Before doing a planned swap, dump the UCB contents of both the R1 and R2 devices using z/OS console command: DS QD,cua,nn,UCB.

Note the UCB addresses. Once the swaps have occurred, do the same and compare. You will see that the UCB addresses have been swapped.

There are two types of swap that Congroup with AutoSwap can perform: Planned and Unplanned. A planned swap is useful for DR tests or for maintenance needs such as power reconfiguration, DASD relocation or channel connectivity reorganization. An unplanned swap is initiated when certain events occur, some of which were related above.

So far, the discussion has been around an AutoSwap group in a single LPAR environment. What happens in a multi-LPAR environment when multiple LPARs have access to the same RDF configuration? If an AutoSwap swap event occurs, in addition to the LPAR detecting the swap event there may be one or more other LPARs with addressability to the same R1 which is being swapped. As you might guess, this can cause applications on one LPAR seamlessly swapping while the other LPARs will get intervention required, causing them to have their own SWAP event. The Cross System Communication (CSC) facility of the EMC Symmetrix Control Facility (EMCSCF or SCF; marketed as ResourcePak Base) prevents this from occurring. With CSC, SCF communicates with MFE SW running in other LPARs. Consistency Group started tasks running in a multi-LPAR environment use a parameter called OWNER. This is used for identifying the controlling LPAR when two or more LPARs are monitoring the same Consistency Group. During start-up of a SCF started task, you will see the CSC facility identify other LPARs addressing the same Symmetrixes. During Consistency Group initialization, AutoSwap, using the CSC facility, discovers other LPARs with AutoSwap active. So, when an autoswap is initiated as described above, AutoSwap will use CSC to coordinate the swaps across the participating LPARs. If, for some reason, there is a problem on any of the Symmetrix subsystems involved during this process, the swap will be backed out and the writes will continue on the R1 side. This prevents an inconsistency within the defined congroup from occurring and jeopardizing data integrity. In the event of a swap backout, EMC will diagnose the cause of the backout, so it is necessary to collect all the SCF, Host Component and Congroup logs and contact the EMC Support Center for assistance.

In a future issue we will address how to swap back to the original production configuration after an AutoSwap event.

For more information on implementing Consistency Groups for z/OS with AutoSwap, please refer to the Consistency Group Product Guide, the AutoSwap Product Guide and the ResourcePak Product Guide available on Powerlink.

Next issue: ME, M6, M9 - Who are We?

[This Month's Tech Tip](#)

New Utility for Collecting Debug Info for SRDF/A MSC Troubleshooting

In order to assist you in collecting the correct data needed for EMC to troubleshoot an issue in your SRDF/A MSC environment, a new utility is available to support all Mainframe Enabler releases. The EMCGRAB utility is designed to run all of the queries required by EMC support personnel to diagnose the current state of your environment. In addition, the utility provides you with the option to automatically FTP the collected data to EMC.

Written in REXX, EMCGRAB is designed to primarily run in batch mode. Prior to executing the utility for the first time, you will need to customize the two support files, GRABJCL and GRABPARM, for your environment. The instructions on how to customize and execute EMCGRAB are contained in the accompanying User Guide.

EMCMGRAB JCL:

```
// JOBCARD
//STEP01 EXEC PGM=IKJEFT01,DYNAMNBR=20,
// PARM=('EMCMGRAB,SR=12345678,FTP=YES', X
//          'DSN=DS-PREFIX.SAMPLIB')
//SYSPROC DD DISP=SHR,DSN=DS-PREFIX.SAMPLIB
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD DUMMY
```

EMCMGRAB Parms:

```
* EMCGRAB PARMS
* MFE LOADLIB
LOADLIB = DS-PREFIX.LINKLIB          THIS IS THE MFE LOADLIB
* HOST COMPONENT PARMS
HCPARM = DS-PREFIX.SAMPLIB(RDFCFG0)
* SCF PARMS
SCFPARM = DS-PREFIX.SAMPLIB(SCFINI)
```

EMCMGRAB is included with the Mainframe Enablers 7.5 release. If you use an earlier version of Mainframe Enablers, you can request the EMCGRAB utility by calling EMC support. You will be sent a ZIP file that will contain a TSO XMIT member for the utility and its' supporting files along with the User Guide.

[Useful SW Release information](#)

Current

- MFE 7.5 – all available maintenance is required
- MFE 7.4 level set EMC7401
- MFE 7.3 level set EMC7303
- MFE 7.2 level set EMC7204 – End of Service Life December 31st, 2012

Lowest supported levels

MFE 7.3 level set EMC7301

MFE 7.2 level set EMC7201 – End of Service Life December 31st, 2012

Your Questions Answered

How Do I Decommission a Symmetrix after Upgrading to a VMAX?

You have just upgraded to new EMC mainframe storage and have finished migrating all of your data to these new boxes. So the next question is how do I safely remove the old boxes and not leave anything that might need to be addressed later? This article is meant to be an aid into helping you cleanly remove those old storage units and the references to them.

The first thing that should be done is to verify one last time that all of the data has been moved. Once you start this process there is no going back. The next thing would be to initialize the volumes with the SG attribute and the volsers not matching any storage groups. An example of this is MVxxxx where xxxx is the CUA. This will allow the volumes to remain online and not risk having them used. Next check all of your software that might be using these CUAs and update their parms appropriately. This could be third party software or in-house written programs. Look at your own library or group's library for canned JCL and update if appropriate. Scan for scheduled jobs or automation that is using any of these CUA's and update. If you have TimeFinder jobs make sure that you have updated those. If you are monitoring these boxes with a product such as Netcool, remove them from monitoring.

If this box is not part of a mirrored pair, update EMC Host Component and ResourcePak Base parm files for references to the Symm serial numbers or CUA ranges. Places where they may occur are include and exclude lists or gatekeeper lists. If found, update the file and remove them. Again, reload the appropriate parm files and check for issues. The boxes are now ready to have the volumes scrubbed if that is a requirement in your shop. The boxes are now ready for removal from the environment. This is explained towards the end of this article.

If these boxes are part of a mirrored pair, there is some additional work to be done. The Congroup relationship for the devices should be removed. There are two ways to accomplish this. The first is to make sure that Congroup is running and then disable all of the Congroup. Update the Congroup parms removing any references to these boxes and restart Congroup. This will validate the parm file. If you can, issue a modify command to the Congroup address space to display all of the volumes and verify that none of these volumes are part of the processing. If doing this is disruptive to other processing or if it cannot be done, use ECGUTIL to clean up the volumes on the box that you are removing. See appendix C in the CG manual. This will allow you to continue work on this without having to worry that this box will be part of a DR scenario if one should occur – planned or unplanned.

For the items below, the assumption is that there is connectivity to all boxes from somewhere. If that is not the case and there is a data scrub requirement, some thought needs to be put into the order of the following steps.

Since there is connectivity to all of the boxes, I would have the systems programming staff update the gen to have all of the volumes marked offline, if possible. This way, if an IPL is required during the following steps, there is no chance of a problem with duplicate volsers.

- Issue a DELETEPAIR for the volumes used in an SRDF relationship.
- If the gen change was not possible, all of the target volumes will have to be clipped to prevent duplicate volsers.
- After the pairs have been deleted, delete all of the dynamic RDF groups in these boxes.
- At this point, logically drop the RDF links.
- If a data scrub is requirement, it can be done now. If there are any devices in a box that are not CUA addressable, you should use TimeFinder to pair them to an addressable device prior to the data scrub if the scrub requires accessibility. That is the only way to ensure that the data is destroyed on that volume also.

The boxes can now be removed. You can have the systems group remove the boxes from the gen. You should have EMC come onsite to power the boxes down. When they are powered down, schedule your facilities staff to remove the power and optical cables.

[Recent Knowledge Base Solutions](#)

emc310605 Are there any compatibility issues between EMC Mainframe Software products and the IBM EC12 processor

emc310059 Can an EMC z/OS Storage Manager plug-in be removed or added without completely reinstalling the product

emc307821 EMCSS02E Abnormal Condition Occurred In EMC Subsystem - EMCPCR01

emc307515 Dlm: How do I free a lock on a Checkpoint file system so that I can delete it

emc309477 What is required to diagnose z/OS Storage Manager (EzSM) issues

emc309225 Mainframe Enablers: Increase in SCF Trace data after AutoSwap

emc306909 MFE: EMC MGRAB runs but creates no output

Customer Experiences

Each month we would love to hear from you on your experiences with EMC solutions. Tell us about a DR test, a new implementation, even a problem that was encountered and the steps taken to resolve. Sharing this type of experience with our mainframe community could be of benefit to us all! There is a comment box at the end of the survey (see link below) where you can send questions and a way to contact you for your customer experience.

Monthly Diversion

There are 10 types of people in this world, those who know binary and those who don't.

We need your feedback!

Some would say that introducing a newsletter is so 1990's, but then again some people have been announcing the demise of the mainframe since the 1990's. We think we know better, but we would prefer not to remain an uninformed minority, so please, we would be very grateful if you could take the time to answer our 2 question [survey](#).