DTAG - Bonn Lab - Backup Scripts

Version 1.0 - January 30, 2012

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Document Release Notes

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| 1.0 | Steven Sciriha | Jan 02 , 2012 | Initial version |
| 1.1 | Steven Sciriha | Feb 1, 2012 | Added tables to Appendix A |
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# **INTRODUCTION**

This document is intended to outline the installation and operation process for the 4 (four) backup scripts created for the Amdocs Bonn Lab deployment that cover the following main applications: PCRF, DRA/SLF, SDB and BMS. Each backup script is installed in the crontab of the respective server and is configured to run on a periodic basis. The backup scripts produce a log file detailing the backup process. Backup file retention is handled by the scripts and the retention period is configurable. The BMS server has been designated as the central storage for all backup files. A further script was developed for the BMS server that automates the retrieval of the backup files from all the application servers to the local directory on the BMS server. This script also retrieves the switch configurations and images (please refer to section 3. OPERATION and Appendix A for further details)

# **InstallatioN**

## *PCRF*

* Place the PCRF backup script (PCRF\_Backup.sh) in any location with

read/write permissions for the ***BPC*** user (ex. /stage)

* The script should be given read/write permissions for the ***BPC*** user
* The script contains default RMA rules engine credentials that need to be updated accordingly for proper operation. Open the script up for editing and update the following variables with the latest RMA root credentials:

  XPC\_USERNAME="**<username>**"

  XPC\_PASSWORD="**<password>**"

* The retention period needs to be set within the script by updating the following variable accordingly:

# The age variable represent the retention period

age="<**age\_in\_days**>"

* The script will be run periodically within the crontab for the ***BPC*** user and needs to be installed as follows:

**<minute> <hour>** \* \* \* **<absolute path to**

**script>**/PCRF\_Backup.sh 2> /dev/null

Where <minute> and <hour> is the daily time to run the script. Ex 23 15 \* \*

\* would make the script run at 15:23 GMT everyday.

## *DRA*

* Place the DRA backup script (DRA\_Backup.sh) in any location with

read/write permissions for the ***ROOT*** user (ex. /stage)

* The script should be given read/write permissions for the ***ROOT*** user
* The script contains default credentials for the subscriber partition utility (INSTANCE/bin/rgmgr.sh) that need to be updated accordingly for proper operation. Open the script up for editing and update the following variables with the latest rgmgr root credentials:

  XPC\_USERNAME="**<username>**"

  XPC\_PASSWORD="**<password>**"

* The retention period needs to be set within the script by updating the following variable accordingly:

# The age variable represent the retention period

age="<**age\_in\_days**>"

* The script will be run periodically within the crontab for the ***ROOT*** user and needs to be installed as follows:

**<minute> <hour>** \* \* \* **<absolute path to**

**script>**/DRA\_Backup.sh 2> /dev/null

Where <minute> and <hour> is the daily time to run the script. Ex 23 15 \* \*

\* would make the script run at 15:23 GMT everyday.

## *SDB*

### Oracle RMAN Database backup setup

* The following instructions will configure the following backup:
* Full, Online Database backup
* Daily
* Retention of 3 days
* Create the following configuration file:

**touch /u01/app/oracle/widespan/backups/database\_backup.cf**

* Ensure the following directory exists if not create it:

/u01/app/oracle/widespan/backups/daily

* Insert the following lines into the same file:

           targetuser=r6

           targetpass=r6

           destination=disk

           directory=/u01/app/oracle/widespan/backups/daily

           retention=3

           mailto=oracle

* Add the following lines to the ***ORACLE*** crontab:

# Pre-defined option 1 (daily full backup)  
**<minute> <hour>** \* \* \* /u01/app/oracle/widespan/backups/database\_backup.sh /u01/app/oracle/widespan/backups/database\_backup.cf full > /dev/null 2>&1

#cron entry added for backup\_purge\_07.sh script

**<minute> <hour>** \* \* \* /u01/app/oracle/widespan/backups/backup\_purge\_07.sh /u01/app/oracle/widespan/backups/database\_backup.cf > /dev/null 2>&1

Where **<minute> <hour>** is the daily time to run the script. Ex 23 15 \* \*

\* would make the script run at 15:23 GMT everyday.

             The considerations here are the following:

    i). Backup directory (***directory*** above) needs to be big enough to store 3 days worth of FULL backups which I estimate would be around 6-8Gb

          ii). Retention period (***retention*** above) directly affects space usage…Recommendation was for 3 days worth of full backups

         iii). ***Targetuser/targetpass*** need to be update according to the schema credentials

### System backup script setup

* Place the SDB backup script (Backup\_DRA.sh) in any location with

read/write permissions for the ***ROOT*** user (ex. /stage)

* The script should be given read/write permissions for the ***ROOT*** user
* The script contains default credentials for the subscriber partition utility (INSTANCE/bin/rgmgr.sh) that need to be updated accordingly for proper operation. Open the script up for editing and update the following variables with the latest rgmgr root credentials:

  XPC\_USERNAME="**<username>**"

  XPC\_PASSWORD="**<password>**"

* The retention period needs to be set within the script by updating the following variable accordingly:

# The age variable represent the retention period

age="<**age\_in\_days**>"

* The script will be run periodically within the crontab for the ***ROOT*** user and needs to be installed as follows:

**<minute> <hour>** \* \* \* **<absolute path to**

**script>**/Backup\_DRA.sh 2> /dev/null

Where <minute> and <hour> is the daily time to run the script. Ex 23 15 \* \*

\* would make the script run at 15:23 GMT everyday.

## *BMS*

### Backup Script

* Place the BMS backup script (BMS\_Backup.sh) in any location with

read/write permissions for the ***BWC*** user (ex. /stage)

* The script should be given read/write permissions for the ***BWC*** user
* The script contains the default password for the postgres database user that needs to be updated accordingly for proper operation. Open the script up for editing and update the following variable with the latest postgres credentials:

#Update the following variable with the latest postgres user password

export PGPASSWORD=”<**postgres\_user\_password>**”

* The retention period needs to be set within the script by updating the following variable accordingly:

# The age variable represent the retention period

age="<**age\_in\_days**>"

* The script will be run periodically within the crontab for the ***ROOT*** user and needs to be installed as follows:

**<minute> <hour>** \* \* \* **<absolute path to script>**/BMS\_Backup.sh 2> /dev/null

Where <minute> and <hour> is the daily time to run the script. Ex 23 15 \* \* \*

would make the script run at 15:23 GMT everyday.

### Backup file retrieval script

* Install the expect package on the BMS server

# yum install expect

* Place the Backup file retrieval script (Fetch\_Backups.sh) in any location with read/write permissions (eg. /stage)
* Create local directories for each application type (BMS, PCRF, DRA, SDB, SWITCH) in which all the transferred backups will be stored
* Open the script for editing and update the following variables accordingly:

set local\_backup\_dir\_BMS "/stage/BMS/"

set local\_backup\_dir\_PCRF "/stage/PCRF/"

set local\_backup\_dir\_DRA "/stage/DRA/"

set local\_backup\_dir\_SDB "/stage/SDB/"

set local\_backup\_dir\_SWITCH "/stage/SWITCH/"

set PCRF\_PASS "labbws"

set PCRF\_PATH "/opt/bpc/backup/TARFILE"

set PCRF\_HOST "kll5029"

set DRA\_PASS "labbws"

set DRA\_PATH "/opt/bpc/backup/TARFILE"

set DRA\_HOST "kll0057"

set BMS\_PASS "labbws"

set BMS\_PATH "/opt/bwc/backup/TARFILE"

set BMS\_HOST "kll5033"

set SDB\_PASS "labbws"

set SDB\_PATH "/u01/app/oracle/widespan/backups/daily"

set SDB\_HOST "kll5030"

set SWITCH\_PASS "admin"

set SWITCH\_HOST "192.168.155.48"

* Install the script into the ***ROOT*** crontab in the following manner:

**<minute> <hour>** \* \* \* **<absolute path to script>**/Fetch\_Backups.sh > /tmp/Fetch\_Log.txt 2> /dev/null

**\*\* IT IS MANDATORY THAT THE TIME SETTING SELECTED FOR THE CRONJOB TO RUN TO BE AT LEAST 1 HR LATER THEN THE CRONJOB TIME FOR THE BACKUP SCRIPTS TO ALLOW THE FETCH\_BACKUPS SCRIPT TO TRANSFER OVER THE LATEST BACKUP\*\***

OPERATION

* During the initial run of every backup script, on the respective nodes, the backup directory structure is created. The location of the backup directory varies according to application/user. Please see Appendix A for details.
* A backup log is generated after every run. This backup log called *backup.log* is located in the backup directory
* The backup script will perform a number of backup functions dependent on the application. Please see Appendix A for details.
* The backup script will output logs indicating which backup process it is currently attempting in the backup log and it will also output any errors encountered, if any.
* The backup script will perform a cleanup of any backup files based on the retention period configured in the script.
* All backup file names follow the following convention:

**BACKUP\_<HOSTNAME>\_<APPLICATION>\_<ddmmyy>.tar**

* Once the backup is complete the result will be displayed in the backup log file together with the absolute path to the backup file

Example:

*Complete. The archive can be found at /opt/bwc/backup/TARFILE/BACKUP\_kll5033.bridgewatersys.com\_BMS.01.02.12.tar*

* The Fetch\_Backups.sh script, when executed, will attempt to reach out to all the application servers it has configured
* The output log for the Fetch\_Backups.sh script is called Fetch\_Log.txt is located in /tmp. This log will show the logs resulting from the each of the scripts attempt at transferring over the backup files
* The Fetch\_Backups.sh script has an additional use which is SWITCH configuration and image backup, which are retrieved directly from the switch and placed into the local switch backup directory on the BMS server.
* If any issues or concerns arise please contact Steven Sciriha (email: Steven.Sciriha@amdocs.com)

APPENDIX A

|  |  |  |
| --- | --- | --- |
| *Application* | *Script Name* | *Backup Directory* |
| PCRF | Backup\_PCRF.sh | Backup logfile location: **/$BPC\_HOME/backup**  Backup tarfile location: **/$BPC\_HOME/backup/TARFILE** |
| DRA | Backup\_DRA.sh | Backup logfile location: **/$BPC\_HOME/backup**  Backup tarfile location: **/$BPC\_HOME/backup/TARFILE** |
| BMS | Backup\_BMS.sh | Backup logfile location: **/$BWC\_HOME/backup**  Backup tarfile location: **/$BWC\_HOME/backup/TARFILE** |
| SDB | Database\_backup.sh | Backup logfile location: **/$ORACLE\_HOME/widespan/backups/TARFILE**  Backup tarfile location: **/$ORACLE\_HOME/widespan/backups/TARFILE** |
| SWITCH | Fetch\_Backups.sh | Backup tarfile location: **[CENTRAL BMS SERVER]/$local\_backup\_dir/SWITCH** |

*Table 1.0 Application-specific backup locations*

*Table 2.0 PCRF backup manifest*

|  |
| --- |
| *Backup file manifest* |
| Parmdb files for all the configured instances: |
| BPCapps-44REL-hga00a00009063.PCRF.parmdb  BPCsnmp-44REL-hga00a00007248.SNMP.parmdb  BPCttdb-44REL-hga00a00007424.TimesTen.parmdb |
| RMA rules for all configured projects |
| BPCapps-44REL-hga00a00009063.PCRF.RE.NetworkPolicy.zip  BPCapps-44REL-hga00a00009063.PCRF.RE.SessionRights.zip  BPCapps-44REL-hga00a00009063.PCRF.RE.TieredServices.zip |
| The BPC configuration directory /<ACTIVE\_INSTANCE>/config/provserver/ |
| BPC.config.zip |
| Package versions for all the installed packages both at a system and application level |
| PackageVersions.010212.txt |
| Relevant system –level configs |
| /etc/sysconfig/network-scripts/ifcfg-eth0  /etc/sysconfig/network-scripts/ifcfg-eth1  /etc/sysconfig/network-scripts/ifcfg-eth2  /etc/sysconfig/network-scripts/ifcfg-eth3  /etc/sysconfig/network-scripts/ifcfg-lo  /etc/sysconfig/network-scripts/ifcfg-usb0  /etc/sysconfig/network-scripts/ifdown  /etc/sysconfig/network-scripts/ifdown-bnep  /etc/sysconfig/network-scripts/ifdown-eth  /etc/sysconfig/network-scripts/ifdown-ippp  /etc/sysconfig/network-scripts/ifdown-ipsec  /etc/sysconfig/network-scripts/ifdown-ipv6  /etc/sysconfig/network-scripts/ifdown-isdn  /etc/sysconfig/network-scripts/ifdown-post  /etc/sysconfig/network-scripts/ifdown-ppp  /etc/sysconfig/network-scripts/ifdown-routes  /etc/sysconfig/network-scripts/ifdown-sit  /etc/sysconfig/network-scripts/ifdown-sl  /etc/sysconfig/network-scripts/ifdown-tunnel  /etc/sysconfig/network-scripts/ifup  /etc/sysconfig/network-scripts/ifup-aliases  /etc/sysconfig/network-scripts/ifup-bnep  /etc/sysconfig/network-scripts/ifup-eth  /etc/sysconfig/network-scripts/ifup-ippp  /etc/sysconfig/network-scripts/ifup-ipsec  /etc/sysconfig/network-scripts/ifup-ipv6  /etc/sysconfig/network-scripts/ifup-ipx  /etc/sysconfig/network-scripts/ifup-isdn  /etc/sysconfig/network-scripts/ifup-plip  /etc/sysconfig/network-scripts/ifup-plusb  /etc/sysconfig/network-scripts/ifup-post  /etc/sysconfig/network-scripts/ifup-ppp  /etc/sysconfig/network-scripts/ifup-routes  /etc/sysconfig/network-scripts/ifup-sit  /etc/sysconfig/network-scripts/ifup-sl  /etc/sysconfig/network-scripts/ifup-tunnel  /etc/sysconfig/network-scripts/ifup-wireless  /etc/network  /etc/modprobe.conf  /etc/hosts  /etc/syslog.conf  /etc/passwd  /etc/group  /etc/sysconfig/network-scripts/route- \*  /etc/sysctl.conf  /etc/sysconfig/syslog  /etc/ntp.conf  /etc/sysconfig/selinux  /etc/yum.repos.d/rhel-dvd-repo |

*Table 3.0 DRA backup manifest*

|  |
| --- |
| *Backup file manifest* |
| Parmdb files for all the the configured instances: |
| BPCdraslf-44REL-hga00a00008958.DRASLF.parmdb  BPCapps-44REL-hga00a00008958.SLF1\_B.parmdb  BPCsnmp-44REL-hga00a00005376.SNMP.parmdb  BPCttdb-44REL-hga00a00007099.TimesTen.parmdb |
| Export of the Active partition configuration using the rgmgr utility  e.g.  *CLUSTER PARTITION*  *Name: SLF1\_A*  *Status: ACTIVE*  *Create Date: 2012-02-24 17:47*  *Activation Date: 2012-02-24 17:50*  *Default Cluster ID: 0*  *Ranges*  *Id Min Max*  *0 302000000000000 302999999999999*  *rgmgr command ran successfully* |
| Active\_Partition\_Config.txt |
| Export of the CRM configuration using the crm CLI  e.g  *node kll0056.bridgewatersys.com \*  *attributes standby="off"*  *node kll0057.bridgewatersys.com \*  *attributes standby="off"*  *primitive traffix\_config\_mgr-app-prim ocf:traffix:traffix-ra \*  *params component="config\_mgr" \*  *op monitor interval="30s" timeout="20s"*  .  .  .  <SNIPPET> |
| crm\_config.txt |
| DRA/SLF specific configuration files |
| slf-config.xml  corosync.conf  dra-slf-config.xml |
| SDC configuration directories “/opt/traffix/sdc/config” “/opt/traffix/sdc/data/backup” “/etc/corosync” |
| DRA\_SDC.config.zip |
| Package versions for all the installed packages both at a system and application level |
| PackageVersions.010212.txt |
| Relevant system –level configs |
| /etc/logrotate-traffix.conf  /etc/rsyslog.conf  /etc/snmp/snmpd.conf  /etc/ssh/sshd\_config  /etc/sysconfig/ip6tables  /etc/sysconfig/iptables  /opt/traffix/config/fep\*.xml  /opt/traffix/config/defaultLBConfiguration.xml  /opt/traffix/config/\*  /etc/keepalived/keepalived.conf  /etc/ipsec\*  /etc/sysconfig/network-scripts/ifcfg-eth0  /etc/sysconfig/network-scripts/ifcfg-eth0.bak  /etc/sysconfig/network-scripts/ifcfg-lo  /etc/sysconfig/network-scripts/ifdown  /etc/sysconfig/network-scripts/ifdown-bnep  /etc/sysconfig/network-scripts/ifdown-eth  /etc/sysconfig/network-scripts/ifdown-ippp  /etc/sysconfig/network-scripts/ifdown-ipsec  /etc/sysconfig/network-scripts/ifdown-ipv6  /etc/sysconfig/network-scripts/ifdown-isdn  /etc/sysconfig/network-scripts/ifdown-post  /etc/sysconfig/network-scripts/ifdown-ppp  /etc/sysconfig/network-scripts/ifdown-routes  /etc/sysconfig/network-scripts/ifdown-sit  /etc/sysconfig/network-scripts/ifdown-sl  /etc/sysconfig/network-scripts/ifdown-tunnel  /etc/sysconfig/network-scripts/ifup  /etc/sysconfig/network-scripts/ifup-aliases  /etc/sysconfig/network-scripts/ifup-bnep  /etc/sysconfig/network-scripts/ifup-eth  /etc/sysconfig/network-scripts/ifup-ib  /etc/sysconfig/network-scripts/ifup-ippp  /etc/sysconfig/network-scripts/ifup-ipsec  /etc/sysconfig/network-scripts/ifup-ipv6  /etc/sysconfig/network-scripts/ifup-ipx  /etc/sysconfig/network-scripts/ifup-isdn  /etc/sysconfig/network-scripts/ifup-plip  /etc/sysconfig/network-scripts/ifup-plusb  /etc/sysconfig/network-scripts/ifup-post  /etc/sysconfig/network-scripts/ifup-ppp  /etc/sysconfig/network-scripts/ifup-routes  /etc/sysconfig/network-scripts/ifup-sit  /etc/sysconfig/network-scripts/ifup-sl  /etc/sysconfig/network-scripts/ifup-tunnel  /etc/sysconfig/network-scripts/ifup-wireless  /etc/sysconfig/network  /etc/modprobe.conf  /etc/hosts  /etc/syslog.conf  /etc/passwd  /etc/group  /etc/shadow  /etc/sysconfig/network-scripts/route-\*  /etc/sysctl.conf  /etc/sysconfig/syslog  /etc/ntp.conf  /etc/sysconfig/selinux  /etc/yum.repos.d/rhel-debuginfo.repo  /etc/yum.repos.d/rhel-kls0005.repo  /etc/yum.repos.d/rhel-source.repo |

*Table 4.0 BMS backup manifest*

|  |
| --- |
| *Backup file manifest* |
| Parmdb files for all the the configured instances: |
| BWCbms-1.3.1-OAM00001396.BMSPrimary.parmdb  BWCcta-1.3.1-OAM00001396.CTAPrimary.parmdb |
| Export of the BMS and CTA configuration directory $INSTANCE/config |
| BMSPrimary.config.zip  CTAPrimary.config.zip |
| Export of the POSTGRES database |
| pg\_backup.tar |
| Package versions for all the installed packages both at a system and application level |
| PackageVersions.010212.txt |
| Relevant system –level configs |
| /etc/sysconfig/network-scripts/ifcfg-eth0  /etc/sysconfig/network-scripts/ifcfg-eth1  /etc/sysconfig/network-scripts/ifcfg-eth2  /etc/sysconfig/network-scripts/ifcfg-eth3  /etc/sysconfig/network-scripts/ifcfg-lo  /etc/sysconfig/network-scripts/ifcfg-usb0  /etc/sysconfig/network-scripts/ifdown  /etc/sysconfig/network-scripts/ifdown-bnep  /etc/sysconfig/network-scripts/ifdown-eth  /etc/sysconfig/network-scripts/ifdown-ippp  /etc/sysconfig/network-scripts/ifdown-ipsec  /etc/sysconfig/network-scripts/ifdown-ipv6  /etc/sysconfig/network-scripts/ifdown-isdn  /etc/sysconfig/network-scripts/ifdown-post  /etc/sysconfig/network-scripts/ifdown-ppp  /etc/sysconfig/network-scripts/ifdown-routes  /etc/sysconfig/network-scripts/ifdown-sit  /etc/sysconfig/network-scripts/ifdown-sl  /etc/sysconfig/network-scripts/ifdown-tunnel  /etc/sysconfig/network-scripts/ifup  /etc/sysconfig/network-scripts/ifup-aliases  /etc/sysconfig/network-scripts/ifup-bnep  /etc/sysconfig/network-scripts/ifup-eth  /etc/sysconfig/network-scripts/ifup-ippp  /etc/sysconfig/network-scripts/ifup-ipsec  /etc/sysconfig/network-scripts/ifup-ipv6  /etc/sysconfig/network-scripts/ifup-ipx  /etc/sysconfig/network-scripts/ifup-isdn  /etc/sysconfig/network-scripts/ifup-plip  /etc/sysconfig/network-scripts/ifup-plusb  /etc/sysconfig/network-scripts/ifup-post  /etc/sysconfig/network-scripts/ifup-ppp  /etc/sysconfig/network-scripts/ifup-routes  /etc/sysconfig/network-scripts/ifup-sit  /etc/sysconfig/network-scripts/ifup-sl  /etc/sysconfig/network-scripts/ifup-tunnel  /etc/sysconfig/network-scripts/ifup-wireless  /etc/network  /etc/modprobe.conf  /etc/hosts  /etc/syslog.conf  /etc/passwd  /etc/group  /etc/sysconfig/network-scripts/route- \*  /etc/sysctl.conf  /etc/sysconfig/syslog  /etc/ntp.conf  /etc/sysconfig/selinux  /etc/yum.repos.d/rhel-dvd-repo |
| Export of the /WideSpan/snmp configuration directory |
| snmp.config.zip |

*Table 5.0 SDB backup manifest*

|  |
| --- |
| *Backup file manifest* |
| FULL ONLINE BACKUP |
| fulldb\_0ln23hkm\_1\_1  fulldb\_0mn23hkm\_1\_1  fulldb\_ctl\_c-3775664486-20120130-00  arch\_0on23hl1\_1\_1  arch\_0pn23hl1\_1\_1  arch\_0qn23hl9\_1\_1  arch\_0rn23hle\_1\_1  arch\_0sn23hlk\_1\_1  arch\_ctl\_c-3775664486-20120130-01 |

*Table 5.0 SWITCH backup manifest*

|  |
| --- |
| *Backup file manifest* |
| Switch configuration |
| getcfg.020112.192.168.155.48 |
| Switch images |
| getimg1.020112.192.168.155.48  getimg2.020112.192.168.155.48 |
| Switch boot file |
| getboot.020112.192.168.155.48 |