TNSQM 3.1.3.8 Feature Updates

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1. Introduction

This document covers the new features added in the 3.1.3.8 Patch which are the Audit File Decoder & Email Warning for Tablespaces

2. Audit File Decoder

Audit file decoder is the part of the TNSQM core framework 3.1.3.8 version. The script name is "audit_decoder" and is located in $WMCROOT/bin folder. It allows decoding of the TNSQM audit files and their conversion into a syslog format.

To run the audit file decoder you need to be sure that audit process in TNSQM framework is up and running. You can check this using the command "sap disp auditom".

Default audit syslog output folder is $WMCROOT/logs/syslog. Sysadmin activity is setup every 1am to archive the old syslog and store them into SQM archive folder.

Parameters of the audit_decoder:

- **-h** get more help information about the script
- **-list** get list of the available audit types
- **-all** use all available audit types
- **-print** use console as ouput stream
- **-gzip** save information in gzip format
- **-purge** delete all old syslog files using pattern: TNSQM_Audit_<audit_type>*

Examples:

Command: **audit_decoder –h**

Console output:

```
Usage:  audit_decoder [-print] -all|<audit_type>
        audit_decoder [-gzip] [-purge] -all|<audit_type> [<folder>]
        audit_decoder –list
```

Command: **audit_decoder –list**

Console output:

```
KqiModel
RESOURCES
RESOURCEGROUP
RESOURCETYPE
TECHNOLOGYCATEGORY
Party
sla.management
slat
servicemodel
svc.report
```

Command: **audit_decoder –all**

Output:

```
Content of the folder $WMCROOT/logs/syslog/
-rw-r--r--   1 saserver sa         36125 Feb 29 08:43
TNSQM_Audit_KqiModel_20080229.084328.syslog
-rw-r--r--  1 saserver sa      18197 Feb 29 08:43

TNSQM_Audit_Party_20080229.084329.syslog


-rw-r--r--   1 saserver sa         26800 Feb 29 08:43
TNSQM_Audit_RESOURCEGROUP_20080229.084328.syslog
-rw-r--r--   1 saserver sa         26510 Feb 29 08:43
TNSQM_Audit_RESOURCES_20080229.084328.syslog
-rw-r--r--   1 saserver sa         27676 Feb 29 08:43
TNSQM_Audit_RESOURCETYPE_20080229.084328.syslog
-rw-r--r--   1 saserver sa         30190 Feb 29 08:43
TNSQM_Audit_TECHNOLOGYCATEGORY_20080229.084329.syslog
-rw-r--r--   1 saserver sa           278 Feb 29 08:43
TNSQM_Audit_servicemodel_20080229.084329.syslog
-rw-r--r--   1 saserver sa         34033 Feb 29 08:43
TNSQM_Audit_sla.management_20080229.084329.syslog
-rw-r--r--   1 saserver sa           135 Feb 29 08:43
TNSQM_Audit_slat_20080229.084329.syslog
-rw-r--r--   1 saserver sa         11418 Feb 29 08:43
TNSQM_Audit_svc.report_20080229.084329.syslog
```

Command: **audit_decoder -all –purge –gzip**

Output:

```
Content of the folder $WMCROOT/logs/syslog/
-rw-r--r--  1 saserver sa       2758 Feb 29 08:58

TNSQM_Audit_KqiModel_20080229.085826.syslog.gz

-rw-r--r--   1 saserver sa           966 Feb 29 08:58
TNSQM_Audit_Party_20080229.085827.syslog.gz
-rw-r--r--   1 saserver sa           967 Feb 29 08:58
TNSQM_Audit_RESOURCEGROUP_20080229.085826.syslog.gz
-rw-r--r--   1 saserver sa           928 Feb 29 08:58
TNSQM_Audit_RESOURCES_20080229.085826.syslog.gz
-rw-r--r--   1 saserver sa          1348 Feb 29 08:58
TNSQM_Audit_RESOURCETYPE_20080229.085827.syslog.gz
-rw-r--r--   1 saserver sa          1503 Feb 29 08:58
TNSQM_Audit_TECHNOLOGYCATEGORY_20080229.085827.syslog.gz
-rw-r--r--   1 saserver sa           157 Feb 29 08:58
TNSQM_Audit_servicemodel_20080229.085827.syslog.gz
-rw-r--r--   1 saserver sa          1618 Feb 29 08:58
TNSQM_Audit_sla.management_20080229.085827.syslog.gz
-rw-r--r--   1 saserver sa           134 Feb 29 08:58
TNSQM_Audit_slat_20080229.085827.syslog.gz
-rw-r--r--   1 saserver sa           580 Feb 29 08:58
TNSQM_Audit_svc.report_20080229.085827.syslog.gz
```

Command: **audit_decoder RESOURCEGROUP –purge**

Output:

```
Content of the folder $WMCROOT/logs/syslog/
-rw-r--r--   1 saserver sa          2758 Feb 29 08:58
TNSQM_Audit_KqiModel_20080229.085826.syslog.gz
-rw-r--r--  1 saserver sa       966 Feb 29 08:58

TNSQM_Audit_Party_20080229.085827.syslog.gz

-rw-r--r--   1 saserver sa         26800 Feb 29 09:00
TNSQM_Audit_RESOURCEGROUP_20080229.090026.syslog
-rw-r--r--   1 saserver sa           928 Feb 29 08:58
TNSQM_Audit_RESOURCES_20080229.085826.syslog.gz
-rw-r--r--   1 saserver sa          1348 Feb 29 08:58
TNSQM_Audit_RESOURCETYPE_20080229.085827.syslog.gz
-rw-r--r--   1 saserver sa          1503 Feb 29 08:58
TNSQM_Audit_TECHNOLOGYCATEGORY_20080229.085827.syslog.gz
-rw-r--r--   1 saserver sa           157 Feb 29 08:58
TNSQM_Audit_servicemodel_20080229.085827.syslog.gz
```

```
-rw-r--r--   1 saserver sa          1618 Feb 29 08:58
TNSQM_Audit_sla.management_20080229.085827.syslog.gz
-rw-r--r--   1 saserver sa           134 Feb 29 08:58
TNSQM_Audit_slat_20080229.085827.syslog.gz
-rw-r--r--   1 saserver sa           580 Feb 29 08:58
TNSQM_Audit_svc.report_20080229.085827.syslog.gz
```

Command: **audit_decoder RESOURCEGROUP /tmp/syslog/**

Output:

Content of the folder /tmp/syslog/

-rw-r--r--   1 saserver sa   26800 Feb 29 09:03
TNSQM_Audit_RESOURCEGROUP_20080229.090320.syslog

Command: **audit_decoder -print servicemodel**

Console ouput:

```
Jan 24 14:39:59 clonmelz2 TNSQM_audit: entityname=def,
entitytype=servicemodel, operationtype=Create, username=Irene Keohane,
addinfo=asdf
Jan 24 14:40:03 clonmelz2 TNSQM_audit: entityname=def,
entitytype=servicemodel, operationtype=Update, username=Irene Keohane,
addinfo=asdf
```

Gzip format. Syslog data from the SQM audit can be store using gzip format. To force using the format add –gzip switch in command line. For more information visit http://www.gzip.org/zlib/rfc-gzip.html.

Syslog format example:

TNSQM_Audit_RESOURCES_20080325.132900.syslog

...

Mar 13 14:18:53 limerick TNSQM_audit: entityname=ATKRNCBSC01, entitytype=RESOURCES, operationtype=Create, username=saserver, addinfo=ATK Test BSC within the ATK Radio Access Network (default).

Syslog format info:

MMM d HH:mm:ss <hostname> TNSQM_audit: <message>

Message format:

entityname=<value>, entitytype=<value>, operationtype=<value>, username=<value>, addinfo=<value>

3. Mail Server Setup

1. Login as user root to DB server.
2. Edit file /etc/mail/sendmail.cf
3. Locate DS string and replace it.
4. Restart sendmail with command
   $svcadm restart network/smtp:sendmail

Continue with OEM configuration.

1. From browser login for OEM dbconsole as:

   http://full_server_name:1158/em

2. If any license agreement page appears click ‘Agree’
3. Enter username and password
4. On right upper corner click ‘Setup’
5. Click on ‘Notification method’
6. Enter

‘Outgoing Mail (SMTP) Server’: localhost

‘Identify Sender As’: IBM_user_id

'Sender's E-mail Address': ibm_email_address

7. Click 'Test Mail Servers'; the message 'Test succeeded' should appear.
8. Click 'Apply'. Message 'Update succeeded' should appear.
9. You should receive a confirmation mail message to mailbox.
10. On upper right corner click 'Preferences', then 'General'.
11. Under 'Email addresses' click 'Add another row'.
12. Enter your IBM email address.
13. Click 'Test'. The confirming message should appear in your mailbox.
14. Define alert schedule. Click 'Schedule' -> 'Define schedule'. Make sure 'Rotation frequency is set to 1 week.
15. Click 'Continue'.
16. Choose 'Start time' 12 am and 'End time' 12 am for all days of week and click 'Batch fill-in'.
17. Click 'Finish'.
18. Click 'Rules' and then move checkbox to 'Database Availability and Critical States' and click 'Create like' button.
19. Enter rule name like TEST1.
20. Click 'Next' till 'Step 4'. Set 'Warning' checkbox. Then in 'Available metrics' list choose metric 'Tablespace space used (%) (dictionary managed) and move the rule to 'Selected metrics' list.
21. Click next till step 6. On this page. On this page click 'Send me E-mail' checkbox.
22. Click 'Next' and 'Finish'.
23. Click on the newly defined rule TEST1 and make sure user SYSTEM is listed in the Email notification list and 2 metrics 'Tablespace Space Used (%) (dictionary managed)' and 'Tablespace Space Used (%)' are in Metrics list..
24. Click tab 'Database' on upper right corner and at the end of page click 'Manage metrics'
25. Click 'Edit thresholds'
26. Alter 2 metrics 'Tablespace Space Used (%)' and 'Tablespace Space Used (%) (dictionary managed)' to >= 75 and 90.
27. Click 'Ok'.

After completing those steps DB alerts for tablespace usage will be forwarded into your mailbox.

To test this setup login to database as user SYSTEM from sqlplus and run commands:

SQL> create tablespace test01 datafile '/oradata01/sadb/test1_01.dbf' size 1M autoextend off;

SQL> create table test2(n char) tablespace test01 storage (initial 800k next 50k);

SQL>alter table test2 allocate extent;

SQL>alter table test2 allocate extent;

SQL>alter table test2 allocate extent;;

SQL>alter table test2 allocate extent;

This should fail with message

:ERROR at line 1
ORA-01653: unable to extend table SYSTEM.TEST2 by 4 in tablespace TEST01

After up to 1 hour you should receive a message from OEM to your mailbox about this issue