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Takeaway

For Oracle DBAs, scripts, and the time they save, are invaluable for the maintenance and security of enterprise data. These two scripts automate several day-to-day processes, freeing time for other pressing tasks.

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Newsletter A—Monitor the file system with this alert scripting

If you are using Oracle data files with the AUTOEXTEND ON option, you must carefully monitor the file system to make sure that an Oracle file system does not become full. Oracle data files will continue to extend until they reach the end of the file system, and if the file system becomes full, the Oracle database will freeze up.

Here is a simple Korn shell script that can be used to monitor a UNIX file system and send you an e-mail whenever any file system has less than 10,000 bytes of free space.

If you check your e-mail frequently, you can avert disaster by adding space to the file system before it becomes 100 percent full.

Listing A

```
#####
# File system alert monitor for HP/UX
# (c) 2002 by Donald K. Burleson
#####

kb_free_num=10000

for free_space in `bdf|grep -v home|grep -v kbytes|awk '{ print $4 }'`
do
    free_space_num=`expr ${free_space}`
    if [ $free_space_num -lt ${kb_free_num} ]
    then
        bdf|grep $free_space
        bdf|grep $free_space|mailx -s "Filesystem < 10m Alert" \
        dburleson@online.com \
        Glinger@online.com \
        shring@mwconline.com
    fi
done
```

Once this script is tested, you can place it in a crontab file to execute every hour. If we name the script *mount_point.ksh*, this would be the cron entry for hourly execution:

```
#####
# This is the file system alert
#####
00 * * * * /home/oracle/mon/mount_point.ksh > /home/oracle/mon/al.lst
```

Newsletter B—Write a simple security audit script

Those of you familiar with the Oracle data dictionary often use the dictionary to find out if your database has any security exposures. Here are some common queries that are used to audit Oracle security.

Search for any system privileges that are granted WITH ADMIN OPTION. Privileges that are granted WITH ADMIN OPTION can be passed to other users. Hence, many companies prohibit this option, and others check to ensure that all user IDs are proper. The information for this is located in the DBA_SYS_PRIVS view and can be retrieved with the following code:

Listing B1

```
select
  grantee,
  privilege,
  admin_option
from
  sys.dba_sys_privs
where
  admin_option = 'YES'
and
  grantee not in ('SYS','SYSTEM', etc);
```

Search for any end users with system privileges. Users with system-level privileges may have access to unwanted areas of the database. For example, the select any table system privilege may allow unwanted access to a user. Here is the associated code:

Listing B2

```
select
  grantee      c1,
  privilege    c2,
  admin_option c3
from
  sys.dba_sys_privs
where
  grantee not in ('SYS','SYSTEM', etc);
```

Search for any non-DBA roles that are granted with the WITH ADMIN OPTION. This check ensures that there are no customized roles that are granted to users using the WITH ADMIN OPTION. We need to query the ROLE_SYS_PRIVS view to get this information. To be accurate, we must filter out all of the installed roles that come with the standard Oracle9i software. This is the code:

Listing B3

```
select
  role,
  privilege,
  admin_option
from
  sys.role_sys_privs
where
  admin_option = 'YES'
and
  role not in
(
  'AQ_ADMINISTRATOR_ROLE',
  'CONNECT',
  'EXP_FULL_DATABASE',
  'IMP_FULL_DATABASE',
  'JAVADEBUGPRIV',
  'OEM_MONITOR',
  'OLAP_DBA',
  'RECOVERY_CATALOG_OWNER',
  'RESOURCE',
  'WKUSER'
)
```

Search for any non-DBA grantees that are granted a role with the WITH ADMIN OPTION. Here, we check the DBA_ROLE_PRIVS view for all roles that have been granted using the WITH ADMIN OPTION:

Listing B4

```
select
  grantee,
  granted_role,
  admin_option,
  default_role
from
  sys.dba_role_privs
where
  admin_option = 'YES'
and
  grantee not in ('SYS','SYSTEM', etc);
```

Donald Burleson has been a database administrator for 23 years and has written 14 database books and over 100 articles. He is editor in chief of Oracle Internals and runs Burleson Oracle Consulting.

TechRepublic Additional Resources and Version History

TechRepublic Additional Resources

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1. [Oracle's latest software focuses on enterprise application integration](#) (Article)
2. [How to use Oracle 10g Single-Sign-On with Microsoft .NET applications](#) (Article)
3. [Consolidating the IT Infrastructure](#) (White paper)
4. [Minimizing the Impact of the PeopleSoft/Oracle Consolidation](#) (White paper)
5. [Visualize your Oracle database with treemaps](#) (Download)

Version History

1.0 March 3, 2005

Converted previously published Builder newsletters into a downloadable PDF.

Request for Suggestions

The scripts in this download are just a few of the scripts Oracle DBAs use in their day-to-day tasks. What is your most important script for database maintenance? [Share it with the TechRepublic community and earn the respect of your peers.](#)