

3000Audit Tool

**The User Friendly Image Database Auditing Software
for Sarbanes-Oxley Compliance**

User Manual

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**Version 2.56
September, 2007**

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3000Audit Tool

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3000Audit Tool Features

The 3000Audit Tool is the first User Friendly Database Auditing product. It may be used to monitor who is updating any Image database record on your HP3000. The product uses Image Log files to gather the date, time, user name, before and after values of any dataset you need to audit. The auditing information is reformatted and stored in its own easy-to-access Audit Tool Image database.

The 3000Audit Tool was designed so that it can answer your users questions without the intervention of the IT department. List Screens and Reports allow your users to inquire as to what records have been updated by whom.

Benefits of the Audit Tool:

- Provides full data auditing compliance for Sarbanes-Oxley requirements.
- Added, Changed, and Deleted records are extracted from cryptic Image log files and stored in an easy to read Image database format for quick retrieval by your users.
- Standard List screen by key value, and standard Reports are provided.
- Custom Audit Trail reports can be developed using your report writer.
- User friendly field names - a table is available for you to assign a 'description' to your image field names. Instead of telling the user COSTARR(3) changed, the Audit Tool screen will tell the user 'Assembly Labor Cost'.
- Automates Image Log file administration. The 3000Audit Tool Utility automatically switches to a new Image log file, closes the current Image log file, processes the log and moves all the relevant data to the Audit Tool Image database.
- Selected fields, files and programs can be excluded from the audit trail process.
- Supports multiple data base groups and accounts

Frequently Asked Questions about Image Logging

Will Image Logging slow down our system?

Benchmarks have measured that Image logging requires virtually no overhead. A commonly quoted statistic is 1% more cpu time, but the processes is indistinguishable.

Isn't Image Logging difficult to administer?

You can begin Image Logging simply by entering 4 MPE commands. You need to disable and re-enable logging before and after your database capacity change process, and that's all. Because the 3000Audit Tool is designed for auditing purposes, and not rollforward/rollback recovery, the administration is simplified.

What types of changes are required to my application?

Absolutely no changes whatsoever. You will 'enable your database(s) for logging', and the HP operating system does the rest. The 3000 Audit Tool Utility program manages the Image log files for you.

New Enhancements

3000Audit Tool - Release 2.0 Enhancements

1) New option to remove redundant DBDELETE/DBPUT records.

Often in an application, records are deleted and re-added (DBDELETE followed by a DBPUT) instead of simply being updated (DBUPDATE). When this occurs, the image log file contains scores of entries. It lists all the fields that were in the record that were deleted, and all the fields in the record that were re-added.

To the user, it is rather daunting to view several deletes followed by several add's to figure out exactly what has changed. In addition, these records cause the ILFDB database to grow and consume disk space.

A new option UTIL.AUDIT.SUMMIT will remove all of the redundant records associated with this type of transactions. UTIL.AUDIT.SUMMIT looks at DBDELETE's immediately followed by DBPUT's, and if the field's value did not change, those records are eliminated.

The bottom line is that you remove redundant information, and are left with a smaller audit trail database containing more meaningful information.

2) Increased number of fields that can be excluded.

In release 1.0 you could exclude up to 50 datasets, programs or fields when extracting image log file information. The field exclusions have segregated whereby you can have up to 250 fields excluded, and continue to have up to 50 datasets and programs excluded.

3000Audit Tool Navigation

The purpose of this section is to describe how to enter information into the 3000Audit Tool programs UTIL.AUDIT.SUMMIT, LIST.AUDIT.SUMMIT, and REPORT.AUDIT.SUMMIT.

The 3000Audit Tool programs are in question and answer format. The program will ask you a question, you will respond and press return.

Exiting: To exit a program enter E for Exit. Entering E will also back you up to the previous prompt.

Defaults: A default is an automatic response provided by the computer when you press return. There are 2 different types of defaults:

- a) Date prompts default to the current date
- b) Prompts with default responses in parenthesis. For example:
 OPTION (1)?
 Pressing RETURN defaults to 1.
 OKAY TO UPDATE (Y)?
 Pressing RETURN defaults to Y.

Dates: Enter dates in month, day, year sequence. Dates may be entered as MMDDYY, MM/DD/YY, or MM-DD-YY. If you leave off the year portion of the date, the programs presume you want the current year. Years are expressed as 2 digits, not 4 digits. Enter zero for date 00/00/00 and 99 for date 99/99/99 -this gives you 'all' dates on file.

Output Options: The Output option prompt gives you the opportunity to route the display to your terminal or to a specific printer.

```
:RUN LIST.AUDIT.SUMMIT
```

```
List Audit Trail Database
```

```
ENTER DESIRED OUTPUT OPTION:
```

```
  0.  HOLD REPORT ON THE HP SYSTEM      1.  TERMINAL, 132 COLUMNS
  2.  ENTER A PRINTER NUMBER            3.  TERMINAL, 80 COLUMNS
  4.  A DISK FILE ON THE HP SYSTEM
OPTION (3)?
```

If you select Option Zero, the output is sent to device class LP.

If you select Option 1, the output is displayed on your screen in 132 column format. If your terminal set to 80 columns wide, the data in positions 80 to 132 may wrap to the next line.

If you select option 2, you are prompted for a PRINTER NUMBER? (Ldev number), and an output priority. The output priority defaults to 8 if you press return.

If you select option 3, the output is displayed on your screen.

If you select option 4, you are prompted for a DISK FILE NAME? The disk file name must adhere to normal HP3000 file name conventions.

Installation Instructions

- 1) Restore the files on to your system. Log on as MANAGER.SYS and enter the file equation:
- ```
FILE T;DEV=TAPE
```

Restore the tape by entering the command:

```
RESTORE *T;@.@.SUMMIT;SHOW;CREATE
```

Some of the relevant files included on your tape are:

|                       |                                                                       |
|-----------------------|-----------------------------------------------------------------------|
| ILFSCH.PUB.SUMMIT     | Image schema for ILFDB.LOGFILES where audit trail entries are stored. |
| QILFSCH.QUIZ.SUMMIT   | Quiz schema/dictionary file                                           |
| QILFSCHC.QUIZ.SUMMIT  | Compiled Quiz dictionary                                              |
| LOGUTL1.PUB.SUMMIT    | Log file extract utility                                              |
| LOGUTL2.PUB.SUMMIT    | Log file reformat utility                                             |
| UTIL.AUDIT.SUMMIT     | Audit Trail Utility to Manage Image Log Files                         |
| LIST.AUDIT.SUMMIT     | List Audit Trail                                                      |
| REPORT.AUDIT.SUMMIT   | Report Audit Trail                                                    |
| ILFDB.LOGFILES.SUMMIT | Example database                                                      |

- 2) Once the files have been restored, stream the SETUP job to grant the SUMMIT account the appropriate security and capabilities.

```
:STREAM SETUP.PUB.SUMMIT
```

The :STREAM will prompt you for the password(s) for MANAGER.SYS

Once in production, the 3000Audit Tool Utility launches a batch job to close the existing Image log file, reformat the data, write the data to the ILFDB.LOGFILES database and finally to open a new Image log file. The next two steps (if not already enabled) are to support the batch job that is launched.

- 3) You should still be logged on as MANAGER.SYS. We need to 'allow' the LOG command to be used. At the "Console" enter the following command.

```
:ALLOW @.@;COMMANDS=LOG
```

This command will also need to be added to your SYSSTART.PUB.SYS file. See 'considerations before going into production' for further information.

- 4) Ensure that the MPE capabilities of the MANAGER of the Account your application data bases reside in has OP capability. This is required to close an Image Log file and open a new one with the :CHANGELOG command.

```
:ALTUSER MANAGER.xxxxxx;CAP=+OP
```

- 5) Build the Image data base to store your Audit records in.

The records created in an Image Log File are substantially manipulated and reformatted before they are stored in an image data base (ILFDB.LOGFILES).

If you do not have Image Logging running presently, and you have a test data base area available, you may wish to try this in your test data base area before doing so in your production data base area. Not that you will be introducing risk, but its a nice way to practice the setup since you need exclusive data base access in a later step. If you intend to turn on Image Logging in your production environment, please read the 'before you go into production considerations' in this manual.

You will now log on to the Account your application database resides in.

- a) Log on to the Account your application data base resides in.

```
ie. :HELLO MANAGER.ACCOUNT
```

- b) The Image database ILFDB that will be retaining your audit trail information is stored in a group called LOGFILES. Create the LOGFILES group by entering the following:

```
:NEWGROUP LOGFILES;ACCESS=(R,W,A,L,X,S:ANY)
:CHGROUP LOGFILES
```

- c) Copy the schema file ILFSCH.PUB.SUMMIT into this group.

```
ie. :COPY ILFSCH.PUB.SUMMIT,ILFSCH
```

- d) Set the file equation: :FILE DBSTEXT=ILFSCH



group. These are just default values we use to ease the setup. The 3000Audit Tool can support the naming convention you wish.

Now lets begin. We recommend you do this step at the 'console' because you receive nice 'logging process started' messages at the console. Your users can be on the system while you perform this step.

\*\* You should still be logged on in the LOGFILES group. \*\*

Create Log Id and Log File

```
:GETLOG ORDLG;LOG=ORDLG001,DISC;AUTO (that's a comma before DISC)
:BUILD ORDLG001;CODE=LOG;DISC=2000000
```

(yes that's two million records, but it does not use that much space, its a maximum we are setting)

```
:LOG ORDLG,START
```

Repeat these 3 MPE commands (GETLOG, BUILD, LOG) for the other Log Id's (data bases) you wish to log. If you are setting this up initially, you may wish to only start with one or two data bases.

#### 7) Enable the Data Base for Logging

To enable the data base for logging, your users MAY NOT be accessing the data base. You may have to schedule this step after hours.

a) Log on to the group your data base resides in. For example:

```
:CHGROUP DATA10
```

b) See if anyone is accessing the data base. For example:

```
:LISTF ORDERS,8

FILE: ORDERS.DATA10.ACCOUNT
0 Accessors
```

c) Now lets run DBUTIL to set our Log Id and enable for logging

```
:RUN DBUTIL.PUB.SYS
```

```
>> SET ORDERS LOGID=ORDLG
```

```

Password: <-- press return to the password prompt
>> ENABLE ORDERS FOR LOGGING
>> ENABLE ORDERS FOR FORCESESSION (mpe/ix 6.5 and above)
>> EXIT

```

(fyi: the FORCESESSION option captures the session name on stream jobs for better visibility as to what stream jobs are updating. Only available if you are running mpe/ix 6.5 and above)

Congratulations, from this point forward any updates that happen to this database will be written to the Image Log file you built.

For the next steps, you enter the database information into the Summit 3000Audit Tool Utility.

8) Enter the data base names being logged in UTIL.AUDIT.SUMMIT.

```
:RUN UTIL.AUDIT.SUMMIT
```

Choose option 3.

You will now enter the data base name, group, and log id for the database you just enabled logging on. For Example:

```

DATA BASE NAME? ORDERS
GROUP NAME? DATA10
LOG IG? ORDLG

```

Repeat for each database you enabled logging on.

9) Define your Job Card in the UTIL.AUDIT.SUMMIT program.

The process to create a new image log file, and refine the the image logs into useable data runs as a batch job.

All you need to do is specify the passwords for the user (MANAGER) and Account your application data bases reside in. An example of doing so is listed below.

```

THE CURRENT JOB CARD IS:
!JOB AUDITJOB,MANAGER/PASSWORD.ACCOUNT,LOGFILES;HIPRI
DO YOU WISH TO CHANGE THE JOB CARD (Y)? Y *

ENTER THE NEW JOB CARD
!JOB AUDITJOB,MANAGER/PASSWORD.ACCOUNT,LOGFILES;HIPRI
!JOB AUDITJOB,MANAGER/STAYOUT.TEST,LOGFILES;HIPRI *

** JOB CARD UPDATED **

```

This is not like a 'redo', you have to type every character of your job card.

Your installation is now complete.

We recommend you execute UTIL.AUDIT.SUMMIT option 1 each evening to capture this data and open a new image log file.

For example

```
!JOB AUDIT1,MANAGER/STAYOUT.TEST
!RUN UTIL.AUDIT.SUMMIT
1
!EOJ
```

Be aware that running UTIL.AUDIT.SUMMIT option 1, creates JCL and :STREAMs a job. This job performs the Audit Tool extract and reformat processes and writes the results to the ILFDB.LOGFILES. You can view the JCL created by :PRINTing the file AUDITJOB.LOGFILES.

If you are new to Image Logging, please refer to the section 'Before Going into Production', for considerations about the Image Logging process.

## Installation Example

In this example the LOGFILES group and ILFDB are set up in the SUMMIT Account. You will be using the Account your application databases reside instead of the SUMMIT Account.

```
:ALLOW @. @;COMMANDS=LOG <<-- Insure LOG command is enabled
:LISTUSER MANAGER.SUMMIT <<-- Check for OP capability

USER: MANAGER.SUMMIT

HOME GROUP: PUB PASSWORD: **
MAX PRI : 150 LOC ATTR: $00000000
LOGON CNT : 1
CAP: AM,AL,GL,OP,ND,SF,BA,IA,PM,MR,DS,PH

:HELLO MANAGER.SUMMIT <<-- Log on to the Account your
 <<-- application databases will reside

:NEWGROUP LOGFILES;ACCESS=(R,W,A,L,X,S:ANY) <<-- create new group
:CHGROUP LOGFILES

:COPY ILFSCH.PUB.SUMMIT,ILFSCH <<-- copy schema from SUMMIT Account

:FILE DBSTEXT=ILFSCH
:RUN DBSCHEMA.PUB.SYS;PARM=3
```

PAGE 1            HEWLETT-PACKARD 30391C.07.18 TurboIMAGE/3000: DBSCHEMA  
 THU, JUN 16, 2005, 10:57 AM (C) HEWLETT-PACKARD CO. 1987

\$CONTROL NOLIST, TABLE, ROOT, BLOCKMAX=2048

| DATA SET<br>NAME | TYPE | FLD<br>CNT | PT<br>CT | ENTR<br>LGTH | MED<br>REC | MAXIMUM<br>CAPACITY | BLK<br>FAC | BLK<br>LGTH | DISC<br>SPACE |
|------------------|------|------------|----------|--------------|------------|---------------------|------------|-------------|---------------|
| ILCOMIN          | M    | 3          | 0        | 42           | 47         | 501                 | 38         | 1789        | 208           |
| ILFLD            | M    | 4          | 0        | 22           | 27         | 5001                | 52         | 1408        | 1072          |
| ILPROG           | M    | 4          | 0        | 33           | 38         | 1001                | 47         | 1789        | 320           |
| ILDBNAMK         | A    | 1          | 1        | 4            | 15         | 1001                | 127        | 1913        | 128           |
| ILDSNK           | A    | 1          | 1        | 8            | 19         | 1001                | 94         | 1792        | 160           |
| ILFKEY1K         | A    | 1          | 1        | 12           | 23         | 3031                | 61         | 1407        | 560           |
| ILFKEY2K         | A    | 1          | 1        | 9            | 20         | 1031                | 102        | 2047        | 192           |
| ILFUSERK         | A    | 1          | 1        | 4            | 15         | 1031                | 127        | 1913        | 144           |
| ILFDSETK         | A    | 1          | 1        | 8            | 19         | 1031                | 94         | 1792        | 160           |
| ILFDATEK         | A    | 1          | 1        | 4            | 15         | 2001                | 127        | 1913        | 256           |
| ILDBN            | D    | 9          | 1        | 42           | 46         | 1025                | 25         | 1152        | 384           |
| ILDSN            | D    | 5          | 1        | 32           | 36         | 1014                | 39         | 1407        | 288           |
| ILFIL            | D    | 17         | 5        | 99           | 119        | 5010                | 15         | 1786        | 4688          |

TOTAL DISC SECTORS INCLUDING ROOT: 8592

NUMBER OF ERROR MESSAGES: 0  
 ITEM NAME COUNT: 42            DATA SET COUNT: 13  
 ROOT LENGTH: 1716            BUFFER LENGTH: 2047            TRAILER LENGTH: 256

ROOT FILE ILFDB    CREATED.

END OF PROGRAM  
 :RUN DBUTIL.PUB.SYS,CREATE

Database name:ILFDB  
 Database ILFDB.LOGFILES.SUMMIT has been CREATED.

END OF PROGRAM  
 :  
 :GETLOG UISLG;LOG=UISLG001,DISC;AUTO            <<-- create a LOG ID  
 :BUILD UISLG001;CODE=LOG;DISC=2000000           <<-- build an Image Log File  
 :LOG UISLG,START                                <<-- Start the LOG ID  
 :10:59/59/User logging process UISLG           is running (ulogmsg 10)

:CHGROUP DATABASE  
 :LISTF UISDB,8  
 \*\*\*\*\*  
 FILE: UISDB.DATABASE.SUMMIT  
 0 Accessors

:RUN DBUTIL.PUB.SYS

HP30391C.07.10 TurboIMAGE/XL:    DBUTIL (C) COPYRIGHT HEWLETT-PACKARD  
 COMPANY 1987

>>SET UISDB LOGID=UISLG  
 Password:  
  
 Logid:    UISLG        is valid.  
 password is correct.  
>>ENABLE UISDB FOR LOGGING  
 WARNING: Database modified and not DBSTORED.

Logging is enabled.  
 >>ENABLE UISDB FOR FORCESESSION  
  
 Session/Job name will be copied to Userident in DBOPEN  
 >>EXIT

>>EXIT

END OF PROGRAM  
 :  
 :RUN UTIL.AUDIT.SUMMIT

Audit Trail Utility to Manage Image Log Files (v2.51)

AUDIT TRAIL UTILITY MENU:

1. EXECUTE LOGFILE COPY PROCESS TO COPY IMAGE LOG FILES TO ILFDB
2. EDIT JOB CARD FOR LOGFILE COPY PROCESS
3. EDIT/LIST TABLE OF DATA BASES THAT ARE BEING LOGGED
4. EDIT/LIST FIELDS YOU \*DO NOT\* WISH TO RETAIN AN AUDIT TRAIL ON.
5. EDIT/LIST DATASETS YOU \*DO NOT\* WISH TO RETAIN AN AUDIT TRAIL ON.
6. EDIT/LIST PROGRAMS YOU \*DO NOT\* WISH TO RETAIN AN AUDIT TRAIL ON.
7. EDIT TABLE OF FIELD NAME DESCRIPTIONS
8. DELETE LOG FILE RECORDS FROM ILFDB
9. DELETE REDUNDANT ADD/DELETE TRANSACTIONS

OPTION(1)? 3 <--- Use option 3 to define what database  
has Image Logging turned on.

| DATA BASE NAME                                                     | LOG ID    | LOG FILE        |
|--------------------------------------------------------------------|-----------|-----------------|
| -----                                                              | -----     | -----           |
| ** THERE ARE NO ENTRIES IN THE TABLE OF DATA BASES BEING LOGGED ** |           |                 |
| DATA BASE NAME? UISDB                                              | *         |                 |
| ENTER THE 'GROUP' THAT UISDB RESIDES IN.                           |           |                 |
| GROUP NAME ( )?                                                    | DATABASE* |                 |
| DATA BASE PASSWORD? ASK                                            | *         |                 |
| LOG FILE NAME PREFIX (UISLG )?                                     | UISLG     | *               |
| WHAT GROUP DOES THE LOG FILE RESIDE IN (LOGFILES)?                 | LOGFILES* |                 |
| ** RECORD ADDED **                                                 |           |                 |
| DATA BASE NAME                                                     | LOG ID    | LOG FILE        |
| -----                                                              | -----     | -----           |
| UISDB .DATABASE                                                    | UISLG     | UISLG .LOGFILES |
| DATA BASE NAME? E                                                  | *         |                 |

\*\* THERE ARE NO ENTRIES IN THE TABLE OF DATA BASES BEING LOGGED \*\*

DATA BASE NAME? UISDB \*

ENTER THE 'GROUP' THAT UISDB RESIDES IN.  
GROUP NAME ( )? DATABASE\*

DATA BASE PASSWORD? ASK \*

LOG FILE NAME PREFIX (UISLG )? UISLG \*

WHAT GROUP DOES THE LOG FILE RESIDE IN (LOGFILES)? LOGFILES\*

\*\* RECORD ADDED \*\*

| DATA BASE NAME  | LOG ID | LOG FILE        |
|-----------------|--------|-----------------|
| -----           | -----  | -----           |
| UISDB .DATABASE | UISLG  | UISLG .LOGFILES |

DATA BASE NAME? E \*

AUDIT TRAIL UTILITY MENU:

1. EXECUTE LOGFILE COPY PROCESS TO COPY IMAGE LOG FILES TO ILFDB
2. EDIT JOB CARD FOR LOGFILE COPY PROCESS
3. EDIT/LIST TABLE OF DATA BASES THAT ARE BEING LOGGED
4. EDIT/LIST FIELDS YOU \*DO NOT\* WISH TO RETAIN AN AUDIT TRAIL ON.
5. EDIT/LIST DATASETS YOU \*DO NOT\* WISH TO RETAIN AN AUDIT TRAIL ON.
6. EDIT/LIST PROGRAMS YOU \*DO NOT\* WISH TO RETAIN AN AUDIT TRAIL ON.
7. EDIT TABLE OF FIELD NAME DESCRIPTIONS
8. DELETE LOG FILE RECORDS FROM ILFDB
9. DELETE REDUNDANT ADD/DELETE TRANSACTIONS

OPTION(1)? E

end of installation example

## Considerations Before Going Into Production with Image Logging.

This section is designed for HP3000 users that are new to Image Logging. If you already have Image Logging turned on in your production environment, you may wish to skip over this section.

There are two primary considerations you must be aware of once your data bases are enabled.

- 1) You must "restart" logging after you Boot your system
- 2) You must "enable your database for logging" after a data base capacity change

### Booting Your System

If you Boot your system and fail to restart logging, then the data bases will not be available for access. In application, your users will receive an ambiguous DBOPEN error.

In reality however, the error is this:

```
:RUN QUERY.PUB.SYS

>BASE=ORDERS.DATA10
PASSWORD = >>KEEPOUT
MODE = >>1
TurboIMAGE Error Message:
LOGGING ENABLED AND NO LOG PROCESS RUNNING <--- error if not RESTARTED

>EXIT
```

To prevent this from happening, you will need to perform  
:LOG xxxxx,RESTART after you reboot your system. (xxxxx=logid)

Most companies utilize the file SYSSTART.PUB.SYS to execute a few select MPE commands after their system boots. A sample SYSSTART file is displayed below:

```
:print sysstart.pub.sys

STARTUP
SPOOLER LP;START
STREAMS 10
ALLOW @.@;COMMANDS=REPLY,SPOOLER,ABORTIO
```

You will need to add :LOG xxxxx,RESTART commands and 'allow' the log command after you reboot your system. Our revised SYSSTART.PUB.SYS file would look something like this.

```
STARTUP
```

```

SPOOLER LP;START
STREAMS 10
ALLOW @.:@;COMMANDS=REPLY,SPOOLER,ABORTIO
ALLOW @.:@;COMMANDS=LOG <<-- Add to SYSSTART
LOG ORDLG,RESTART <<-- Add to SYSSTART

```

### Changes to your data base capacity job

Adager and DBGeneral both recognize that data bases have logging enabled. They handle Image logging slightly differently.

#### 1) Adager

If you use Adager to change your dataset capacities, Adager will automatically perform a "Disable xxxDB for Logging", command once you start.

Example of Adager Message:

```

WARNING: Database currently ENABLED for LOGGING. After
transforming it, I will DISABLE it for logging.
(I will leave the LOGID and the logging PASSWORD
unchanged).

```

After the Adager changes are finished, you must execute a single :DBUTIL command to re-enable logging. For example:

```

:DBUTIL
>>ENABLE ORDERS FOR LOGGING,FORCESESSION
WARNING: Database modified and not DBSTORED.

Logging is enabled.
>>EXIT

```

#### 2) DBGeneral

If you use DBGeneral to change your dataset capacities, DBGeneral will not execute until you disable your database for logging.

Example of DBGeneral Message:

```

Option 3.3 --- Change Master Set Capacity

SOURCE DATABASE: ORDERS.FDATABAS

ERROR ! Base is enabled for logging.

```

```

Use of this option will make recovery from existing log files
impossible. Please stop logging before re-invoking this option.
Following successful completion of this option, DBSTORE the base
and start a new logging cycle.

```

```

Option selected (/ ? / MPE / Menu / Next / End) :

```

Therefore before you start your DBGeneral process, run :DBUTIL to disable logging. For example:

```
:DBUTIL
HP30391C.09.05 TurboIMAGE/XL: DBUTIL (C) COPYRIGHT HEWLETT-PACKARD

>>DISABLE ORDERS FOR LOGGING

Logging is disabled.
>>EXIT
```

After logging is disabled, perform your database capacity change, then execute :DBUTIL to turn logging back on.

```
:DBUTIL
HP30391C.09.05 TurboIMAGE/XL: DBUTIL (C) COPYRIGHT HEWLETT-PACKARD

>>ENABLE ORDERS FOR LOGGING,FORCESESSION
WARNING: Database modified and not DBSTORED.

Logging is enabled.
>>EXIT
```

A good example of a job stream would be as follows:

```
!JOB DBJOB,MANAGER.ACCOUNT,DATA10
!SETVAR HPAUTOCONT TRUE
!COMMENT
!COMMENT ----- BEGIN ORDERS.MDATABAS -----
!IF FINFO('ORDERS.MDATABAS',61) < 1 THEN
!DBUTIL
DISABLE ORDERS FOR LOGGING
E
!RUN DBGENRL.PUB.BRADMARK
ASK
3.2
ORDERS.MDATABAS
ASK
END
!DBUTIL
ENABLE ORDERS FOR LOGGING,FORCESESSION
E
!ENDIF
!COMMENT ----- END ORDERS.MDATABAS -----
```

This job stream turns on AUTO CONTINUE (line 2) to keep the job running if there are any errors. It performs an IF FINFO 61 which checks the number of users accessing the data base. Only if there are zero accessors is the DBUTIL disable, DBGENRL, and DBUTIL enable executed.

### 3) Products other than Adager or DBGeneral

If you use any product that makes a structural change to your data base, that you will need to disable, and then re-enable logging. Following the procedure as described for the DBGeneral software should be satisfactory.

Other considerations before going into production:

#### Removing Image Logging from your Test Data base

If you initially set up image logging on your test data base(s), and now wish to install it on your production data bases, you will need to consider removing logging from your test data base.

Why? Because the log id (ie. ORDLG) is attached to your test data base, and you shouldn't assign the same logid to your production data base. Your choice is to use a different log Id (ie. ORDL2 instead of ORDLG), or preferably remove logging from your test data base.

```
:HELLO MANAGER.TEST
```

```
:RUN DBUTIL.PUB.SYS
```

```
>>DISABLE ORDERS FOR LOGGING <--- turns of logging on this database
 Logging is disabled.
>>SET ORDERS LOGID=
 Logid changed.
>>EXIT
```

```
:LOG ORDLG,STOP <--- stops the logging process
```

```
:RELLOG ORDLG <--- removes log id from your system
```

## Image Logging Commands

### SHOWLOGSTATUS Command

To find out the status of image logging on your system, use the MPE command :SHOWLOGSTATUS

| LOGID | CHANGE | AUTO | USERS | STATE    | CUR REC | MAX REC | % USED | CUR FSI |
|-------|--------|------|-------|----------|---------|---------|--------|---------|
| PAYLG | YES    | YES  | 0     | INACTIVE | 1       | 2000000 | 0%     | 31      |
| VNDLG | YES    | YES  | 2     | INACTIVE | 17      | 2000000 | 0%     | 30      |
| PURLG | YES    | YES  | 2     | INACTIVE | 23      | 2000000 | 0%     | 23      |
| ORDLG | YES    | YES  | 5     | INACTIVE | 323     | 2000000 | 0%     | 23      |
| GLLG  | YES    | YES  | 0     | INACTIVE | 1       | 2000000 | 0%     | 19      |
| TABLG | YES    | YES  | 0     | INACTIVE | 5       | 2000000 | 0%     | 19      |
| FINLG | YES    | YES  | 1     | INACTIVE | 1       | 2000000 | 0%     | 19      |

The SHOWLOGSTATUS shows all of the Log Id's that you set up with the GETLOG command. The CUR REC column shows you how many log file records you have accumulated. (Note: the state is always INACTIVE - this is normal).

### LISTLOG Command

The :LISTLOG command is useful to find what the current log file is that is being written to.

```
:LISTLOG
```

| LOGID | CREATOR      | CHANGE | AUTO | CURRENT LOG FILE       |
|-------|--------------|--------|------|------------------------|
| FINLG | MANAGER.PROD | YES    | YES  | FINLG035.LOGFILES.PROD |
| TABLG | MANAGER.PROD | YES    | YES  | TABLG025.LOGFILES.PROD |
| GLLG  | MANAGER.PROD | YES    | YES  | GLLG034.LOGFILES.PROD  |
| ORDLG | MANAGER.PROD | YES    | YES  | ORDLG039.LOGFILES.PROD |
| PURLG | MANAGER.PROD | YES    | YES  | PURLG039.LOGFILES.PROD |
| VNDLG | MANAGER.PROD | YES    | YES  | VNDLG035.LOGFILES.PROD |
| PAYLG | MANAGER.PROD | YES    | YES  | PAYLG047.LOGFILES.PROD |

Comparing LISTLOG to SHOWLOGSTATUS will tell you if any LOGID's did not get 'restarted' after a reboot of your HP3000.

### To find out if a data base is being logged

There is only one way to find out if a data base has been 'enabled for logging'. You must go into DBUTIL and do the SHOW xxx LOGININFO command. Below is an example

```
:CHGROUP MDTABAS
:RUN DBUTIL.PUB.SYS
```

```
HP30391C.09.05 TurboIMAGE/XL: DBUTIL (C) COPYRIGHT HEWLETT-PACKARD
```

```
>>SHOW ORDERS LOGININFO <<-- SHOW LOGININFO
 For database ORDERS
```

```
Autodefer is disabled.
Rollback recovery is disabled.
Recovery is disabled.
ILR is disabled.
Logging is enabled. <<----- LOGGING HAS BEEN ENABLED
```

```
Logid: ORDLG is valid. <<----- LOGID ASSIGNED
 password is correct.
```

```
XM log set : default XM user log set
 for volume set PROD_SET
```

```
XM log set type : circular
XM log set size : 32 megabytes
>>EXIT
```

### Permanently Removing Image Logging

To remove image logging on your data base, go into DBUTIL and perform the DISABLE xxxx FOR LOGGING and the SET xxxx LOGID commands. See the example below:

```
:RUN DBUTIL.PUB.SYS

>>DISABLE ORDERS FOR LOGGING <--- turns off logging on this database
 Logging is disabled.
>>SET ORDERS LOGID=
 Logid changed.
>>EXIT
```

If no more data bases are accessing this Log Id, use the RELLOG command to remove the Log Id from your system. (The RELLOG command is the opposite of the GETLOG command).

```
:LOG ORDLG,STOP <-- stop the logging process
:RELLOG ORDLG <-- removes log id from your system
```

## Audit Trail Utility to Manage Image Log Files UTIL.AUDIT.SUMMIT

The primary purpose of the UTIL.AUDIT.SUMMIT is to maintain a set of tables which customize how you wish to process the image logging data that is gathering on your system.

The primary tables are:

- a) Which data bases are being logged
- b) What datasets, fields and programs not to retain logging information on.
- c) Descriptions of the fields in the application databases

Using these tables, UTIL.AUDIT.SUMMIT constructs a job stream. The job stream executes two programs that extract data from the image log files, reformats and attaches additional data, and writes the audit trail information to the ILFDB for easy retrieval by your users.

We recommend that you run UTIL.AUDIT.SUMMIT option 1 to launch the batch job each evening. Your users can safely be on the system while the batch job runs. If it is necessary to access the information on a more frequent basis, you can stream the job during the day (see scheduling considerations).

The batch job launched by UTIL.AUDIT.SUMMIT automates all of the log file administration by performing the following steps:

- 1) Searches the LOGFILES (or other group you specify) for Image Log files to read.
- 2) Performs a :CHANGELOG command on the image log file to close the existing log file and open a new one. For example, if your current image log file is ORDLG008, the :CHANGELOG will create ORDLG009.
- 3) Executes programs LOGUTL1.PUB.SUMMIT and LOGUTL2.PUB.SUMMIT to extract data from the log file and write the reformatted data to the ILFIL of ILFDB.
- 4) Purges the old Image Log file (optional).

The stream job file that is created is AUDITJOB.LOGFILES. This file is purged and re-created with every run of UTIL.AUDIT.SUMMIT option 1.

Options 2 and 3, which set up the !JOB card and what data bases are enabled for logging, should be performed prior to streaming the batch job with option 1.

Other purposes of UTIL.AUDIT.SUMMIT, is to define what programs, datasets, or fields you do not need to retain information on, assign 'friendly' field name descriptions to the image field names, and to delete old or redundant records from the Audit trail database ILFDB.LOGFILES.

## Prompts

Upon entering :RUN UTIL.AUDIT.SUMMIT, the following menu is displayed:

AUDIT TRAIL UTILITY MENU:

1. EXECUTE LOGFILE COPY PROCESS TO COPY IMAGE LOG FILE TO ILFDB
2. EDIT JOB CARD FOR LOGFILE COPY PROCESS
3. EDIT/LIST TABLE OF DATA BASES THAT ARE BEING LOGGED
4. EDIT/LIST FIELDS YOU \*DO NOT\* WISH TO RETAIN AN AUDIT TRAIL ON.
5. EDIT/LIST DATASETS YOU \*DO NOT\* WISH TO RETAIN AN AUDIT TRAIL ON.
6. EDIT/LIST PROGRAMS YOU \*DO NOT\* WISH TO RETAIN AN AUDIT TRAIL ON.
7. EDIT TABLE OF FIELD NAME DESCRIPTIONS
8. DELETE LOG FILE RECORDS FROM ILFDB
9. DELETE REDUNDANT ADD/DELETE TRANSACTIONS

OPTION(1)?

### Option 1

If you select option 1 to launch the stream job, the following prompts appear:

```
THIS WILL CREATE A JOB STREAM TO OPEN NEW IMAGE LOG FILES AND
THE CONTENTS OF THE OLD IMAGE LOG FILES TO THE ILFDB.LOGFILES
PURGE THE IMAGE LOG FILES WHEN FINISHED COPYING (Y)? *
```

We recommend that you purge the image log file(s) after you copy them to ILFDB. The 3000Audit Tool does track what the last Image log files has been copied to ILFDB, to prevent duplicates. However, since most users do not intend to use their logfiles for rollback, they are of no value once the information has been extracted and written to ILFDB.

After you respond to the prompt, the tables that define what databases are being logged, and what fields/files/programs should be excluded are read. A batch job file AUDITJOB.LOGFILES is built, and then streamed.

### Scheduling Considerations for the Nightly Batch Job

Be aware that to obtain all of auditing information out of an image log file, it is best that the 'dbopen' and 'dbclose' records for a users session appear in the same log file. In other words, its best to run the UTIL.AUDIT.SUMMIT program option 1 (close existing log file and open new log file) after your users have gone home and logged off. That's why we recommend you run UTIL.AUDIT.SUMMIT each evening.

Secondly, the Image log file extract programs have a finite number of records that they can process. This is because of the table limits and output file limits in the programs. Its not uncommon

to collect tens if not hundreds of thousands of image log file records in a day. If you were to run UTIL.AUDIT.SUMMIT each week, instead of each day, there is a chance that the log file extract programs could not extract and retain all of the data you have accumulated.

Another scheduling consideration is to try to run UTIL.AUDIT.SUMMIT option 1, before any database maintenance such as repacking. The image log files contain 'image record numbers'. The record numbers are used to retrieve the original database record. If you do a capacity change on an Image master, or repack a detail dataset the Image record numbers are re-hashed (changed). This can cause the log file extract programs to pull data from a completely different record instead of the original record. Therefore, try to run the nightly UTIL.AUDIT.SUMMIT option 1, before you do an Image master capacity change, or repack a detail dataset.

### Option 2

Option 2 is used to build the !JOB card used by the stream job launched by option 1. You should execute this step when you initially set up the utility. An example of changing the !JOB card is displayed below.

```
THE CURRENT JOB CARD IS:
!JOB AUDITJOB,MANAGER/PASSWORD.ACCOUNT,LOGFILES;HIPRI
DO YOU WISH TO CHANGE THE JOB CARD (Y)? Y *
```

```
ENTER THE NEW JOB CARD
!JOB AUDITJOB,MANAGER/PASSWORD.ACCOUNT,LOGFILES;HIPRI
!JOB AUDITJOB,MANAGER/FRED.TEST,LOGFILES;HIPRI
*
```

```
** JOB CARD UPDATED **
```

Change the ACCOUNT to the Account the LOGFILES group resides in. Add the appropriate Account and/or User passwords.

Be aware that this is not like a 'redo' function. You must type every character of the !JOB card.

### Option 3

Option 3 is used to store the data base names, Groups, Log Id's, and Log file names used by the stream job launched by option 1. These are the database names that are 'enabled for logging'.

You should execute this step when you initially set up the utility,

or when you enable additional data bases for logging. This is described in more detail in the installation instruction section of this manual.

An example of adding entries to this table is displayed below.

```
DATA BASE NAME? ORDERS *
ENTER THE 'GROUP' THAT ORDERS RESIDES IN.
GROUP NAME ()? DATA10 *
DATABASE PASSWORD? KEEPOUT
```

The database is opened and the Log Id of the database is obtained.

```
LOG FILE NAME PREFIX (ORDLG)? *
The 'log file name prefix' is the Image Log file associated with
this Log Id. For example ORDLG001.LOGFILES, was Built to hold
the Image log file records for Log Id ORDLG. This prompt is asking
for the file name (less the numbers at the end of the log file)

WHAT GROUP DOES THE LOG FILE RESIDE IN (LOGFILES)? *
Enter the Group the log file resides in. The default is the
LOGFILES group where the ILFDB resides.
```

| DATA BASE NAME | LOG ID | LOG FILE       |
|----------------|--------|----------------|
| -----          | -----  | -----          |
| ORDERS.DATA10  | ORDLG  | ORDLG.LOGFILES |

Option 4

Option 4 is used to exclude selected fields from the ILFDB database. In order to curtail the number of records accumulating in your ILFDB database, you are given the option of excluding selected fields captured in the Image Log files. The field names are the 'Image' field names.

In the example below, we are excluding the field POPRT that is updated when the user prints a purchase order.

```
ENTER THE NAME OF THE FIELD TO EXCLUDE? POPRT *

WHAT DATABASE NAME DOES THIS FIELD RESIDE IN?
FOR EXAMPLE 'ORDERS'.
DATA BASE NAME? PURDB *

** FIELD ADDED **

PRESS RETURN TO CONTINUE.... *
```

Option 5

Option 5 is used to skip over the log records of certain datasets (files) in the database you are logging. This allows you to skip over datasets whose changes are of no interest to audit, and more importantly, curtail the number of records accumulating in your ILFDB database.

In the example below, we are excluding any updates to the dataset INVFIL from being retained in the ILFDB database.

```
ENTER THE NAME OF THE DATASET TO EXCLUDE? INVFIL *
WHAT DATABASE NAME DOES THIS DATASET RESIDE IN?
 FOR EXAMPLE 'ORDERS'.
DATA BASE NAME? ORDERS *

** DATASET ADDED **

PRESS RETURN TO CONTINUE.... *
```

Option 6

Option 6 is used to exclude selected programs from the ILFDB database. In order to curtail the number of records accumulating in your ILFDB database, you are given the option of excluding selected programs captured in the Image log files.

In many applications there are nightly batch processes that make a large amount of database updates and have little importance from an audit trail point of view. This would be the appropriate application for excluding this program.

In the example below, we are excluding any updates made by QTP from accumulating in the ILFDB database.

```
ENTER THE NAME OF THE PROGRAM TO EXCLUDE.
THE PROGRAM NAME SHOULD BE FULLY QUALIFIED TO INCLUDE THE
GROUP AND ACCOUNT. FOR EXAMPLE: QUERY.PUB.SYS

PROGRAM NAME? QTP.PH729C8.COGNOS *

WHAT DATABASE NAME DOES THIS PROGRAM UPDATE?
IF THE PROGRAM UPDATES MORE THAN 1 DATABASE OR YOU DO NOT KNOW - PRESS
RETURN
 FOR EXAMPLE 'ORDERS'.
DATA BASE NAME? *

** PROGRAM ADDED **
```

PRESS RETURN TO CONTINUE.... \*

If the application command or program entered only updates one data base enter the data base name here. Pressing return if you do not know is fine; it will look for this program when scanning all log files.

HINT: If you use a common database update tool such as QUERY, QTP, or SUPRTOOL, you probably encounter situations where there are 'some' updates you wish to capture, and some updates you wish to exclude. We recommend that you copy the program to exclude to a new program name. For example, copy QTP.PH729C8.COGNOS to QTP2.PH729C8.COGNOS. Enter QTP2 into the table of programs to exclude. Then update your batch process to :RUN QTP2 instead of QTP. The QTP2 updates will not be written to the ILFDB database.ou

Option 7

Option 7 is used to maintain a large table that maps application image field names, to a 'field description'. The field description is what appears on the 3000Audit Tool inquiries and reports.

The table is also used to define which image fields are dates so that they are reformatted into a more user friendly MM/DD/YY format, instead of YYYYMMDD or another date format.

OPTION(1)? 7

IMAGE FIELD NAME? DLT \*

| FIELD NAME | FIELD DESCRIPTION |
|------------|-------------------|
| -----      | -----             |
| DLT        | DATE OF LAST TRAN |

WOULD YOU LIKE TO:

1. CHANGE THE DESCRIPTION OF THIS FIELD
2. DELETE THIS ENTRY

OPTION(1)? 1

NEW FIELD DESCRIPTION? DATE OF LAST TRANSACTION\*

\*\* FIELD DESCRIPTION TABLE UPDATED \*\*

IMAGE FIELD NAME? E \*

Option 8

Option 8 deletes records from the ILFIL of ILFDB. This is to

remove old or unwanted records from ILFIL. The purge routine allows you to delete records on or before a given date, records created by a selected program, or records for a specific dataset.

An example of this process is listed below:

```
OPTION(1)? 8
PURGE RECORDS ON OR BEFORE DATE? 6/20/04 *
DATASET NAME (ALL)? *
PROGRAM NAME (ALL)? QTP *
** 24428 Records DELETED **
```

### Option 9

Option 9 is used to delete redundant DBDELETE/DBPUT records from the ILFIL of ILFDB. The utility finds all of the DBDELETE records executed within the date range entered. Then it searches to see if there is a DBPUT record that ocured at the same date and time for the same key. If the old and new field values are the same, then both the DBDELETE and DBPUT records are deleted from ILFDB.

Identical DBDELETES and DBPUTS are used in circumstances where the program deletes all of the existing records and re-adds them. This process, which is fairly common in many applications, greatly increases the number of ILFIL records on the system, and removes unnecessary information from the audit trail function.

An example of this prompts is listed below:

```
OPTION(1)? 9
REMOVE REDUNDANT DBPUT/DBDELETE RECORDS
BEGINNING DATE? 8/6/04 *
ENDING DATE? 8/13/04 *
DATASET NAME (ALL)? *
```

The purpose of the date prompts is for performance reasons. For example, If you run UTIL.AUDIT.SUMMIT option 9 every weekend, there is no reason to continue to review the thousands of DBDELETE records for redundant entries from prior weeks or months.

The dataset name prompt will allow you to specify specific datasets to remove redundant entries from, or all datasets.

## List Audit Trail (LIST.AUDIT.SUMMIT)

This program is used to list the adds/changes/deletes made to the application data bases that are enabled for logging and set up in UTIL.AUDIT.SUMMIT option 3. The LIST program prompts the user for a key value. An example of a key value would be a part number, order number, lot number, etc. This is the value stored in the ILFKEY1 of the ILFIL dataset.

The ILKEY1 is the first key field in the dataset being logged. In a majority of applications, this provides an excellent lookup by key. It is possible to assign a 2nd key (ILFKEY2) which may provide a more optimum lookup in your environment. Contact Summit Systems for details on how to set this up.

The LIST.AUDIT.SUMMIT command has two formats. If you run the LIST.AUDIT.SUMMIT to a printer or a 132 column terminal, there is much more data displayed than the 80 column terminal display.

## Prompts

```
:RUN LIST.AUDIT.SUMMIT
```

Displays output options.  
OPTION (3)?

```
(ENTER ? TO FILTER)
ENTER PART, DOCUMENT, OR OTHER VALUE TO INQUIRE UPON?
```

Enter a 'key' value to inquire upon. An example of a key value would be a part number, work order number, sales order number, purchase order number, or other value that is a 'key' in the application database.

A list of all changes made to the key entered will be displayed. If the record is identified as a sales order, purchase order, or work order, the documents records will be displayed from the time the document was added until present (oldest record to the most recent record).

Part numbers or other key values entered will be displayed in descending chronological order; most recent activity to oldest activity.

If the user enters a question mark '?' to this prompt, the user can filter the audit trail information. The following additional prompts will appear:

BEGINNING DATE? \*

ENDING DATE? \*

DATASET NAME (C/R = ALL)? \*

DISPLAY IMAGE FIELD NAMES (Y)?

These prompts all you to select a specific time range for the part, document, or other key value you will enter, and select the changes to a specific dataset (file).

## Files Accessed

ILFIL Image Log file detail (ILFDB.LOGFILES)  
 ILFLD Field name description file (ILFDB.LOGFILES)

## Screen Format

### 80 column view:

Part number, document, or other key value entered

#### First line:

Action - there are 3 possible actions: Add, Update, Delete

Dataset name - the name of the data set updated

User name - MPE user name

Date

Time

Program name - this will be SYSMAN for application commands other than standalone programs such as Utilities

#### Second line:

Item - Image field name updated

Additional Identifying Value (ILFKEY2). An example of this would be a line number, sequence number or other value.

Field Description

Old value of field (Updates and Deletes)

New value of field (Updates and Adds)

For fields that are longer than 10 characters and there is an old and new value to display, the new value is listed on a second line underneath the old value

### 132 column view:

Part number, document, or other key value entered

Date Range entered

#### First line:

Action - there are 3 possible actions: Add, Update, Delete

Program name - this will be SYSMAN for application commands other than standalone programs such as Utilities

User name - MPE user name

Date  
Time  
Database name  
Dataset name - the name of the file updated  
Field - Image field name updated  
Field Description  
Old value of field (Updates and Deletes)  
New value of field (Updates and Adds)  
Additional identifying value (if defined)  
For fields that are longer than 24 characters and there is an  
old and new value to display, the new value is listed on a  
second line underneath the old value

## Audit Trail Report (REPORT.AUDIT.SUMMIT)

This program is used to report the adds/changes/deletes made to the data bases that are enabled for logging and set up in UTIL.AUDIT.SUMMIT option 3. The REPORT.AUDIT.SUMMIT has a date range and other selection criteria. The image log file database ILFDB is read serially, the records are sorted on date and time, and printed.

The REPORT command has two formats. If you run the REPORT to a printer or a 132 column terminal, there is much more data displayed.

### Prompts

:RUN REPORT.AUDIT.SUMMIT

Displays output options.  
OPTION (3)?

BEGINNING DATE?           \*  
ENDING DATE?               \*

The user is prompted for a date window of Audit trail records to select from the database. To select all dates enter zero for the beginning date, and 99 for the ending date.

USER NAME (C/R = ALL)?

Enter the MPE user name of the user that performed the transaction, or press return to select all users.

DATASET NAME (C/R = ALL)?

Enter the Image Dataset name that was updated, or press return to list all datasets.

PROGRAM NAME (C/R = ALL)?

Enter the MPE program name that updated the database.

### Files Accessed

ILFIL Image Log file detail (ILFDB.LOGFILES)  
ILFLD Field name description file (ILFDB.LOGFILES)

### Screen Format

80 column view:

First line:

Action - there are 3 possible actions: Add, Update, Delete

Dataset name - the name of the data set updated

User name - MPE user name

Date

Time

Program name - this will be the application program that updated  
the database

Second line:

Item - Image field name updated

Field Description

Key value of the record

Old value of field (Updates and Deletes)

New value of field (Updates and Adds)

For fields that are longer than 10 characters and there is an  
old and new value to display, the new value is listed on a  
second line underneath the old value

132 column view:

Part number, document, or other key value entered

Date Range entered

First line:

Action - there are 3 possible actions: Add, Update, Delete

Program name - application program that updated the database

User name - MPE user name

Date

Time

Database name

Dataset name - the name of the file updated

Field - Image field name updated

Field Description

Old value of field (Updates and Deletes)

New value of field (Updates and Adds)

Key value of the record

For fields that are longer than 24 characters and there is an  
old and new value to display, the new value is listed on a  
second line underneath the old value

## Using Logging with Multiple Groups and Accounts

The 3000Audit Tool requires a single Image Log file for each Image database on your system. For example, if you had an Image database called ORDERS, and a second Image database called "SECURE", these two databases may not write to the same image log file. ORDERS would have its own Image log file, and SECURE would have its own Image log file.

However, if you have two ORDERS databases in the same account they may share the same Image Log file, and the 3000Audit will support this. In the example below, we have an ORDERS database in group DATA10, and an ORDERS database in group DATA20.

```

 ILFDB.LOGFILES
 ^
 : Batch job UTIL.AUDIT.SUMMIT option 1
 : copies data from log files in
 : LOGFILES to the ILFDB database.
 :
 ORDLGxxx.LOGFILES
 ^ ^
 : : Image Logging activity from group
 : : DATA10 and DATA20 both go into
 : : ORDLGxxx.LOGFILES
 : :
 ORDERS.DATA10 ORDERS.DATA20

```

You can use the 3000Audit Tool to administer logging in more than one Account on your HP3000. If you do so, each Account will need a separate Log Id. In the example below, Account TEST uses Log ID ORDLG and Account PROD uses Log ID ORDL2.

```

 ILFDB.LOGFILES.TEST ILFDB.LOGFILES.PROD
 ^ ^
 : :
 : :
 ORDLGxxx.LOGFILES.TEST ORDL2xxx.LOGFILES.PROD
 ^ ^
 : :
 : :
 ORDERS.DATA10.TEST ORDERS.DATA10.PROD

```

## Exclusion Tables of 3000Audit Tool

---

The 3000Audit Tool contains a series of Exclusion Tables. These tables are designed for files or programs that have been identified as creating many image log file records of questionable value. Due to the volume of image log file records created each day, it's important to identify and exclude programs that create a large number of image log file records which are not required for auditing requirements.

For example, say you have a QTP or SUPRTOOL process that runs at night and does a substantial amount of updating to your Image database. Since most batch processes have little value in an audit, you may wish to add QTP.PHxxxx.COGNOS or SUPRTOOL.PUB.ROBELLE to the programs you wish to exclude from ILFDB. Failure to exclude programs that perform mass updates will cause your ILFDB to grow rapidly.

### 3000AuditTool Table Limits

The image log extract LOGUTL1 and the image log reformat LOGUTL2 programs have limits to the amount of information that they can process. This is because of the size of the temporary flat files and ksam files used during the extract and reformatting process.

Please take this under consideration if you will be doing a mass update or deletion.

|                                                     |           |
|-----------------------------------------------------|-----------|
| Total number of image log file records supported:   | 1,000,000 |
| Number of DBDELETE records per image log file:      | 140,000   |
| Total number of simultaneous DBOPEN's per database: | 120       |

### SYSGEN Table Limits

This information is for HP3000 users that are new to Image Logging. There are two tables in SYSGEN that are relevant to logging. In most cases, the default size of these tables will be satisfactory unless you have 100 or more users performing image logging. If you do have a large number of users on your system, you may wish to bump these values up. Below is an example of increasing the values in SYSGEN. The new values do not take effect until you do a START NORECOVERY.

:SYSGEN

SYSGEN version E.04.04 : catalog version E.04.04

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\*\*note\*\* Retrieving NMMGR configuration data...

\*\* First level command \*\*

io                      log (lo)              misc (mi)              spu (sp)  
sysfile (sy)

basegroup (ba)      keep(ke)              permyes (pe)          show (sh)  
tape (ta)

clear (cl)(c)      exit (ex)(e)      help (he)(h)          oclose (oc)  
redo

sysgen> LOG

\*\* LOG configurator commands \*\*

show (sh)              slog (sl)              ulog (ul)

clear (cl)(c)      exit (ex)(e)      help (he)(h)          hold (ho)  
oclose (oc)          redo

log>SHOW

| configurable item         | max  | min | current |
|---------------------------|------|-----|---------|
| of user logging processes | 128  | 2   | 64      |
| users per logging process | 1140 | 1   | 128     |

(other system logging info is displayed also)

log>ULOG NLOGPROCS = 128

log>ULOG USERSPERPROC = 512

log> SHOW

| configurable item         | max  | min | current |
|---------------------------|------|-----|---------|
| of user logging processes | 128  | 2   | 128     |
| users per logging process | 2851 | 1   | 512     |

log>HOLD

log>EXIT

sysgen> KEEP

keeping to group CONFIG.SYS

Purge old configuration (yes/no)?YES

\*\* configuration files successfully saved \*\*

sysgen> EXIT

## ILFDB database guide

---

The following is a list of files in the ILFDB database. The primary file is ILFIL. The ILFIL contains one entry for every field of a record that is added, deleted, or updated. For fields that were added or deleted and there initialized value was zero or spaces, these field values are not stored in ILFIL.

The database password for ILFDB.LOGFILES is ASK

ILFLD - This dataset is used to store table of image field names and their descriptions

| Field name | type | Description                                        |
|------------|------|----------------------------------------------------|
| -----      | ---- | -----                                              |
| ILFLDNAM   | U16  | IMAGE FIELD NAME                                   |
| ILFLDDES   | U24  | FIELD DESCRIPTION                                  |
| ILFLDTYP   | I1   | 0 = Regular 1 = Manman date format 2=YYYYMMDD date |
| ILFLDI1    | I1   | FUTURE USE                                         |

ILPROG - This dataset stores the program names whose image logging records are being excluded from ILFDB.LOGFILES

| Field name  | type | Description                                   |
|-------------|------|-----------------------------------------------|
| -----       | ---- | -----                                         |
| ILPROGNM    | U26  | PROGRAM NAME                                  |
| ILPROGDBNAM | U8   | IF ONLY 1 DATABASE IS UPDATED - DATABASE NAME |
| ILPROGU1    | U30  | FUTURE USE                                    |
| ILPROGI1    | I1   | FUTURE USE                                    |

ILDBN - This dataset stores the names, groups, and log id's of the databases that have logging enabled.

| Field name   | type | Description                                |
|--------------|------|--------------------------------------------|
| -----        | ---- | -----                                      |
| ILDBNAM      | U8   | DATA BASE NAME                             |
| ILDBGRP      | U8   | DATA BASE GROUP                            |
| ILDBPASS     | U8   | DATA BASE PASSWORD                         |
| ILDBLOG      | U6   | LOG ID ASSOCIATED WITH THIS DATA BASE      |
| ILDBFILE     | U6   | LOG FILE PREFIX ASSOCIATED WITH THIS LOGID |
| ILDBFILGRP   | U8   | GROUP THE LOGFILES RESIDE IN               |
| ILDBLASTFILE | U8   | LAST LOG FILE READ                         |
| ILDBU1       | U30  | FUTURE USE                                 |
| ILDBI1       | I1   | FUTURE USE                                 |

ILDSN - This dataset stores the dataset names and field names whose

image logging records are being excluded from ILFDB.LOGFILES

| Field name | type | Description                               |
|------------|------|-------------------------------------------|
| -----      | ---- | -----                                     |
| ILDSNAM    | U8   | DATASET NAME OR FIELD NAME                |
| ILDSGRP    | U8   | DATA SET DATA BASE GROUP (NOT IN USE)     |
| ILDSDBNAME | U8   | DATA BASE THIS DATASET RESIDES IN         |
| ILDSU1     | U30  | DATABASE NAME FIELD OR DATASET RESIDES IN |
| ILDSI1     | I1   | DATASET = 0, FIELDNAME = 1                |

ILFIL - This is the Log Detail file which stores the detail records from the image log files.

| Field name | type | Description                          |
|------------|------|--------------------------------------|
| -----      | ---- | -----                                |
| ILFDBNAM   | U6   | DATA BASE NAME                       |
| ILFDBGRP   | U8   | DATA BASE GROUP                      |
| ILFDSET    | U16  | DATASET NAME                         |
| ILFACTN    | U2   | ACTION (P=Put, D=Delete,U=Update)    |
| ILFUSER    | U8   | USER OR JOB NAME                     |
| ILFUSER2   | U8   | ACCOUNT OR SESSION                   |
| ILFJOBSES  | U2   | BLANK IF SESSION, ACCT PREFIX IF JOB |
| ILFPROGN   | U8   | PROGRAM NAME                         |
| ILFPROGG   | U8   | PROGRAM'S GROUP                      |
| ILFDATE    | U8   | DATE YYYYMMDD                        |
| ILFTIME    | U4   | TIME HHMM                            |
| ILFKEY1    | U24  | KEY                                  |
| ILFKEY2    | U18  | ALTERNATE KEY                        |
| ILFFIELD   | U16  | FIELD NAME                           |
| ILFOLD     | U30  | OLD VALUE                            |
| ILFNEW     | U30  | NEW VALUE                            |
| ILFFUTU2   | U2   | FUTURE USE                           |

How the user name fields are stored in ILFIL:

```
:HELLO SESSION,USERNAME.ACCOUNT
```

There is no way to tell 100% if its a job or session, so the extract makes these assumptions:

- 1) You are using the FORCESESSION parameter to pick up the SESSION
- 2) Jobs are using a SESSION. Users are not using a SESSSION.

The USERNAME will always be in ILFUSER.

If the SESSION name is blank (presume a user session), the ILFUSER2 is the ACCOUNT, ILFJOBSES is blank.

If the SESSION name is not blank (presume a job stream), the ILFUSER2 is the SESSION, ILFJOBSES is not blank.

## Using Quiz to Access ILFDB

---

One of the advantages of the ILFIL is your ability to incorporate the data into your business processes. For example, by finding the DBPUT records, you can obtain the date a record was added to the data base. This would be useful in such applications as 'date work order added', or 'vendor was added by user xxxxx'. Also you can use the before/after values stored in the DBUPDATE records to monitor other critical fields. Examples would be 'sales order scheduled ship date was mm/dd/yy and now is mm/dd/yy' or 'purchase order price has been changed from 9999.99 to 9999.99'.

The 3000Audit Tool contains a quiz dictionary QILFSCHC.QUIZ.SUMMIT. that you can use to read the ILFDB database files. Should you need to change or recompile the dictionary for your version of Quiz, the source for the dictionary is QILFSCH.QUIZ.SUMMIT.

Enclosed is an example of a Quiz program to find work orders added today.

```

SET DICTIONARY QILFSCHC.QUIZ.SUMMIT
ACCESS ILFIL
SELECT IF ILFDSET = "OWOF" AND ILFDATE = SYSDATE AND ILFACTN = "P"
DEFINE WORKORDER CHAR*10 = ILFKEY1[1:10]
REPORT SUMMARY WORKORDER
SET SUBFILE NAME MYSUBFIL
GO
;
SET DICTIONARY QSCHMAC.QUIZ.SUMMIT
ACCESS *MYSUBFIL LINK WORKORDER TO WOWO OF OWOF
etc.....

```

```

*
* Example of List command to display audit trail entries by key
*
*
* This is the 80 column view. Additional information is displayed
* on the 132 column view or when routed to a printer or disk file.
*

```

: RUN LIST.AUDIT.SUMMIT

List Audit Trail Database (v2.56)

ENTER DESIRED OUTPUT OPTION:  
 0. HOLD REPORT ON THE HP SYSTEM 1. TERMINAL, 132 COLUMNS  
 2. ENTER A PRINTER NUMBER 3. TERMINAL, 80 COLUMNS  
 4. A DISK FILE ON THE HP SYSTEM  
 OPTION (3)? 3

AUDIT RECORDS AS OF: THU, JUN 16, 2005, 3:53 PM

(ENTER '?' TO FILTER)  
 ENTER PART, DOCUMENT, OR OTHER VALUE TO INQUIRE UPON? SMITH \*

RECORDS SELECTED: 11  
 SAT, JUN 18, 2005, 10:54 AM AUDIT TRAIL DETAIL PAGE: 1  
 KEY VALUE : SMITH

| ACTION | ITEM       | USER    | DATE/TIME       | PROGRAM   | OLD VALUE/NEW VALUE  |
|--------|------------|---------|-----------------|-----------|----------------------|
| DELETE | UISMAS     | MANAGER | 06/16/05 15:11  | UT286.PUB |                      |
|        | UISUSERNAM |         | USER'S NAME     |           | SMITH                |
|        | UISUSEREMA |         | EMAIL ADDRESS   |           | JOHN.SMITH@YAHOO.COM |
|        | UISCSPHONE |         | PHONE NUMBER    |           | 203-678-1515         |
|        | UISCSFAX   |         | FAX NUMBER      |           | 203-678-1550         |
|        | UISUSEREXT |         | PHONE EXTENSION |           | 286                  |
| ADD    | UISMAS     | MANAGER | 06/16/05 15:12  | UT286.PUB |                      |
|        | UISUSERNAM |         | USER'S NAME     |           | SMITH                |
|        | UISUSEREMA |         | EMAIL ADDRESS   |           | JOHN.SMITH@MSN.COM   |
|        | UISCSPHONE |         | PHONE NUMBER    |           | 203-678-1515         |
|        | UISCSFAX   |         | FAX NUMBER      |           | 203-678-1550         |
|        | UISUSEREXT |         | PHONE EXTENSION |           | 286                  |
| UPDATE | UISMAS     | MANAGER | 06/16/05 15:53  | QUERY.PUB |                      |
|        | UISUSEREXT |         | PHONE EXTENSION |           | 286 2865             |

(ENTER '?' TO FILTER)  
 ENTER PART, DOCUMENT, OR OTHER VALUE TO INQUIRE UPON? E \*

```

*
* Example of Report command to select series of Log file records
* by date and other selection criteria.
*

```

957: RUN REPORT.AUDIT.SUMMIT

ENTER DESIRED OUTPUT OPTION:  
 0. HOLD REPORT ON THE HP SYSTEM      1. TERMINAL, 132 COLUMNS  
 2. ENTER A PRINTER NUMBER            3. TERMINAL, 80 COLUMNS  
 4. A DISK FILE ON THE HP SYSTEM  
 OPTION (3)? 1

AUDIT RECORDS AS OF: THU, JUN 16, 2005, 3:53 PM  
 BEGINNING DATE? 0 \*

ENDING DATE? 99 \*

USER NAME (C/R = ALL)? \*

DATASET NAME (C/R = ALL)? \*

PROGRAM NAME (C/R = ALL)? \*

DATABASE NUMBER OR GROUP NAME (C/R = ALL)? \*

GATHERING DATA.....  
 RECORDS READ: 23      RECORDS SELECTED: 21  
 REPORT .            3000AUDIT TOOL

REQUESTOR: MANAGER .PUB .SUMMIT

SAT, JUN 18, 2005, 11:01 AM

AUDIT TRAIL DETAIL 00/00/00 TO 99/99/99

PAGE: 1

| ACTION | PROGRAM   | USER    | DATE     | TIME  | DATABASE | FILE    | FIELD                      | FIELD DESCRIPTION     | OLD/NEW VALUE | RECORD KEY |
|--------|-----------|---------|----------|-------|----------|---------|----------------------------|-----------------------|---------------|------------|
| DELETE | UT286.PUB | MANAGER | 06/16/05 | 15:11 | UI SDB   | UI SMAS | UI SUSEREMAEMAIL ADDRESS   | JOHN.SMI TH@YAHOO.COM |               | SMI TH     |
|        |           |         | 06/16/05 | 15:11 |          |         | UI SCSPHONEPHONE NUMBER    | 203-678-1515          |               | SMI TH     |
|        |           |         | 06/16/05 | 15:11 |          |         | UI SCSFAX FAX NUMBER       | 203-678-1550          |               | SMI TH     |
|        |           |         | 06/16/05 | 15:11 |          |         | UI SUSEREXTPHONE EXTENSION | 286                   |               | SMI TH     |
| ADD    | UT286.PUB | MANAGER | 06/16/05 | 15:12 | UI SDB   | UI SMAS | UI SUSEREMAEMAIL ADDRESS   | JOHN.SMI TH@MSN.COM   |               | SMI TH     |
|        |           |         | 06/16/05 | 15:12 |          |         | UI SCSPHONEPHONE NUMBER    | 203-678-1515          |               | SMI TH     |
|        |           |         | 06/16/05 | 15:12 |          |         | UI SCSFAX FAX NUMBER       | 203-678-1550          |               | SMI TH     |
|        |           |         | 06/16/05 | 15:12 |          |         | UI SUSEREXTPHONE EXTENSION | 286                   |               | SMI TH     |
| ADD    | UT286.PUB | MANAGER | 06/16/05 | 15:13 | UI SDB   | UI SMAS | UI SUSERNAMUSER'S NAME     | FRANKLIN              |               | FRANKLIN   |
|        |           |         | 06/16/05 | 15:13 |          |         | UI SUSEREMAEMAIL ADDRESS   | ED.FRANKLIN@YAHOO.COM |               | FRANKLIN   |
|        |           |         | 06/16/05 | 15:13 |          |         | UI SCSPHONEPHONE NUMBER    | 303-567-8000          |               | FRANKLIN   |
|        |           |         | 06/16/05 | 15:13 |          |         | UI SCSFAX FAX NUMBER       | 303-567-8001          |               | FRANKLIN   |
|        |           |         | 06/16/05 | 15:13 |          |         | UI SUSEREXTPHONE EXTENSION | NONE                  |               | FRANKLIN   |
| DELETE | UT286.PUB | MANAGER | 06/16/05 | 15:50 | UI SDB   | UI SMAS | UI SUSERNAMUSER'S NAME     | FRANKLIN              |               | FRANKLIN   |
|        |           |         | 06/16/05 | 15:50 |          |         | UI SUSEREMAEMAIL ADDRESS   | ED.FRANKLIN@YAHOO.COM |               | FRANKLIN   |
|        |           |         | 06/16/05 | 15:50 |          |         | UI SCSPHONEPHONE NUMBER    | 303-567-8000          |               | FRANKLIN   |
|        |           |         | 06/16/05 | 15:50 |          |         | UI SCSFAX FAX NUMBER       | 303-567-8001          |               | FRANKLIN   |
|        |           |         | 06/16/05 | 15:50 |          |         | UI SUSEREXTPHONE EXTENSION | NONE                  |               | FRANKLIN   |
| ADD    | UT286.PUB | MANAGER | 06/16/05 | 15:50 | UI SDB   | UI SMAS | UI SUSERNAMUSER'S NAME     | FRANKLIN              |               | FRANKLIN   |
|        |           |         | 06/16/05 | 15:50 |          |         | UI SUSEREXTPHONE EXTENSION | 3536                  |               | FRANKLIN   |
| UPDATE | QUERY.PUB | MANAGER | 06/16/05 | 15:53 | UI SDB   | UI SMAS | UI SUSEREXTPHONE EXTENSION | 286                   | 2865          | SMI TH     |

END OF PROGRAM  
 957: