



IBM Software Group

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Recoup Deferred Lost
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AIM Enterprise Platform Software

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What is Recoup Deferred Lost?

- Today ZRECP PROCEED returns
 - Pre-Recoup and during-Recoup GFS releases
 - Lost Addresses

- With Deferred Lost,
 - ZRECP PROCEED returns
 - Pre-Recoup and during-Recoup GFS releases
 - Lost Addresses are returned by a special PDU
 - ZRPDU CREATE LOST

- In addition, the following enhancements are available
 - Erronously Available addresses are automatically protected
 - Rebuild processing can exclude record IDs based on ID and pool section
 - No limit on the number of record IDs that can be excluded
 - Lost Address counts are in file system file

Why defer Lost Address processing?

- Because ZRECP PROCEED only returns "pre" and "during" GFS releases
 - ZRECP PROCEED can be done without delay.
 - Allows return to a normal PDU schedule sooner
 - Assumes that PDUs return more pool addresses than lost addresses found by Recoup

- Because Lost Addresses are rolled in by a PDU
 - Time pressure to investigate lost addresses is significantly reduced

Recoup Steps

	Step	Existing	New
1	Start Recoup	ZRECP START	ZRECP START
2	Do Recoup Phase 1 and Phase 2	ZRECP RECALL	ZRECP RECALL
3	Do Recoup Phase 3	ZRECP RESUME	ZRECP RESUME
4	Protect or Ignore erroneously available	ZRECP PROTECT ZRECP IGNORE	Will protect automatically
5	(Optional) Do Recoup Phase 5 followed by Phase 6 and Phase 7	ZRECP DUMP	ZRECP DUMP
6			

Recoup Lost Address Database

■ Pseudo directory

- #SONLOST fixed file records
- Contains bit indicators of each lost address
- Created during Recoup Phase 3
- ZRECP LOST CREATE uses to create detailed and summary count files
- ZRPDU CREATE LOST uses to create PDU to roll in lost addresses

■ Detailed information

- #IBMLOST fixed file records contains the following for each lost file address
 - ▶ Pool section
 - ▶ Pool ordinal
 - ▶ Record ID
- ZRECP LOST CREATE builds #IBMLOST
- ZRECP LOST REBUILD uses to rebuild #SONLOST pseudo directories
- Recommend to allocate enough ordinal numbers to hold all lost addresses on a typical Recoup run
 - ▶ Use lost address counts from previous Recoup runs
 - ▶ Add 10% - 20% more ordinals for expansion
 - ▶ Each #IBMLOST record can hold information for 254 lost addresses

Recoup Lost Address Database

■ Summary count file

- Kept in file system file
- File name is fixed = LostAddressSummaryCount.fil
- File directory is defined by ZRECP PROFILE PATH
 - ▶ Default directory = /usr/IBM
 - ▶ Can have a unique directory for each Recoup run
- ZRECP LOST CREATE builds LostAddressSummaryCount.fil
 - ▶ Binary file
 - ▶ File is overwritten; not appended to
- ZRECP LOST EX sets exclusion indicator for ID in summary count file
 - ▶ Exclude ID for all pool sections or exclude ID for a specific pool section
- ZRECP LOST IN sets inclusion indicator for ID in file
 - ▶ Include ID for all pool sections or include ID for a specific pool section
- ZRECP LOST REBUILD uses the summary count file and the detailed fixed file (#IBMLOST) to determine whether or not to exclude the lost address from the pseudo directory (#SONLOST)
- ZRECP DISPLAY LOST displays counts from the summary count file
- ZRECP DISPLAY EX displays IDs that are to be excluded
- ZRECP DISPLAY IN displays IDs that are to be included

Lost Address Summary Count File Considerations

- Directory path considerations
 - Use same directory path
 - Lost address counts from previous Recoup run is overlaid
 - Can FTP the file before next Recoup to save data
 - Use different directory path for each Recoup run
 - Can use ZRECP DISPLAY LOST to display counts from previous Recoup runs
 - For Recoup on April, 24, 2007, maybe set the path to be
==> ZRECP PROFILE PATH-'/Recoup/20070424'

- Recoup in 1052 state considerations
 - Can use FFS - Fixed File System
 - Can run Recoup in 1052 state and do ZRECP LOST CREATE in NORM later

Lost Address Summary Count File Considerations

- File System mount options
 - TFS - TPF File System
 - Uses pools ... may have issue if ZRECP LOST CREATE is run in 1052 state
 - Available in all processors ... ZRECP DISPLAY LOST can be done from any processor
 - FFS - Fixed File System
 - Does not use pools, only fixed file records ... no 1052 state issue
 - Processor unique
 - MFS - Memory File System
 - Does not use pools, kept in memory only
 - Processor unique
 - Not persistent
 - Can use MFS and later copy to another file system or FTP
 - May lose the data

Detailed File (#IBMLOST) Considerations

- What happens if all lost addresses cannot fit into the allocated #IBMLOST records?
 - ZRECP LOST CREATE starts with #SONLOST starting at ordinal 0 and going upward
 - If #IBMLOST cannot hold all of the lost addresses,
 - ▶ Addresses in the higher #SONLOST ordinals will not be detailed
 - ▶ Process of counting lost addresses by record ID and pool section will continue
 - Addresses not detailed will be shown as "Unlogged" lost addresses
 - If a record ID is excluded and it has unlogged lost addresses and a rebuild is done
 - ▶ All unlogged lost addresses will be excluded from the rebuild of #SONLOST
 - ▶ After the rebuild there is no method to re-include unlogged IDs and rebuild
 - ▶ These unlogged and excluded lost addresses may be lost addresses on the next Recoup

- What can be done if all lost addresses need to be logged in #IBMLOST?
 - If you have spare space on DASD and you have not done a ZRPDU CREATE LOST,
 - Create a new FCTB which increases the number of allocated #IBMLOST ordinals
 - Load the FCTB with FCTB load in Norm
 - Re-run ZRECP LOST CREATE

Display Lost Address Counts

- ZRECP DISPLAY LOST TOTALS SUM-PH3
 - Counts created during Recoup Phase 3
 - Counts in fixed file record #IBMM4 ordinal 125
 - Counts are summarized by pool section
 - Intended for use before ZRECP LOST CREATE is run

ZRECP DISPLAY LOST TOTALS SUM-PH3

CSMP0097I 13.44.48 CPU-B SS-BSS SSU-HPN IS-01
 RECP0930I 13.44.48 RECOUP DISPLAY OF LOST ADDRESS COUNTS
 USING FIXED RECORD #IBMM4 ORDINAL 125
 LAST BUILT ON Tue Apr 3 22:32:13 2007

SEC ID	TOTAL LOST	UNLOGGED LOST	EXCLUDED LOST	TOTAL INCLUDED
TOT				0
				12774
SDPA	1250			0
LDPA	1349			0
4DPA	1311	0		0
SDPB	1100	0		0
LDPB	1398	0		0
4DPB	1360	0		0
4DPC	1254	0		0
4DPD	1252	0		0
4D6A	1250	0		0
4D6B	1250	0		0
END OF DISPLAY+		0		0

Display Lost Address Counts (continued)

- ZRECP DISPLAY LOST TOTALS SUM-LTSection
 - Counts created during ZRECP LOST CREATE
 - Counts obtained from LostAddressSummaryCount.fil
 - Directory used is defined by ZRECP PROFILE PATH command
 - ▶ Can re-define path and display counts form another Recoup run
 - Counts are summarized by pool section

ZRECP DISPLAY LOST TOTALS SUM-LTS

CSMP0097I 13.50.39 CPU-B SS-BSS SSU-HPN IS-01
 RECP0930I 13.50.39 RECOUP DISPLAY OF LOST ADDRESS COUNTS
 USING FILE /Recoup/20070403/LostAddressSummaryCount.fil

LAST BUILT ON Tue Apr 3 22:32:28 2007

SEC ID	TOTAL LOST	UNLOGGED LOST	EXCLUDED LOST	TOTAL INCLUDED
TOT		0	0	
SDPA		0		12774
LDPA	1250	0		1250
4DPA	1349	0		1349
SDPB	1311	0		1311
LDPB	1100	0		1100
4DPB	1398	0		1398
4DPC	1360	0	0	1360
4DPD	1254	0	0	1254
4D6A	1252	0	0	1252
4D6B	1250	0	0	1250
END OF DISPLAY+	1250		0	

Display Lost Address Counts (continued)

- ZRECP DISPLAY LOST TOTALS SUM-ID
 - Counts created during ZRECP LOST CREATE
 - Counts obtained from LostAddressSummaryCount.fil
 - Directory used is defined by ZRECP PROFILE PATH command
 - ▶ Can re-define path and display counts form another Recoup run
 - Counts are summarized by record ID

ZRECP DISPLAY LOST TOTALS SUM-ID

CSMP0097I 13.56.11 CPU-B SS-BSS SSU-HPN IS-01
 RECP0930I 13.56.11 RECOUP DISPLAY OF LOST ADDRESS COUNTS
 USING FILE /Recoup/20070403/LostAddressSummaryCount.fi I
 LAST BUILT ON Tue Apr 3 22:32:28 2007

SEC	ID	TOTAL LOST	UNLOGGED LOST	EXCLUDED LOST	TOTAL INCLUDED
TOT					12774
		7315			7315
		12774			
0000		2		0	
B070	C1F1 A1	4	1	0	0
B075	C1F2 A2	2		0	0
	C3C1 CA	254		0	0
	C3C4 CD	12		0	0
	D1D5 JN	3		0	2
	E8F7 Y7	1		0	4
		1951		0	1951
				0	
				0	1
				0	2
				0	3

MORE DATA AVAILABLE, ENTER ZPAGE TO CONTINUE+

FC33

Display Lost Address Counts (continued)

- ZRECP DISPLAY LOST ID-record_id
 - Counts created during ZRECP LOST CREATE
 - Counts obtained from LostAddressSummaryCount.fil
 - Directory used is defined by ZRECP PROFILE PATH command
 - ▶ Can re-define path and display counts form another Recoup run
 - Counts for the specified record ID are displayed
 - ▶ Total counts for the record ID
 - ▶ ID counts per pool section for the record ID

ZRECP DISPLAY LOST ID-FC60

CSMP0097I 13.59.13 CPU-B SS-BSS SSU-HPN IS-01
 RECP0930I 13.59.13 RECOUP DISPLAY OF LOST ADDRESS COUNTS
 USING FILE /Recoup/20070403/LostAddressSummaryCount.fil
 LAST BUILT ON Tue Apr 3 22:32:28 2007

SEC	ID	TOTAL LOST	UNLOGGED LOST	EXCLUDED LOST	TOTAL INCLUDED
TOT	FC60	3078	0		
4DPA	FC60	1230	0		
4DPB	FC60	1212	0		
4DPC	FC60		0		636
END OF DISPLAY+		636		0	3078
				0	1230
				0	1212

Display Lost Address Counts (continued)

- ZRECP DISPLAY LOST LTSection-pool_section_name
 - Counts created during ZRECP LOST CREATE
 - Counts obtained from LostAddressSummaryCount.fil
 - Directory used is defined by ZRECP PROFILE PATH command
 - ▶ Can re-define path and display counts form another Recoup run
 - Counts for the specified pool section are displayed
 - ▶ Total counts for the pool section
 - ▶ ID counts for the pool section

ZRECP DISPLAY LOST LTS-LDPB

CSMP0097I 14.06.32 CPU-B SS-BSS SSU-HPN IS-01
 RECP0930I 14.06.32 RECOUP DISPLAY OF LOST ADDRESS COUNTS
 USING FILE /Recoup/20070403/LostAddressSummaryCount.fil
 LAST BUILT ON Tue Apr 3 22:32:28 2007

SEC ID	TOTAL LOST	UNLOGGED LOST	EXCLUDED LOST	TOTAL INCLUDED
LDPB	1398	0		1398
0000	1230	0		1230
C3C1 CA	155	0		155
C3C4 CD	12	0		12
FC33	1	0	0	1
END OF DISPLAY+			0	
			0	
			0	
			0	
			0	

Display Lost Addresses (continued)

- ZRECP DISPLAY LOST FA ID-record_ID
 - Counts created during ZRECP LOST CREATE
 - Addressed obtained from #IBMLOST fixed file records
 - ▶ Indexes into #IBMLOST obtained from LostAddressSummaryCount.fil
 - Displays lost file addresses for the specified record ID

ZRECP DISPLAY LOST FA ID-CD

CSMP0097I 14.10.56 CPU-B SS-BSS SSU-HPN IS-01
RECP0931I 14.10.56 LOST ADDRESSES FOR ID-C3C4 CD
USING FILE /Recoup/20070403/LostAddressSummaryCount.fi I

```
-----
0000000010315953  0000000010315952  0000000010315951  _
0000000010315950  000000001031594F  000000001031594E
000000001031594D  000000001031594C  000000001031594B
000000001031594A  0000000010315949  0000000010315948
END OF DISPLAY+
```

Display Lost Addresses (continued)

■ ZRECP DISPLAY LOST

- Default display
- Dependent on when the command is done
 - ▶ If after phase 3 has completed but before ZRECP LOST CREATE run
 - Display is same as ZRECP DISPLAY LOST TOTALS SUM-PH3
 - ▶ If after ZRECP LOST CREATE has run
 - Display counts from LostAddressSummaryCount.fil
 - Display by pool section by record ID

ZRECP DISPLAY LOST

CSMP0097I 14.12.43 CPU-B SS-BSS SSU-HPN IS-01
 RECP0930I 14.12.43 RECOUP DISPLAY OF LOST ADDRESS COUNTS
 USING FILE /Recoup/20070403/LostAddressSummaryCount.fil
 LAST BUILT ON Tue Apr 3 22:32:28 2007

SEC	ID	TOTAL LOST	UNLOGGED LOST	EXCLUDED LOST	TOTAL INCLUDED
TOT					12774
SDPA		1250			1250
		12774	1243	0	1243
			0	0	
0000		2		0	0
B070E8F7 Y7		4	1	0	0
-B075				0	0
LDPA		1349		0	1349
		1248		0	2
	C3C1 CA	99	0	0	4
MORE DATA AVAILABLE, ENTER ZPAGE TO CONTINUE+				0	0
0000			0		1

Display Lost Addresses (continued)

- ZRECP DISPLAY LOST STATUS
 - Gives times when lost address steps were executed

ZRECP DISPLAY LOST STATUS

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CSMP0097I 11.45.15 CPU-B SS-BSS SSU-HPN IS-01
RECP0940I 11.45.15 DISPLAY OF TIMES FOR LOST ADDRESS HANDLING STEPS
RECOUP PHASE 3 = Sat Apr 14 11:39:47 2007
ZRECP LOST CREATE = Sat Apr 14 11:40:12 2007
ZRECP LOST REBUILD = Sat Apr 14 11:41:31 2007 _
ZRPDU CREATE LOST = Sat Apr 14 11:42:26 2007 _
END OF DISPLAY+
```

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