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FEB 26 1976
J. H. SALTZER

FORUM LIST

W. Burner

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G. Lundberg

J. Register

L. J. Ryan

Prof. J. Saltzer

R. Shoemaker



Honeywell

TO: List of Attendees cc: List

SUBJECT: Forum Minutes for February 11, 1976

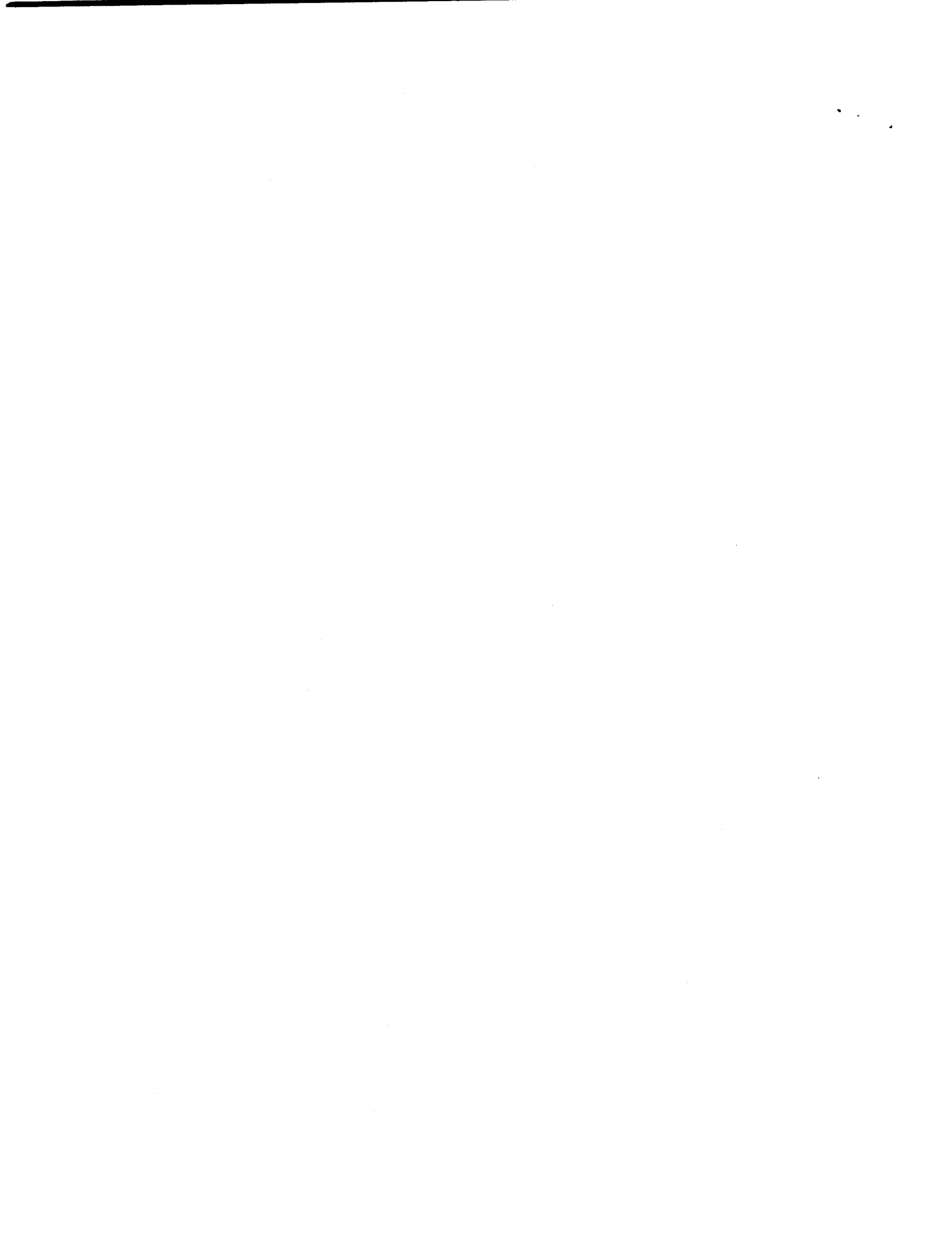
ATTENDEES: G. Ackerman-Lewis E. D. Kleinow
R. J. Chevalier R. A. Roach
W. J. Flaherty J. R. Steinberg

HARDWARE - E. D. Kleinow

- SCU-A . T&D's fail - FED located and replaced problem MC board.
- DSU190 . Area 11 "pack on" switch circuit had to be adjusted.
. Area 2 same problem.
. Additional unit arrived and has been tested off line. Cables will be installed and unit tested as soon as time is available.
- PRT301 . Stacker problem - micro-switch had to be adjusted.
- Cache . Intermittent problem - FED investigating.
- Other . FED has begun using 3rd shift time, once a week, for maintenance.

SOFTWARE - G. Ackerman-Lewis

- . MSS 27.6C running.
- . MSS 28.0 attempted to install but not running.
- . NSS to be installed when additional DSU190 is available.



BILLERICA

- . Billerica wants to remove a DSU190B from MIT for return to Billerica. Flaherty will explore allocation of files and determine if this can be accomplished.

PK



To: Multics Forum Members

From: Grace Ackerman-Lewis

Date: February 11, 1976

Subject: Multics Crash Analysis for Jan. 20 - Feb. 8

Total number of crashes = 12 (ERFs 22 - 33)

Category	ERF #	Cause	# Crashes	Timelost
HARDWARE:				
	22	Burned board, CSU 2	1	00:15
	23	Bulk store error	1	00:45
	24	D191 area 11 error	1	01:30
	26	Parity error, CPU-A	1	00:15
	30	Trbl. fault adding CPU-B	1	-
	33	Parity error, SCU-A	1	00:15
	Totals		6	04:15
HARDWARE SUSPECTED:				
	29,32	Probable CPU-A parity	2	03:30
	31	Probable timer runout	1	01:00
	Total		3	04:30
NOT ANALYZABLE:				
	27	Crawlout with AST locked	1	-
	28	System loop	1	01:00
	Totals		2	01:00
OTHER:				
	25	D191 placed in standby	1	01:00
	Total		1	01:00

#	sys.	date	time	type	brief explanation
33	27.6c	02/06/76	14:48	H	Parity error, SCU-A
	27.6c	02/05/76			NO CRASHES
	27.6c	02/04/76			NO CRASHES
	27.6c	02/03/76			NO CRASHES
032	27.6cx	02/02/76	20:22	H?	Probable CPU A parity error, dump no good
031	27.6cx	02/02/76	16:33	H?	Prob. timer runout after CPU B del., preceded by Ill. seg. flts. on B
030	27.6b	02/02/76	08:33	H	Trouble fault while adding CPU B
029	27.6b	02/02/76	03:47	H?	Probable CPU A parity error (lights on), dump no good
028	27.6b	02/01/76	12:00	NA	System loop, unable to get dump, had to reboot BOS
027	27.6b	02/01/76	07:46	NA	Crawl out with AST locked, dump no good
026	27.6b	01/31/76	09:32	H	Parity error, CPU A (apparent error in addr preparation)
025	27.6b	01/30/76	14:05	Oper	0191 Area 13 accidentally placed into standby
024	27.6b	01/29/76	20:07	H	0191 Area 11 hardware failure
023	27.6b	01/28/76	09:00	H	Bulk store errors booting Multics
	27.6b	01/27/76			NO CRASHES
022	27.6b	01/26/76	15:08	H	Board burned up in Bulk Store CSM 2
	27.6a	01/25/76			NO CRASHES


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386 11/14/75 1 NSS Salvager should question clock values earlier than today (ie, 01/01/01, etc.)
384 09/17/75 1 ITT can overflow very easily, leading to system crashes
356 02/21/75 1 dmm Bug(s) exist in Network locking software -> dxss timeouts

385 11/14/75 2 Problems exist with channel definition table (password suppress, etc.)
383 08/21/75 2 copyrigh_archive fails if archive longer than 64k
381 09/21/75 2 shw shutdown with 2 CPUs may not work (depends on which CPU is used for shutdown)
350 01/02/75 2 mlg Users who hangup may not be logged out
348 12/03/74 2 tac security problems in the automatic creating of home directories

382 09/21/75 3 add_copyright will not work with several recent source types
380 07/30/75 3 srh delete_acl with no args deletes user's access to working dir (MPRF 8588)
378 07/30/75 3 *** qedx won't edit some long (>64K) segments (MPRF 8591)
375 05/22/75 3 nlm printer dlm does not raise hood when out of paper (if in nep mode or printing head sheet)
369 04/10/75 3 shw Shutdown with 3 CPUs may result in a loop (stz used to clear lock, should be stac)
366 03/22/75 3 shw user can get into loop creating/destroying processes thus tying up system.
364 03/02/75 3 srh msla does not handle star convention properly (MPRF 8010)
362 03/02/75 3 srh delete_name gives incorrect error message on a msg (bug in cname_file)
359 03/02/75 3 bs9 initialize_peek_limits leaves old (possibly dangerous) limit table on an error (missing seg)
358 02/27/75 3 rab EXL compiler faults if used for 1st time after debug has listed object code (fixed with prelinking)
354 02/12/75 3 bs9 initialize_peek_limits fails if any error is encountered while processing (security problem?)
338 09/26/74 3 tvv restarted printer requests indicate a zero charge ($0.00)
324 08/27/74 3 srh message coordinator can lose a wakeup and then stops printing
322 08/21/74 3 srh command_processor_ can get fatal process errors (with some cases of iteration)
315 07/24/74 3 amk Long salvager (after clean shutdown) is detecting bad filemap checksums
282 05/05/74 3 mam qedx fails to find expressions like /a.bc.*a.bd/ in strings like "a.bc a.b a.bd"
240 01/10/74 3 NSS lock does not handle directory deletions well. (May result in seg fault -> crawlout)
141 07/22/73 3 *** >system_library_tools should be removed from default search rules
129 07/07/73 3 rgb renaming directories does not terminate them and can cause serious problems

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*** - fix completed (to be installed)

Inst - fix installed

(END)

This segment contains a list of known CPU hardware bugs/deficiencies.

084	06/13/75	***	2	CSL causes 2-bit shift at bounds/fault boundary (PHAB-PC070)
082	04/19/75	***	2	IPR faults occur if target string of move (etc) is zero length.
081	01/15/75	Inst	2	CMPC does not always work
080	01/15/75	ENG	2	CMPC sometimes fails
079	10/14/74	Inst	2	Bounds faults not being recognized on decimal instructions (PHAB-PC036, PHAB-PC060)
078	10/14/74	Inst	2	Ring alarm faults are only sampled at RTO time (PHAB-PC052)
077	10/14/74	***	2	Packed pointer load faults (FCO released)
076	09/05/74	Inst	2	CMPC sometimes fails at page boundaries.
075	08/26/74	Inst	2	MLR sometimes stores extra fill characters.
074	08/05/74	Inst	2	CMPC sometimes fails with multiple page faults.
073	05/02/74	***	1	MLR (CMPC, etc) will not work with 1048576 characters.
072	05/02/74	Inst	1	ADWP sometimes fetches operand from even word instead of odd.
071	05/02/74	***	2	CMPC fails with certain bit offsets not on character boundaries.
070	03/25/74	Inst	2	XED's instructions fail to do indexing correctly (PHAB-PC052)
069	03/18/74	Inst	2	MLR and CMPC place fill characters in last few words at page bdr
068	03/11/74	Inst	2	MPY gets overflow on -2**35 Inst -2**35.
067	02/14/74	Inst	2	MLR sometimes places 8 zeros near page boundary.
066	02/14/74	Inst	2	MVN gets fixedoverflow when moving 02.
065	02/13/74	Inst	2	MLR sometimes changes a single character to fill character at page boundary.
064	02/12/74	Inst	2	MLR moves 8 characters extra at page boundary.
063	02/06/74	Inst	2	CMPC fails at connect fault time processing fill chars.
062	02/04/74	Inst	2	CSL instruction fails across bound/fault boundaries.
061	01/24/74	Inst	2	MVT sometimes fails if take page fault on table.
060	01/12/74	Inst	2	MLR gets op-not-completes.
059	01/12/74	Inst	2	MLR get no-write-permission by miscalculating TSR.
058	01/12/74	Inst	2	CMPC sometimes gives wrong results.
057	01/03/74	Inst	2	MLR instruction fails across bound/fault boundaries.
056	01/03/74	Inst	2	SREG gets op-not-complete if at end of page.
042	10/13/73	Inst	2	CI and/or SC modification does not always work.

The severity of the problem is interpreted as follows:

1. Severe, the problem is holding up system progress.
 2. Medium, the problem is annoying but can be circumvented.
 3. Slight, the problem is not very serious.
- ***. Fix known, awaiting installation.

(END)

Massachusetts Institute of Technology
Information Processing Center

Multics availability for last week to 01/31/76 2359.0

Time	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Time
10000	17.0 1 384 2.0	20.0 2 384 2.0	19.0 2 384 2.0	18.0 2 384 2.0	19.0 2 384 2.0	14.0 2 384 2.0	16.0 2 384 2.0	10000
10001	13.0 1 384 2.0	19.0 2 384 2.0	21.0 2 384 2.0	17.0 2 384 2.0	18.0 2 384 2.0	14.0 2 384 2.0	18.0 2 384 2.0	10001
10030	12.0 1 384 2.0	19.0 2 384 2.0	17.0 2 384 2.0	16.0 2 384 2.0	18.0 2 384 2.0	15.0 2 384 2.0	17.0 2 384 2.0	10030
10031	13.0 1 384 2.0	19.0 2 384 2.0	20.0 2 384 2.0	15.0 2 384 2.0	17.0 2 384 2.0	15.0 2 384 2.0	14.0 2 384 2.0	10031
10100	13.0 1 384 2.0	18.0 2 384 2.0	16.0 2 384 2.0	13.0 2 384 2.0	16.0 2 384 2.0	14.0 2 384 2.0	15.0 2 384 2.0	10100
10101	13.0 1 384 2.0	15.0 2 384 2.0	14.0 2 384 2.0	12.0 2 384 2.0	19.0 2 384 2.0	14.0 2 384 2.0	13.0 2 384 2.0	10101
10130	13.0 1 384 2.0	13.0 2 384 2.0	14.0 2 384 2.0	11.0 2 384 2.0	18.0 2 384 2.0	13.0 2 384 2.0	12.0 2 384 2.0	10130
10131	13.0 1 384 2.0	9.0 2 384 2.0	15.0 2 384 2.0	11.0 2 384 2.0	16.0 2 384 2.0	15.0 2 384 2.0	12.0 2 384 2.0	10131
10200	13.0 1 384 2.0	9.0 2 384 2.0	15.0 2 384 2.0	11.0 2 384 2.0	15.0 2 384 2.0	13.0 2 384 2.0	13.0 2 384 2.0	10200
10201	13.0 1 384 2.0	8.0 2 384 2.0	17.0 2 384 2.0	12.0 2 384 2.0	15.0 2 384 2.0	12.0 2 384 2.0	11.0 2 384 2.0	10201
10230	12.0 1 384 2.0	8.0 2 384 2.0	17.0 2 384 2.0	10.0 2 384 2.0	15.0 2 384 2.0	13.0 2 384 2.0	12.0 2 384 2.0	10230
10231	12.0 1 384 2.0	9.0 2 384 2.0	16.0 2 384 2.0	9.0 2 384 2.0	12.0 2 384 2.0	12.0 2 384 2.0	12.0 2 384 2.0	10231
10300	11.0 1 384 2.0	10.0 2 384 2.0	15.0 2 384 2.0	9.0 2 384 2.0	11.0 2 384 2.0	12.0 2 384 2.0	11.0 2 384 2.0	10300
10301	11.0 1 384 2.0	10.0 2 384 2.0	16.0 2 384 2.0	7.0 2 384 2.0	10.0 2 384 2.0	10.0 2 384 2.0	10.0 2 384 2.0	10301
10330	11.0 1 384 2.0	9.0 2 384 2.0	14.0 2 384 2.0	7.0 2 384 2.0	10.0 2 384 2.0	10.0 2 384 2.0	10.0 2 384 2.0	10330
10331	10.0 1 384 2.0	9.0 2 384 2.0	13.0 2 384 2.0	6.0 2 384 2.0	10.0 2 384 2.0	9.0 2 384 2.0	10.0 2 384 2.0	10331
10400	10.0 1 384 2.0	9.0 2 384 2.0	14.0 2 384 2.0	6.0 2 384 2.0	8.0 2 384 2.0	9.0 2 384 2.0	10.0 2 384 2.0	10400
10401	11.0 1 384 2.0	9.0 2 384 2.0	12.0 2 384 2.0	6.0 2 384 2.0	10.0 2 384 2.0	8.0 2 384 2.0	9.0 2 384 2.0	10401
10430	10.0 1 384 2.0	9.0 2 384 2.0	13.0 2 384 2.0	6.0 2 384 2.0	12.0 2 384 2.0	9.0 2 384 2.0	9.0 2 384 2.0	10430
10431	11.0 1 384 2.0	10.0 2 384 2.0	13.0 2 384 2.0	6.0 2 384 2.0	13.0 2 384 2.0	9.0 2 384 2.0	9.0 2 384 2.0	10431
10500	11.0 1 384 2.0	8.0 2 384 2.0	12.0 2 384 2.0	6.0 2 384 2.0	13.0 2 384 2.0	9.0 2 384 2.0	9.0 2 384 2.0	10500
10501	11.0 1 384 2.0	8.0 2 384 2.0	12.0 2 384 2.0	6.0 2 384 2.0	13.0 2 384 2.0	7.0 2 384 2.0	9.0 2 384 2.0	10501
10530	11.0 1 384 2.0	7.0 2 384 2.0	11.0 2 384 2.0	6.0 2 384 2.0	13.0 2 384 2.0	8.0 2 384 2.0	9.0 2 384 2.0	10530
10531	10.0 1 384 2.0	6.0 2 384 2.0	12.0 2 384 2.0	6.0 2 384 2.0	13.0 2 384 2.0	7.0 2 384 2.0	8.0 2 384 2.0	10531
10600	9.0 1 384 2.0	6.0 2 384 2.0	10.0 2 384 2.0	6.0 2 384 2.0	13.0 2 384 2.0	6.0 2 384 2.0	7.0 2 384 2.0	10600
10601	10.0 1 384 2.0	6.0 2 384 2.0	10.0 2 384 2.0	6.0 2 384 2.0	13.0 2 384 2.0	6.0 2 384 2.0	6.0 2 384 2.0	10601
10630	7.0 1 384 2.0	5.0 2 384 2.0	9.0 2 384 2.0	6.0 2 384 2.0	11.0 2 384 2.0	6.0 2 384 2.0	7.0 2 384 2.0	10630
10631	8.0 1 384 2.0	5.0 2 384 2.0	9.0 2 384 2.0	23	2.0 2 384 2.0	0.0 1 384 2.0	6.0 2 384 2.0	10631
10700	9.0 1 384 2.0	0.0 1 384 2.0	7.0 2 384 2.0	shutdown	0.0 1 384 2.0	shutdown	6.0 2 384 2.0	10700
10701	8.0 1 384 2.0	8.0 1 256 2.0	crash	shutdown	shutdown	shutdown	6.0 2 384 2.0	10701
10730	7.0 1 384 2.0	41.0 1 256 2.0	crash	shutdown	shutdown	shutdown	6.0 2 384 2.0	10730
10731	5.0 1 384 2.0	41.0 1 256 2.0	crash	shutdown	shutdown	shutdown	6.0 2 384 2.0	10731
10800	5.0 1 384 2.0	33.0 1 256 2.0	crash	shutdown	shutdown	shutdown	6.0 2 384 2.0	10800
10801	5.0 1 384 2.0	0.0 1 256 2.0	crash	shutdown	shutdown	shutdown	6.0 2 384 2.0	10801
10830	0.0 1 384 2.0	shutdown	crash	shutdown	shutdown	shutdown	7.0 2 384 2.0	10830
10831	shutdown	9.0 2 384 2.0	crash	shutdown	shutdown	shutdown	10.0 2 384 2.0	10831
10900	shutdown	15.0 2 384 2.0	14.0 2 384 2.0	shutdown	18.0 2 384 2.0	13.0 2 384 2.0	11.0 2 384 2.0	10900
10901	shutdown	22.0 2 384 2.0	30.0 2 384 2.0	shutdown	27.0 2 384 2.0	31.0 2 384 2.0	13.0 2 384 2.0	10901
10930	shutdown	32.0 2 384 2.0	38.0 2 384 2.0	shutdown	31.0 2 384 2.0	40.0 2 384 2.0	26	10930
10931	shutdown	36.0 2 384 2.0	47.0 2 384 2.0	20.0 2 384 2.0	41.0 2 384 2.0	39.0 2 384 2.0	9.0 2 384 2.0	10931
11000	shutdown	44.0 2 384 2.0	53.0 2 384 2.0	41.0 2 384 2.0	49.0 2 384 2.0	52.0 2 384 2.0	12.0 2 384 2.0	11000
11001	shutdown	48.0 2 384 2.0	54.0 2 384 2.0	45.0 2 384 2.0	60.0 2 384 2.0	65.0 2 384 2.0	14.0 2 384 2.0	11001
11030	shutdown	51.0 2 384 2.0	56.0 2 384 2.0	57.0 2 384 2.0	63.0 2 384 2.0	61.0 2 384 2.0	12.0 2 384 2.0	11030
11031	shutdown	60.0 2 384 2.0	58.0 2 384 2.0	65.0 2 384 2.0	66.0 2 384 2.0	66.0 2 384 2.0	13.0 2 384 2.0	11031
11100	shutdown	59.0 2 384 2.0	55.0 2 384 2.0	68.0 2 384 2.0	65.0 2 384 2.0	67.0 2 384 2.0	15.0 2 384 2.0	11100
11101	shutdown	57.0 2 384 2.0	62.0 2 384 2.0	74.0 2 384 2.0	62.0 2 384 2.0	67.0 2 384 2.0	17.0 2 384 2.0	11101
11130	shutdown	63.0 2 384 2.0	60.0 2 384 2.0	72.0 2 384 2.0	57.0 2 384 2.0	57.0 2 384 2.0	17.0 2 384 2.0	11130
11131	shutdown	59.0 2 384 2.0	57.0 2 384 2.0	68.0 2 384 2.0	53.0 2 384 2.0	51.0 2 384 2.0	19.0 2 384 2.0	11131
11200	shutdown	54.0 2 384 2.0	57.0 2 384 2.0	65.0 2 384 2.0	48.0 2 384 2.0	46.0 2 384 2.0	17.0 2 384 2.0	11200
11201	shutdown	51.0 2 384 2.0	58.0 2 384 2.0	63.0 2 384 2.0	51.0 2 384 2.0	49.0 2 384 2.0	17.0 2 384 2.0	11201
11230	shutdown	55.0 2 384 2.0	59.0 2 384 2.0	61.0 2 384 2.0	56.0 2 384 2.0	50.0 2 384 2.0	18.0 2 384 2.0	11230
11231	shutdown	52.0 2 384 2.0	57.0 2 384 2.0	57.0 2 384 2.0	57.0 2 384 2.0	48.0 2 384 2.0	19.0 2 384 2.0	11231
11300	shutdown	52.0 2 384 2.0	54.0 2 384 2.0	54.0 2 384 2.0	56.0 2 384 2.0	48.0 2 384 2.0	19.0 2 384 2.0	11300
11301	shutdown	49.0 2 384 2.0	51.0 2 384 2.0	63.0 2 384 2.0	58.0 2 384 2.0	53.0 2 384 2.0	17.0 2 384 2.0	11301
11330	shutdown	49.0 2 384 2.0	51.0 2 384 2.0	60.0 2 384 2.0	62.0 2 384 2.0	55.0 2 384 2.0	19.0 2 384 2.0	11330
11331	shutdown	53.0 2 384 2.0	55.0 2 384 2.0	64.0 2 384 2.0	62.0 2 384 2.0	58.0 2 384 2.0	21.0 2 384 2.0	11331
11400	shutdown	54.0 2 384 2.0	56.0 2 384 2.0	61.0 2 384 2.0	61.0 2 384 2.0	25	18.0 2 384 2.0	11400
11401	shutdown	65.0 2 384 2.0	61.0 2 384 2.0	61.0 2 384 2.0	62.0 2 384 2.0	25	19.0 2 384 2.0	11401
11430	shutdown	62.0 2 384 2.0	63.0 2 384 2.0	66.0 2 384 2.0	67.0 2 384 2.0	25	21.0 2 384 2.0	11430
11431	shutdown	69.0 2 384 2.0	64.0 2 384 2.0	73.0 2 384 2.0	62.0 2 384 2.0	25	23.0 2 384 2.0	11431
11500	shutdown	crash	68.0 2 384 2.0	73.0 2 384 2.0	69.0 2 384 2.0	27.0 2 384 2.0	24.0 2 384 2.0	11500
11501	shutdown	crash	68.0 2 384 2.0	72.0 2 384 2.0	61.0 2 384 2.0	49.0 2 384 2.0	22.0 2 384 2.0	11501
11530	shutdown	crash	71.0 2 384 2.0	73.0 2 384 2.0	55.0 2 384 2.0	60.0 2 384 2.0	26.0 2 384 2.0	11530
11531	shutdown	crash	67.0 2 384 2.0	70.0 2 384 2.0	55.0 2 384 2.0	62.0 2 384 2.0	25.0 2 384 2.0	11531
11600	shutdown	crash	70.0 2 384 2.0	75.0 2 384 2.0	57.0 2 384 2.0	63.0 2 384 2.0	24.0 2 384 2.0	11600
11601	shutdown	crash	65.0 2 384 2.0	72.0 2 384 2.0	60.0 2 384 2.0	63.0 2 384 2.0	22.0 2 384 2.0	11601
11630	shutdown	crash	61.0 2 384 2.0	67.0 2 384 2.0	57.0 2 384 2.0	63.0 2 384 2.0	27.0 2 384 2.0	11630
11631	13.0 2 384 2.0	crash	61.0 2 384 2.0	67.0 2 384 2.0	57.0 2 384 2.0	61.0 2 384 2.0	20.0 2 384 2.0	11631
11700	15.0 2 384 2.0	16.0 2 384 2.0	54.0 2 384 2.0	58.0 2 384 2.0	53.0 2 384 2.0	55.0 2 384 2.0	20.0 2 384 2.0	11700
11701	20.0 2 384 2.0	33.0 2 384 2.0	42.0 2 384 2.0	51.0 2 384 2.0	42.0 2 384 2.0	53.0 2 384 2.0	23.0 2 384 2.0	11701
11730	18.0 2 384 2.0	41.0 2 384 2.0	42.0 2 384 2.0	37.0 2 384 2.0	39.0 2 384 2.0	49.0 2 384 2.0	23.0 2 384 2.0	11730
11731	13.0 2 384 2.0	52.0 2 384 2.0	34.0 2 384 2.0	34.0 2 384 2.0	33.0 2 384 2.0	43.0 2 384 2.0	21.0 2 384 2.0	11731
11800	17.0 2 384 2.0	46.0 2 384 2.0	33.0 2 384 2.0	35.0 2 384 2.0	31.0 2 384 2.0	35.0 2 384 2.0	16.0 2 384 2.0	11800
11801	16.0 2 384 2.0	39.0 2 384 2.0	38.0 2 384 2.0	34.0 2 384 2.0	38.0 2 384 2.0	35.0 2 384 2.0	20.0 2 384 2.0	11801
11830	15.0 2 384 2.0	36.0 2 384 2.0	31.0 2 384 2.0	29.0 2 384 2.0	34.0 2 384 2.0	32.0 2 384 2.0	14.0 2 384 2.0	11830
11900	15.0 2 384 2.0	35.0 2 384 2.0	30.0 2 384 2.0	31.0 2 384 2.0	35.0 2 384 2.0	31.0 2 384 2.0	18.0 2 384 2.0	11900
11901	14.0 2 384 2.0	27.0 2 384 2.0	29.0 2 384 2.0	29.0 2 384 2.0	31.0 2 384 2.0	32.0 2 384 2.0	23.0 2 384 2.0	11901
11930	14.0 2 384 2.0	26.0 2 384 2.0	27.0 2 384 2.0	23.0 2 384 2.0	29.0 2 384 2.0	26.0 2 384 2.0	21.0 2 384 2.0	11930
11931	14.0 2 384 2.0	28.0 2 384 2.0	28.0 2 384 2.0	22.0 2 384 2.0	29.0 2 384 2.0	23.0 2 384 2.0	19.0 2 384 2.0	11931
12000	14.0 2 384 2.0	29.0 2 384 2.0	31.0 2 384 2.0	24.0 2 384 2.0	33.0 2 384 2.0	23.0 2 384 2.0	14.0 2 384 2.0	12000
12001	14.0 2 384 2.0	28.0 2 384 2.0	32.0 2 384 2.0	24.0 2 384 2.0	crash	24.0 2 384 2.0	14.0 2 384 2.0	12001
12030	17.0 2 384 2.0	27.0 2 384 2.0	42.0 2 384 2.0	22.0 2 384 2.0	crash	23.0 2 384 2.0	15.0 2 384 2.0	12030
12031	17.0 2 384 2.0	26.0 2 384 2.0	35.0 2 384 2.0	23.0 2 384 2.0	crash	22.0 2 384 2.0	16.0 2 384 2.0	12031
12100	16.0 2 384 2.0	28.0 2 384 2.0	31.0 2 384 2.0	26.0 2 384 2.0	crash	22.0 2 384 2.0	16.0 2 384 2.0	12100
12101	16.0 2 384 2.0	28.0 2 384 2						

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