

F O R U M L I S T

RECEIVED
DEC 3 1975
J. H. SALTZER

G. Ackerman-Lewis

W. Burner

D. Clark

C. Clingen

R. Daley

W. Flaherty

J. Gintell

D. Jordan

G. Lundberg

J. Register

Prof. J. Saltzer

R. Shoemaker

TO: List of Attendees

cc: List

SUBJECT: Forum Minutes for November 19, 1975

ATTENDEES: R. J. Chevalier R. A. Roach
 P. B. Kelley L. J. Ryan
 E. D. Kleinow J. R. Steinberg
 W. McFall

HARDWARE - E. D. Kleinow

- MTH500 . Replaced faulty package in unit 2.
- DSU190A . Additional unit installed and in the system as of today (November 19).
- DSU190B . Unit 4 down with port interface problem.
- PRT202 . Clutch unit replaced. Drive belt replaced.
- Processors . CPUB - SCU-A. T&D's showed failure of ME board. FED replaced.
 - . Parity error caught by Processor A crashed system. FED took cache off-line on Friday, returned cache on Monday. No recurrence of problem. FED monitoring.
 - . SCU-C, Stor-A. Voltage regulator had fault condition. FED reset margins.
 - . SCU-A port logic problem. MX board replaced. SCU-C core size had been set to 128K and should have been 64K. (6 hours down).
- DN355 . TDM failed and crashed system (11-14-75). Unit went out of sync. Leo informed Billerica, then successfully reset each modem and unit. Leo requested that a TDM manual be made available for use in the computer room. Chevalier will contact Flaherty for this.



SOFTWARE - P. B. Kelley

- MDS-2400 . Crashed system from Billerica.
Mike Grady is looking into this problem.

- DN355 . Grady also investigating problem with
DN355 buffer allocation.

- . Paul Green looking into answering service
problem.

BILLERICA

- . Roach says that Billerica is not using
Load Control Group and wants to add it
back to the pool of primary lines.
Roger will pursue this further with R. Reeves.



1



Massachusetts Institute of Technology
Programming Development Office
Cambridge, Massachusetts 02139

To: Forum Attendants
From: Grace E. Ackerman-Lewis
Date: November 19, 1975
Subject: Multics Availability November 3 - November 16

Summary of Lost Time

	# of Crashes	Crashes	Time Lost Other	Total
	-----	-----	-----	-----
Software Suspected:	1	00:07	0:00	00:07
Hardware:	7	10:02	3:49	13:51
Not Analyzable:	1	01:55	0:00	01:55
Not Yet Analyzed:	3	00:58	0:00	00:58
-----	-----	-----	-----	-----
Total:	12	13:02	3:49	16:51

Total lost time/Scheduled up time = 16:51/158:30 = 1.05 (89.5% up time)

Total lost time/Unattended up time = 11:20/124:30 = .090 (90.0% up time)

November month-to-date lost time 11:20 (unattended)

November month-to-date lost time 17:00 (scheduled)

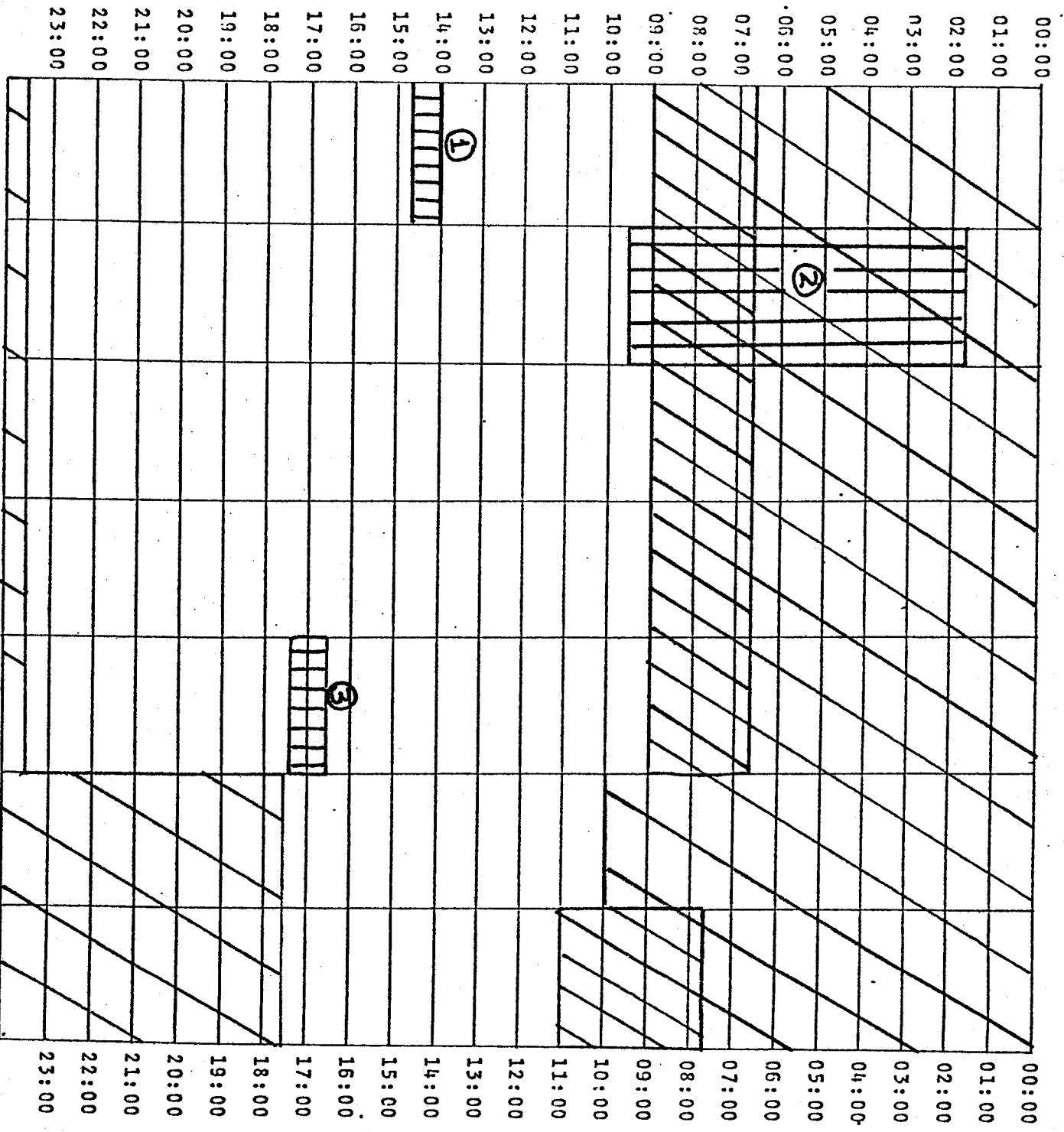
Down At Time Lost Up At

1 14:02 11/03 - 14:37 11/03 Crash, ERF 429
 2 01:45 11/04 - 09:22 11/04 Crash, ERF 430
 3 16:42 11/07 - 17:26 11/07 Crash, ERF 431
 4 19:15 11/10 - 19:22 11/10 Crash, ERF 432
 5 08:05 11/11 - 10:55 11/11 Crash, ERF 433
 6 14:19 11/12 - 14:42 11/12 Crash, ERF 434
 7 08:35 11/13 - 08:44 11/13 Crash, ERF 435
 8 12:00 11/13 - 20:26 11/13 Crash, ERF 436
 9 22:13 11/13 - 22:18 11/13 Crash, ERF 437
 10 09:24 11/14 - 16:03 11/14 Crash, ERF 438
 11 15:38 11/14 - 16:03 11/14 Crash, ERF 439
 12 20:30 11/16 - 24:00 11/16 Crash, ERF 440

Time Lost
 Due to

00:35 NYA RTB, no message
 07:37 H Parity error, CPU-A
 00:44 H Parity error, CPU-A
 00:07 S? DN355 problem with Billerica MDS2400
 02:50 H Parity error SCU-A Store A
 00:23 NYA Problem with 355 buffer allocator
 00:09 NYA Answering service problem
 08:26 H Parity error SCU-A Store A
 00:05 H Parity error CPU-A
 01:55 NA No dump could be taken, had to reboot BOS
 00:25 H TDM went out of synch
 03:30 H Parity error SCU-A Store A&B

Monday 11/3
Tuesday 11/4
Wednesday 11/5
Thursday 11/6
Friday 11/7
Saturday 11/8
Sunday 11/9



Monday
11/10

Tuesday
11/11

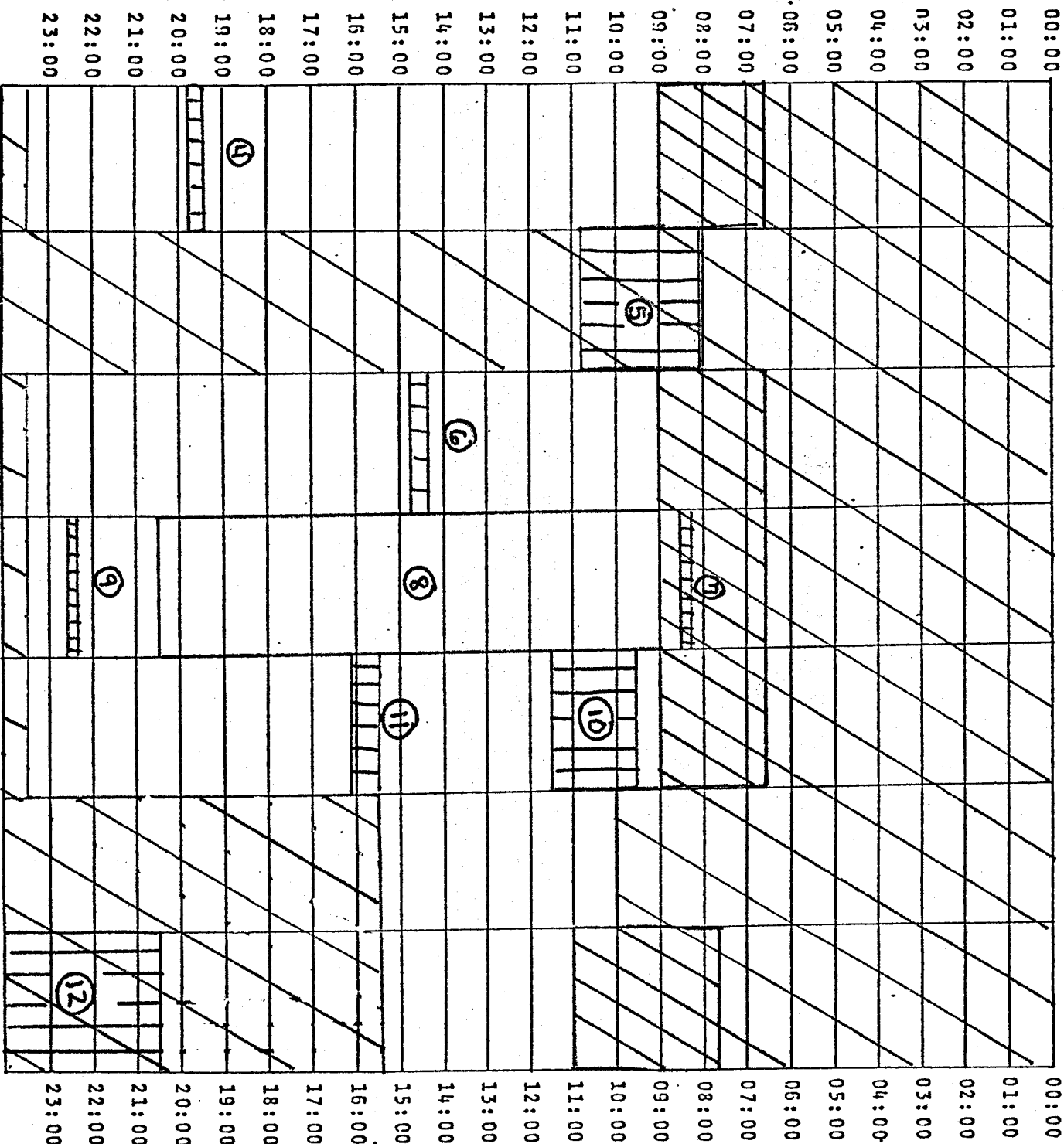
Wednesday
11/12

Thursday
11/13

Friday
11/14

Saturday
11/15

Sunday
11/16



To: Administrative Distribution
From: Grace Ackerman-Lewis
Date: November 19, 1975
Subject: Multics Crash Analysis for November 3 to November 16

Total number of crashes = 12 (ERFs 429 - 440)

Hardware:

Parity error CPU-A	3
Parity error SCU-A Store A	2
Parity error SCU-A Store A&B	1
TDM went out of synch	1

Total:	7

Not Yet Analyzed:

Return to BOS, no message	1
355 buffer problem	1
Probable answering service bug	1

Total:	3

Not Analyzable:

Initializer process went blocked	1

Total:	1

Software Suspected:

JN355 problem with MDS2400	1

Total:	1

#	sys.	date	time	type	brief explanation
440	27.2c	11/16/75	20:30	H	Parity error SCU-A Store A&B
	27.2c	11/15/75			NO CRASHES
439	27.2c	11/14/75	15:38	H	TOM went out of synch
438	27.2c	11/14/75	09:24	NA	Probable parity errors, system loop had to reboot 80S, no dump
437	27.2c	11/13/75	22:13	H	Parity errors CPU-A
436	27.2c	11/13/75	12:00	H	Parity errors SCU-A Store A
435	27.2c	11/13/75	08:35	NYA	Initializer hung during swap of initializer consoles
434	27.2c	11/12/75	14:18	NYA	Emergency Interrupt from 355, buffer allocation failed
433	27.2c	11/11/75	08:40	H	Parity errors SCU-A Store A
432	27.2b	11/10/75	19:15	S?	Problem handling RNP
	27.2a	11/09/75			NO CRASHES
	27.2a	11/08/75			NO CRASHES
431	27.2	11/07/75	16:41	H	Parity errors CPU-A
430	27.1a	11/04/75	05:30	H	Parity error CPU-A
429	27.1a	11/03/75	14:02	NYA	Return to 80S, no message

386 11/14/75 1 Salvener 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 dmw Bug(s) exist in Network locking software -> pass timeouts
 385 11/14/75 2 Problems exist with channel definition table (password suppress, etc.)
 383 08/21/75 2 copyr/pt_archive fails if archive longer than 64k
 381 08/21/75 2 shw shutdown with 2 CPUs may not work (depends on which CPU is used for shutdown)
 350 01/02/75 2 mjr Users who happen may not be logged out
 348 12/03/74 2 tac security problems in the automatic creating of home directories
 382 08/21/75 3 add_convr/ht 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 (MRF 8588)
 378 07/30/75 3 mam qedx won't edit some long (56k) segments (P/PF 8591)
 375 05/22/75 3 nlm printer dlm does not raise hood when out of paper (if in ncp mode or printing head sheet)
 369 06/10/75 3 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 (P/PF 8010)
 362 03/02/75 3 srh delete_name gives incorrect error message on a mser (buf in cname_\$file)
 359 01/02/75 3 hsr initialize_peak_limits leaves old (possibly dangerous) limit table on an error (missing seg)
 358 02/27/75 3 rah FXL compiler faults if used for 1st time after debug has listed object code (fixed with prelinking)
 354 02/12/75 3 hsr initialize_peak_limits fails if ANY error is encountered while processing (security problem?)
 338 09/26/74 3 restarted printer requests indicate a zero charge (\$0.00)
 324 08/27/74 3 tvv 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 salvener (after clean shutdown) is detecting bad filemap checksums
 282 05/05/74 3 mam qedx fails to find expressions like /a.b.c.a.b.d/ in strings like "a.b.c.a.b.d"
 240 01/10/74 3 HSS 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 rrh remaining directories does not terminate them and can cause serious problems

*** - fix completed (to be installed)

Inst - fix installed

(END)

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

084			
083	06/13/75	***	2
082	04/19/75	***	2
081	01/15/75	Inst	
080	01/15/75	ENG	2
079	10/14/74	Inst	2
078	10/14/74	Inst	
077	10/14/74	***	2
076	09/05/74	Inst	
075	08/26/74	Inst	
074	08/05/74	Inst	
073	05/02/74	***	1
072	05/02/74	Inst	1
071	05/02/74	***	2
070	03/25/74	Inst	
069	03/18/74	Inst	
068	03/11/74	Inst	
067	02/14/74	Inst	
066	02/14/74	Inst	
065	02/13/74	Inst	
064	02/12/74	Inst	
063	02/06/74	Inst	
062	02/04/74	Inst	
061	01/24/74	Inst	
060	01/12/74	Inst	
059	01/12/74	Inst	
058	01/12/74	Inst	
057	01/03/74	Inst	
056	01/03/74	Inst	
042	10/13/73	Inst	

CSL causes 2-bit shift at bounds/fault boundary (PHAB-PG070)
 IPR faults occur if target string of move (etc) is zero length.
 CMFN does not always work
 CMPC sometimes fails
 Bounds faults not being recognized on decimal instructions (PHAB-PE036, PHAB-PG060)
 Ring alarm faults are only sampled at RTCD time (PHAB-PE052)
 Packed pointer load faults (FC0 released)
 CMPC sometimes fails at page boundaries.
 MLR sometimes stores extra fill characters.
 CMPC sometimes fails with multiple page faults.
 MLR (CMPC, etc) will not work with 1048576 characters.
 ADWP sometimes fetches operand from even word instead of odd.
 CMPB fails with certain bit offsets not on character boundaries.
 XED'd instructions fail to do indexing correctly (PHAB-PE052)
 MLR and CMPC place fill characters in last few words at page bdry
 MPY gets overflow on -2**35 Inst -2**35.
 MLR sometimes places 8 zeros near page boundary.
 MVN gets fixedoverflow when moving 02.
 MLR sometimes changes a single character to fill character at page boundary.
 MLR moves 8 characters extra at page boundary.
 CMPC fails at connect fault time processing fill chars.
 CSL instruction fails across bound/fault boundaries.
 MVT sometimes fails if take page fault on table.
 MLR gets op-not-completes.
 MLR get no-write-permission by miscalculating TSR.
 CMPC sometimes gives wrong results.
 MLR instruction fails across bound/fault boundaries.
 SREG gets op-not-complete if at end of page.
 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 11/08/75 2359.0

Time	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Time
0000	14.0 2 384 2.0	14.0 2 384 2.0	25.0 2 384 2.0	15.0 2 384 2.0	16.0 2 384 2.0	14.0 2 384 2.0	13.0 1 384 2.0	0000
0030	12.0 2 384 2.0	12.0 2 384 2.0	16.0 2 384 2.0	14.0 2 384 2.0	17.0 2 384 2.0	12.0 2 384 2.0	16.0 1 384 2.0	0030
0100	11.0 2 384 2.0	11.0 2 384 2.0	18.0 2 384 2.0	14.0 2 384 2.0	15.0 2 384 2.0	10.0 2 384 2.0	16.0 1 384 2.0	0100
0130	9.0 2 384 2.0	9.0 2 384 2.0	11.0 2 384 2.0	11.0 2 384 2.0	12.0 2 384 2.0	11.0 2 384 2.0	12.0 1 384 2.0	0130
0200	8.0 2 384 2.0	8.0 2 384 2.0	10.0 2 384 2.0	9.0 2 384 2.0	11.0 2 384 2.0	9.0 2 384 2.0	11.0 1 384 2.0	0200
0230	9.0 2 384 2.0	9.0 2 384 2.0	9.0 2 384 2.0	8.0 2 384 2.0	11.0 2 384 2.0	9.0 2 384 2.0	9.0 1 384 2.0	0230
0300	9.0 2 384 2.0	7.0 2 384 2.0	9.0 2 384 2.0	8.0 2 384 2.0	9.0 2 384 2.0	7.0 2 384 2.0	7.0 1 384 2.0	0300
0330	8.0 2 384 2.0	5.0 2 384 2.0	8.0 2 384 2.0	7.0 2 384 2.0	9.0 2 384 2.0	8.0 2 384 2.0	8.0 1 384 2.0	0330
0400	10.0 2 384 2.0	5.0 2 384 2.0	8.0 2 384 2.0	7.0 2 384 2.0	7.0 2 384 2.0	7.0 2 384 2.0	6.0 1 384 2.0	0400
0430	9.0 2 384 2.0	5.0 2 384 2.0	6.0 2 384 2.0	9.0 2 384 2.0	8.0 2 384 2.0	8.0 2 384 2.0	6.0 1 384 2.0	0430
0500	9.0 2 384 2.0	5.0 2 384 2.0	6.0 2 384 2.0	7.0 2 384 2.0	8.0 2 384 2.0	8.0 2 384 2.0	5.0 1 384 2.0	0500
0530	8.0 2 384 2.0	5.0 2 384 2.0	430	7.0 2 384 2.0	8.0 2 384 2.0	8.0 2 384 2.0	5.0 1 384 2.0	0530
0600	6.0 2 384 2.0	5.0 2 384 2.0	430	7.0 2 384 2.0	7.0 2 384 2.0	6.0 2 384 2.0	5.0 1 384 2.0	0600
0630	6.0 2 384 2.0	7.0 2 384 2.0	430	7.0 2 384 2.0	7.0 2 384 2.0	6.0 2 384 2.0	5.0 1 384 2.0	0630
0700	6.0 2 384 2.0	6.0 2 384 2.0	430	0.0 1 384 2.0	0.0 1 256 2.0	0.0 1 384 2.0	5.0 1 384 2.0	0700
0730	6.0 2 384 2.0	shutdown	430	shutdown	41.0 1 256 2.0	shutdown	5.0 1 384 2.0	0730
0800	5.0 2 384 2.0	shutdown	430	shutdown	41.0 1 256 2.0	shutdown	6.0 1 384 2.0	0800
0830	0.0 1 384 2.0	shutdown	430	shutdown	41.0 1 256 2.0	shutdown	6.0 1 384 2.0	0830
0900	shutdown	shutdown	430	shutdown	41.0 1 256 2.0	shutdown	8.0 1 384 2.0	0900
0930	shutdown	27.0 2 384 2.0	430	27.0 2 384 2.0	28.0 2 384 2.0	34.0 2 384 2.0	8.0 1 384 2.0	0930
1000	shutdown	41.0 2 384 2.0	12.0 2 384 2.0	38.0 2 384 2.0	47.0 2 384 2.0	41.0 2 384 2.0	0.0 1 384 2.0	1000
1030	shutdown	37.0 2 384 2.0	45.0 2 384 2.0	40.0 2 384 2.0	45.0 2 384 2.0	38.0 2 384 2.0	9.0 1 384 2.0	1030
1100	11.0 2 384 2.0	49.0 2 384 2.0	57.0 2 384 2.0	46.0 2 384 2.0	46.0 2 384 2.0	44.0 2 384 2.0	9.0 1 384 2.0	1100
1130	13.0 2 384 2.0	48.0 2 384 2.0	46.0 2 384 2.0	41.0 2 384 2.0	57.0 2 384 2.0	58.0 2 384 2.0	15.0 2 384 2.0	1130
1200	13.0 2 384 2.0	43.0 2 384 2.0	41.0 2 384 2.0	46.0 2 384 2.0	53.0 2 384 2.0	60.0 2 384 2.0	22.0 2 384 2.0	1200
1230	428	36.0 2 384 2.0	39.0 2 384 2.0	50.0 2 384 2.0	48.0 2 384 2.0	40.0 2 384 2.0	16.0 2 384 2.0	1230
1300	10.0 2 384 2.0	30.0 2 384 2.0	50.0 2 384 2.0	39.0 2 384 2.0	39.0 2 384 2.0	45.0 2 384 2.0	15.0 2 384 2.0	1300
1330	16.0 2 384 2.0	41.0 2 384 2.0	44.0 2 384 2.0	35.0 2 384 2.0	44.0 2 384 2.0	51.0 2 384 2.0	20.0 2 384 2.0	1330
1400	18.0 2 384 2.0	42.0 2 384 2.0	44.0 2 384 2.0	42.0 2 384 2.0	45.0 2 384 2.0	53.0 2 384 2.0	21.0 2 384 2.0	1400
1430	19.0 2 384 2.0	429	49.0 2 384 2.0	49.0 2 384 2.0	55.0 2 384 2.0	63.0 2 384 2.0	19.0 2 384 2.0	1430
1500	21.0 2 384 2.0	429	45.0 2 384 2.0	60.0 2 384 2.0	53.0 2 384 2.0	63.0 2 384 2.0	19.0 2 384 2.0	1500
1530	22.0 2 384 2.0	429	51.0 2 384 2.0	55.0 2 384 2.0	54.0 2 384 2.0	72.0 2 384 2.0	18.0 2 384 2.0	1530
1600	19.0 2 384 2.0	25.0 2 384 2.0	53.0 2 384 2.0	63.0 2 384 2.0	53.0 2 384 2.0	63.0 2 384 2.0	23.0 2 384 2.0	1600
1630	24.0 2 384 2.0	48.0 1 384 2.0	51.0 2 384 2.0	59.0 2 384 2.0	50.0 2 384 2.0	66.0 2 384 2.0	24.0 2 384 2.0	1630
1700	24.0 2 384 2.0	55.0 1 384 2.0	56.0 2 384 2.0	63.0 2 384 2.0	61.0 2 384 2.0	60.0 2 384 2.0	23.0 2 384 2.0	1700
1730	21.0 2 384 2.0	59.0 2 384 2.0	54.0 2 384 2.0	55.0 2 384 2.0	64.0 2 384 2.0	60.0 2 384 2.0	21.0 2 384 2.0	1730
1800	22.0 2 384 2.0	61.0 2 384 2.0	56.0 2 384 2.0	49.0 2 384 2.0	61.0 2 384 2.0	64.0 2 384 2.0	21.0 2 384 2.0	1800
1830	24.0 2 384 2.0	58.0 2 384 2.0	61.0 2 384 2.0	52.0 2 384 2.0	68.0 2 384 2.0	57.0 2 384 2.0	20.0 2 384 2.0	1830
1900	24.0 2 384 2.0	56.0 2 384 2.0	59.0 2 384 2.0	58.0 2 384 2.0	59.0 2 384 2.0	60.0 2 384 2.0	22.0 2 384 2.0	1900
1930	24.0 2 384 2.0	52.0 2 384 2.0	57.0 2 384 2.0	55.0 2 384 2.0	64.0 2 384 2.0	431	22.0 2 384 2.0	1930
2000	24.0 2 384 2.0	48.0 2 384 2.0	47.0 2 384 2.0	55.0 2 384 2.0	59.0 2 384 2.0	431	20.0 2 384 2.0	2000
2030	21.0 2 384 2.0	45.0 2 384 2.0	45.0 2 384 2.0	47.0 2 384 2.0	53.0 2 384 2.0	431	22.0 2 384 2.0	2030
2100	22.0 2 384 2.0	36.0 2 384 2.0	39.0 2 384 2.0	40.0 2 384 2.0	39.0 2 384 2.0	431	22.0 2 384 2.0	2100
2130	22.0 2 384 2.0	30.0 2 384 2.0	32.0 2 384 2.0	31.0 2 384 2.0	35.0 2 384 2.0	12.0 1 384 2.0	13.0 2 384 2.0	2130
2200	15.0 2 384 2.0	32.0 2 384 2.0	27.0 2 384 2.0	27.0 2 384 2.0	31.0 2 384 2.0	28.0 1 384 2.0	12.0 2 384 2.0	2200
2230	15.0 2 384 2.0	32.0 2 384 2.0	28.0 2 384 2.0	32.0 2 384 2.0	28.0 2 384 2.0	32.0 1 384 2.0	10.0 2 384 2.0	2230
2300	15.0 2 384 2.0	29.0 2 384 2.0	30.0 2 384 2.0	27.0 2 384 2.0	25.0 2 384 2.0	24.0 1 384 2.0	12.0 2 384 2.0	2300
2330	15.0 2 384 2.0	24.0 2 384 2.0	27.0 2 384 2.0	25.0 2 384 2.0	28.0 2 384 2.0	28.0 1 384 2.0	12.0 2 384 2.0	2330
2400	15.0 2 384 2.0	23.0 2 384 2.0	26.0 2 384 2.0	20.0 2 384 2.0	27.0 2 384 2.0	28.0 1 384 2.0	12.0 2 384 2.0	2400
2430	15.0 2 384 2.0	24.0 2 384 2.0	25.0 2 384 2.0	22.0 2 384 2.0	28.0 2 384 2.0	26.0 1 384 2.0	12.0 2 384 2.0	2430
2500	15.0 2 384 2.0	21.0 2 384 2.0	29.0 2 384 2.0	21.0 2 384 2.0	21.0 2 384 2.0	26.0 1 384 2.0	10.0 2 384 2.0	2500
2530	15.0 2 384 2.0	24.0 2 384 2.0	26.0 2 384 2.0	26.0 2 384 2.0	24.0 2 384 2.0	26.0 1 384 2.0	11.0 2 384 2.0	2530
2600	15.0 2 384 2.0	28.0 2 384 2.0	28.0 2 384 2.0	26.0 2 384 2.0	26.0 2 384 2.0	24.0 1 384 2.0	12.0 2 384 2.0	2600
2630	15.0 2 384 2.0	28.0 2 384 2.0	28.0 2 384 2.0	21.0 2 384 2.0	22.0 2 384 2.0	23.0 1 384 2.0	12.0 2 384 2.0	2630
2700	15.0 2 384 2.0	29.0 2 384 2.0	26.0 2 384 2.0	23.0 2 384 2.0	25.0 2 384 2.0	26.0 1 384 2.0	11.0 2 384 2.0	2700
2730	15.0 2 384 2.0	32.0 2 384 2.0	26.0 2 384 2.0	24.0 2 384 2.0	25.0 2 384 2.0	25.0 1 384 2.0	10.0 2 384 2.0	2730
2800	15.0 2 384 2.0	31.0 2 384 2.0	25.0 2 384 2.0	21.0 2 384 2.0	28.0 2 384 2.0	22.0 1 384 2.0	11.0 2 384 2.0	2800
2830	15.0 2 384 2.0	30.0 2 384 2.0	29.0 2 384 2.0	25.0 2 384 2.0	30.0 2 384 2.0	21.0 1 384 2.0	10.0 2 384 2.0	2830
2900	15.0 2 384 2.0	31.0 2 384 2.0	30.0 2 384 2.0	25.0 2 384 2.0	29.0 2 384 2.0	21.0 1 384 2.0	9.0 2 384 2.0	2900
2930	15.0 2 384 2.0	29.0 2 384 2.0	31.0 2 384 2.0	25.0 2 384 2.0	31.0 2 384 2.0	21.0 1 384 2.0	8.0 2 384 2.0	2930
3000	15.0 2 384 2.0	28.0 2 384 2.0	30.0 2 384 2.0	21.0 2 384 2.0	31.0 2 384 2.0	22.0 1 384 2.0	8.0 2 384 2.0	3000
3030	15.0 2 384 2.0	27.0 2 384 2.0	30.0 2 384 2.0	21.0 2 384 2.0	29.0 2 384 2.0	23.0 1 384 2.0	10.0 2 384 2.0	3030
3100	15.0 2 384 2.0	29.0 2 384 2.0	26.0 2 384 2.0	24.0 2 384 2.0	27.0 2 384 2.0	20.0 1 384 2.0	11.0 2 384 2.0	3100
3130	15.0 2 384 2.0	27.0 2 384 2.0	25.0 2 384 2.0	22.0 2 384 2.0	28.0 2 384 2.0	17.0 1 384 2.0	8.0 2 384 2.0	3130
3200	15.0 2 384 2.0	28.0 2 384 2.0	22.0 2 384 2.0	20.0 2 384 2.0	21.0 2 384 2.0	18.0 1 384 2.0	7.0 2 384 2.0	3200
3230	15.0 2 384 2.0	28.0 2 384 2.0	22.0 2 384 2.0	22.0 2 384 2.0	20.0 2 384 2.0	19.0 1 384 2.0	11.0 2 384 2.0	3230
3300	15.0 2 384 2.0	24.0 2 384 2.0	18.0 2 384 2.0	19.0 2 384 2.0	17.0 2 384 2.0	18.0 1 384 2.0	10.0 2 384 2.0	3300
3330	15.0 2 384 2.0	26.0 2 384 2.0	19.0 2 384 2.0	19.0 2 384 2.0	18.0 2 384 2.0	18.0 1 384 2.0	9.0 2 384 2.0	3330

Multics availability for last week to 11/15/75 2355.0

Time	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Time
100001	10.0 2 384 2.01	6.0 2 384 2.01	19.0 2 384 2.01	18.0 1 256 2.01	29.0 2 256 2.01	14.0 2 384 2.01	11.0 2 384 2.01	100001
	10.0 2 384 2.01	11.0 2 384 2.01	15.0 2 384 2.01	21.0 1 256 2.01	26.0 2 256 2.01	13.0 2 384 2.01	14.0 2 384 2.01	
100301	8.0 2 384 2.01	10.0 2 384 2.01	15.0 2 384 2.01	20.0 1 256 2.01	20.0 2 256 2.01	11.0 2 384 2.01	12.0 2 384 2.01	100301
	9.0 2 384 2.01	10.0 2 384 2.01	15.0 2 384 2.01	20.0 1 256 2.01	19.0 2 256 2.01	10.0 2 384 2.01	12.0 2 384 2.01	
101001	10.0 2 384 2.01	9.0 2 384 2.01	16.0 2 384 2.01	20.0 1 256 2.01	18.0 2 256 2.01	10.0 2 384 2.01	12.0 2 384 2.01	101001
	9.0 2 384 2.01	9.0 2 384 2.01	16.0 2 384 2.01	18.0 1 256 2.01	15.0 2 256 2.01	10.0 2 384 2.01	11.0 2 384 2.01	
101301	8.0 2 384 2.01	7.0 2 384 2.01	16.0 2 384 2.01	17.0 1 256 2.01	14.0 2 256 2.01	9.0 2 384 2.01	12.0 2 384 2.01	101301
	8.0 2 384 2.01	6.0 2 384 2.01	17.0 2 384 2.01	15.0 1 256 2.01	13.0 2 256 2.01	9.0 2 384 2.01	11.0 2 384 2.01	
102001	8.0 2 384 2.01	6.0 2 384 2.01	20.0 2 384 2.01	16.0 1 256 2.01	13.0 2 256 2.01	8.0 2 384 2.01	11.0 2 384 2.01	102001
	10.0 2 384 2.01	7.0 2 384 2.01	17.0 2 384 2.01	13.0 1 256 2.01	11.0 2 256 2.01	8.0 2 384 2.01	9.0 2 384 2.01	
102301	10.0 2 384 2.01	7.0 2 384 2.01	18.0 2 384 2.01	9.0 1 256 2.01	9.0 2 256 2.01	9.0 2 384 2.01	9.0 2 384 2.01	102301
	11.0 2 384 2.01	8.0 2 384 2.01	17.0 2 384 2.01	12.0 1 256 2.01	8.0 2 256 2.01	8.0 2 384 2.01	7.0 2 384 2.01	
103001	10.0 2 384 2.01	7.0 2 384 2.01	16.0 2 384 2.01	13.0 1 256 2.01	8.0 2 256 2.01	7.0 2 384 2.01	7.0 2 384 2.01	103001
	9.0 2 384 2.01	7.0 2 384 2.01	14.0 2 384 2.01	12.0 1 256 2.01	8.0 2 256 2.01	7.0 2 384 2.01	9.0 2 384 2.01	
103301	9.0 2 384 2.01	7.0 2 384 2.01	15.0 2 384 2.01	13.0 1 256 2.01	7.0 2 256 2.01	7.0 2 384 2.01	10.0 2 384 2.01	103301
	7.0 2 384 2.01	7.0 2 384 2.01	16.0 2 384 2.01	13.0 1 256 2.01	7.0 2 256 2.01	6.0 2 384 2.01	8.0 2 384 2.01	
104001	7.0 2 384 2.01	6.0 2 384 2.01	16.0 2 384 2.01	13.0 1 256 2.01	6.0 2 256 2.01	6.0 2 384 2.01	7.0 2 384 2.01	104001
	7.0 2 384 2.01	6.0 2 384 2.01	17.0 2 384 2.01	12.0 1 256 2.01	6.0 2 256 2.01	6.0 2 384 2.01	7.0 2 384 2.01	
104301	7.0 2 384 2.01	6.0 2 384 2.01	17.0 2 384 2.01	12.0 1 256 2.01	6.0 2 256 2.01	7.0 2 384 2.01	6.0 2 384 2.01	104301
	7.0 2 384 2.01	6.0 2 384 2.01	17.0 2 384 2.01	12.0 1 256 2.01	7.0 2 256 2.01	6.0 2 384 2.01	5.0 2 384 2.01	
105001	7.0 2 384 2.01	6.0 2 384 2.01	14.0 2 384 2.01	9.0 1 256 2.01	8.0 2 256 2.01	6.0 2 384 2.01	5.0 2 384 2.01	105001
	6.0 2 384 2.01	6.0 2 384 2.01	12.0 2 384 2.01	8.0 1 256 2.01	7.0 2 256 2.01	6.0 2 384 2.01	5.0 2 384 2.01	
105301	5.0 2 384 2.01	6.0 2 384 2.01	13.0 2 384 2.01	9.0 1 256 2.01	7.0 2 256 2.01	6.0 2 384 2.01	5.0 2 384 2.01	105301
	6.0 2 384 2.01	5.0 2 384 2.01	13.0 2 384 2.01	9.0 1 256 2.01	7.0 2 256 2.01	6.0 2 384 2.01	5.0 2 384 2.01	
106001	6.0 2 384 2.01	5.0 2 384 2.01	10.0 2 384 2.01	10.0 1 256 2.01	9.0 2 256 2.01	6.0 2 384 2.01	5.0 2 384 2.01	106001
	6.0 2 384 2.01	6.0 2 384 2.01	9.0 2 384 2.01	8.0 1 256 2.01	9.0 2 256 2.01	6.0 2 384 2.01	5.0 2 384 2.01	
106301	6.0 2 384 2.01	6.0 2 384 2.01	9.0 2 384 2.01	7.0 1 256 2.01	9.0 2 256 2.01	6.0 2 384 2.01	4.0 2 384 2.01	106301
	6.0 2 384 2.01	5.0 2 384 2.01	8.0 2 384 2.01	7.0 1 256 2.01	8.0 2 256 2.01	5.0 2 384 2.01	4.0 2 384 2.01	
107001	6.0 2 384 2.01	0.0 1 384 2.01	8.0 2 384 2.01	8.0 1 256 2.01	0.0 1 256 2.01	0.0 1 384 2.01	4.0 2 384 2.01	107001
	6.0 2 384 2.01	shutdown	8.0 2 384 2.01	shutdown	shutdown	shutdown	5.0 2 384 2.01	
107301	0.0 1 384 2.01	shutdown	9.0 2 384 2.01	shutdown	shutdown	shutdown	6.0 2 384 2.01	107301
	shutdown	shutdown	11.0 2 384 2.01	shutdown	shutdown	shutdown	0.0 1 384 2.01	
108001	shutdown	shutdown	14.0 2 384 2.01	shutdown	shutdown	shutdown	shutdown	108001
	shutdown	shutdown	13.0 2 384 2.01	shutdown	shutdown	shutdown	shutdown	
108301	shutdown	shutdown	crash	shutdown	435	shutdown	shutdown	108301
	shutdown	shutdown	crash	shutdown	435	shutdown	shutdown	
109001	shutdown	shutdown	crash	shutdown	21.0 2 384 2.01	shutdown	shutdown	109001
	shutdown	shutdown	crash	shutdown	31.0 2 384 2.01	crash	shutdown	
109301	shutdown	shutdown	crash	shutdown	38.0 2 384 2.01	crash	shutdown	109301
	shutdown	shutdown	crash	shutdown	49.0 2 384 2.01	crash	shutdown	
110001	shutdown	shutdown	crash	31.0 1 256 2.01	49.0 2 384 2.01	crash	shutdown	110001
	shutdown	shutdown	crash	52.0 1 256 2.01	56.0 2 384 2.01	crash	shutdown	
110301	shutdown	0.0 1 384 2.01	crash	53.0 2 256 2.01	66.0 2 384 2.01	crash	shutdown	110301
	shutdown	35.0 2 384 2.01	crash	54.0 2 256 2.01	72.0 2 384 2.01	crash	shutdown	
111001	shutdown	56.0 2 384 2.01	8.0 1 256 2.01	53.0 2 256 2.01	70.0 2 384 2.01	crash	15.0 2 384 2.01	111001
	shutdown	60.0 2 384 2.01	8.0 1 256 2.01	54.0 2 256 2.01	73.0 2 384 2.01	0.0 1 384 2.01	18.0 2 384 2.01	
111301	shutdown	62.0 2 384 2.01	8.0 1 256 2.01	54.0 2 256 2.01	68.0 2 384 2.01	19.0 2 384 2.01	19.0 2 384 2.01	111301
	shutdown	59.0 2 384 2.01	13.0 1 256 2.01	51.0 2 256 2.01	437	35.0 2 384 2.01	20.0 2 384 2.01	
112001	shutdown	54.0 2 384 2.01	25.0 1 256 2.01	55.0 2 256 2.01	437	42.0 2 384 2.01	14.0 2 384 2.01	112001
	shutdown	57.0 2 384 2.01	29.0 1 256 2.01	55.0 2 256 2.01	437	51.0 2 384 2.01	19.0 2 384 2.01	
112301	shutdown	53.0 2 384 2.01	33.0 1 256 2.01	54.0 2 256 2.01	437	59.0 2 384 2.01	18.0 2 384 2.01	112301
	shutdown	47.0 2 384 2.01	33.0 1 256 2.01	54.0 2 256 2.01	437	55.0 2 384 2.01	17.0 2 384 2.01	
113001	shutdown	51.0 2 384 2.01	36.0 1 256 2.01	51.0 2 256 2.01	437	53.0 2 384 2.01	14.0 2 384 2.01	113001
	shutdown	55.0 2 384 2.01	39.0 1 256 2.01	55.0 2 256 2.01	437	58.0 2 384 2.01	16.0 2 384 2.01	
113301	10.0 2 384 2.01	60.0 2 384 2.01	43.0 1 256 2.01	55.0 2 256 2.01	437	59.0 2 384 2.01	14.0 2 384 2.01	113301
	24.0 2 384 2.01	56.0 2 384 2.01	45.0 1 256 2.01	55.0 2 256 2.01	437	61.0 2 384 2.01	20.0 2 384 2.01	
114001	26.0 2 384 2.01	58.0 2 384 2.01	50.0 1 256 2.01	56.0 2 256 2.01	437	66.0 2 384 2.01	19.0 2 384 2.01	114001
	27.0 2 384 2.01	70.0 2 384 2.01	50.0 1 256 2.01	434	437	60.0 2 384 2.01	19.0 2 384 2.01	
114301	26.0 2 384 2.01	67.0 2 384 2.01	49.0 1 256 2.01	434	437	68.0 2 384 2.01	18.0 2 384 2.01	114301
	24.0 2 384 2.01	74.0 2 384 2.01	50.0 1 256 2.01	434	437	65.0 2 384 2.01	22.0 2 384 2.01	
115001	25.0 2 384 2.01	71.0 2 384 2.01	50.0 1 256 2.01	51.0 2 256 2.01	437	61.0 2 384 2.01	22.0 2 384 2.01	115001
	26.0 2 384 2.01	75.0 2 384 2.01	49.0 1 256 2.01	55.0 2 256 2.01	437	70.0 2 384 2.01	23.0 2 384 2.01	
115301	27.0 2 384 2.01	79.0 2 384 2.01	54.0 1 256 2.01	56.0 2 256 2.01	437	439	23.0 2 384 2.01	115301
	26.0 2 384 2.01	77.0 2 384 2.01	51.0 1 256 2.01	55.0 2 256 2.01	437	439	24.0 2 384 2.01	
116001	29.0 2 384 2.01	69.0 2 384 2.01	49.0 1 256 2.01	54.0 2 256 2.01	437	439	22.0 2 384 2.01	116001
	29.0 2 384 2.01	70.0 2 384 2.01	52.0 1 256 2.01	55.0 2 256 2.01	437	26.0 2 384 2.01	20.0 2 384 2.01	
116301	26.0 2 384 2.01	73.0 2 384 2.01	51.0 1 256 2.01	54.0 2 256 2.01	437	46.0 2 384 2.01	17.0 2 384 2.01	116301
	22.0 2 384 2.01	57.0 2 384 2.01	53.0 1 256 2.01	55.0 2 256 2.01	437	62.0 2 384 2.01	18.0 2 384 2.01	
117001	20.0 2 384 2.01	51.0 2 384 2.01	51.0 1 256 2.01	55.0 2 256 2.01	437	61.0 2 384 2.01	19.0 2 384 2.01	117001
	18.0 2 384 2.01	53.0 2 384 2.01	46.0 1 256 2.01	55.0 2 256 2.01	437	56.0 2 384 2.01	15.0 2 384 2.01	
117301	15.0 2 384 2.01	43.0 2 384 2.01	41.0 1 256 2.01	46.0 2 256 2.01	437	54.0 2 384 2.01	0.0 2 384 2.01	117301
	16.0 2 384 2.01	43.0 2 384 2.01	37.0 1 256 2.01	44.0 2 256 2.01	437	45.0 2 384 2.01	shutdown	
118001	14.0 2 384 2.01	40.0 2 384 2.01	36.0 1 256 2.01	45.0 2 256 2.01	437	37.0 2 384 2.01	shutdown	118001
	14.0 2 384 2.01	43.0 2 384 2.01	33.0 1 256 2.01	44.0 2 256 2.01	437	38.0 2 384 2.01	shutdown	
118301	15.0 2 384 2.01	43.0 2 384 2.01	32.0 1 256 2.01	42.0 2 256 2.01	437	36.0 2 384 2.01	shutdown	118301
	13.0 2 384 2.01	36.0 2 384 2.01	30.0 1 256 2.01	44.0 2 256 2.01	437	35.0 2 384 2.01	shutdown	
119001	11.0 2 384 2.01	38.0 2 384 2.01	30.0 1 256 2.01	40.0 2 256 2.01	437	32.0 2 384 2.01	shutdown	119001
	11.0 2 384 2.01	432	27.0 1 256 2.01	43.0 2 256 2.01	437	33.0 2 384 2.01	shutdown	
119301	11.0 2 384 2.01	23.0 2 384 2.01	28.0 1 256 2.01	43.0 2 256 2.01	437	27.0 2 384 2.01	shutdown	119301
	13.0 2 384 2.01	30.0 2 384 2.01	28.0 1 256 2.01	45.0 2 256 2.01	437	26.0 2 384 2.01	shutdown	
120001	12.0 2 384 2.01	31.0 2 384 2.01	21.0 1 256 2.01	47.0 2 256 2.01	437	20.0 2 384 2.01	shutdown	120001
	11.0 2 384 2.01	34.0 2 384 2.01	21.0 1 256 2.01	49.0 2 256 2.01	437	25.0 2 384 2.01	shutdown	
120301	12.0 2 384 2.01	32.0 2 384 2.01	22.0 1 256 2.01	52.0 2 256 2.01	437	23.0 2 384 2.01	shutdown	120301
	14.0 2 384 2.01	30.0 2 384 2.01	28.0 1 256 2.01	50.0 2 256 2.01	16.0 2 384 2.01	22.0 2 384 2.01	shutdown	
121001	16.0 2 384 2.01	29.0 2 384 2.01	33.0 1 256 2.01	50.0 2 256 2.01	19.0 2 384 2.01	21.0 2 384 2.01	shutdown	121001
	17.0 2 384 2.01	32.0 2 384 2.01	34.0 1 256 2.01	55.0 2 256 2.01	27.0 2 384 2.01	23.0 2 384 2.01	shutdown	
121301	16.0 2 384 2.01	29.0 2 384 2.01	39.0 1 256 2.01	49.0 2 256 2.01	26.0 2 384 2.01	24.0 2 384 2.01	shutdown	121301
	15.0 2 384 2.01	33.0 2 384 2.01	40.0 1 256 2.01	46.0 2 256 2.01	26.0 2 384 2.01	22.0 2 384 2.01	shutdown	
122001	18.0 2 384 2.01	36.0 2 384 2.01	35.0 1 256 2.01	45.0 2 256 2.01	29.0 2 384 2.01	26.0 2 384		