

Managing Financial Systems: The Peak Experience

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The Peak Experience

- Customer-facing OLTP systems cannot be allowed to fail, or even slow down.
- They require a level of management which is more thorough than the norm:

“Non-Reactive”

As A Customer:

You've finished your shopping and are at the cashier with only "plastic." "The system's down." You:

- Are inconvenienced and delayed.
- Consider walking out without completing your purchase.
- Wait with irritation while the clerk fumbles with a paper credit slip.
- Consider not shopping there again.



As The System Manager:

You know that the system is slow and is denying and reversing transactions. You:

- Worry about the status of the thousands of dollars per minute that should be going through the system.
- Worry about a possible explosion in the fraud rate if the stores are in stand-in mode.
- Worry about loss of business and loss of customer loyalty.
- Worry about the cost of recovering the transactions.
- Worry about the CIO and the VP of Store Systems asking for an explanation.

The Peak Experience

System managers and capacity planners must assume responsibility for the big picture, integrating data and information from various sources.

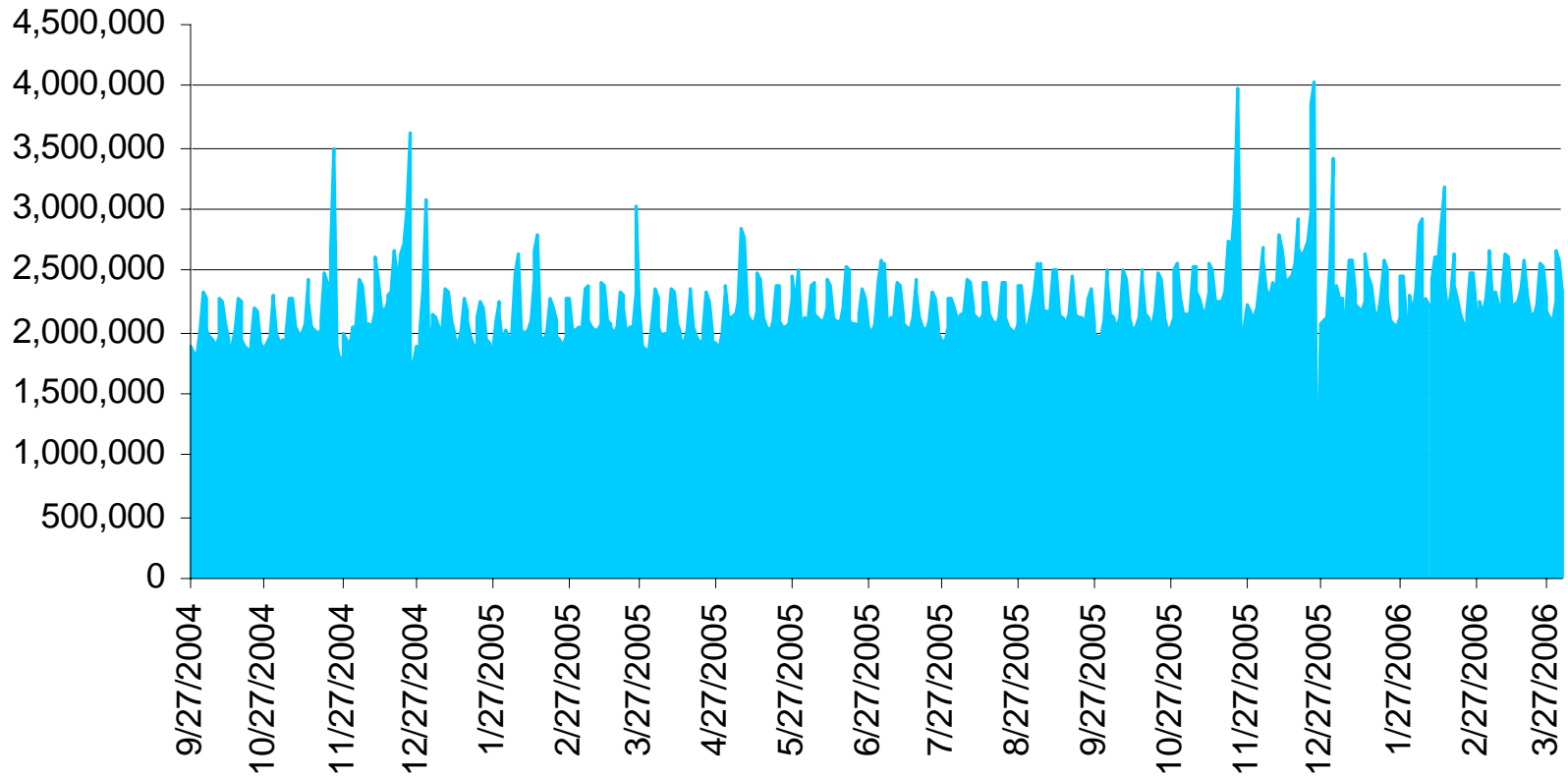
IT Infrastructure Library

- ITIL Capacity Management Best Practice:
 - Monitoring performance/throughput/service
 - Tuning
 - Understanding demand
 - Balance capacity against future demand
 - Collaborate with the business
 - Repeat

Business Follows Cycles

- The cycles usually are repetitive and predictable.
- The capacity planner must focus on the upcoming peak.

Retail POS 18 Months Transactions



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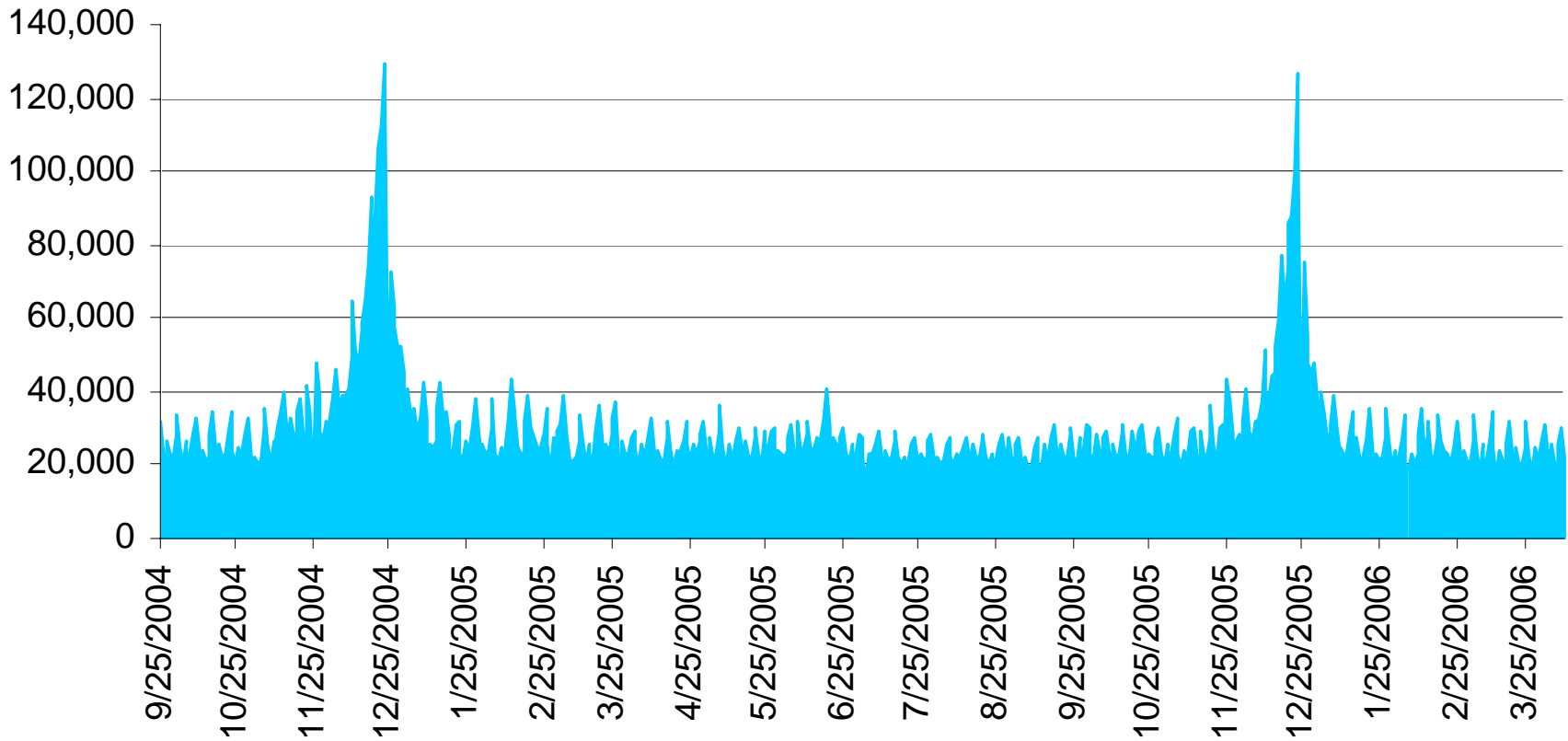
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The Peak Experience

- The upcoming peak can usually be predicted, or at least approximated, from history.
 - With input from the business partner.

Retail POS 18 Months Transactions



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The Peak Experience

This requires a plan:

- Count business transactions, or something directly proportional to the business.
 - Ideally, entries in a transaction log
 - Messages submitted to queues
 - Communications traffic such as IP packets.

Peak Experience Planning

- Discover and track/trend monthly transaction peaks:
 - Peak day, for table/file sizing
 - Peak half-hour

CURRENT YEAR

FROM	TO	TOTAL	% GROWTH
'Sun Jan 01 2006'	'Tue Oct 31 2006'	735,775,577	12.0%

PRIOR YEAR

FROM	TO	TOTAL
'Sat Jan 01 2005'	'Mon Oct 31 2005'	656,608,378

Totals & peak day each month for POS

FROM	TO	AVG	TOTAL	GROWTH	12 MOS
'Wed Nov 01 2006'	'Wed Nov 01 2006'	2,392,237	2,392,237	-3.8%	1.0%
'Sun Oct 01 2006'	'Tue Oct 31 2006'	2,488,984	77,158,529	-0.3%	11.9%
'Fri Sep 01 2006'	'Sat Sep 30 2006'	2,496,450	74,893,508	2.7%	12.7%
'Tue Aug 01 2006'	'Thu Aug 31 2006'	2,429,954	75,328,577	-2.5%	11.6%
'Sat Jul 01 2006'	'Mon Jul 31 2006'	2,492,469	77,266,564	1.7%	14.2%
'Thu Jun 01 2006'	'Fri Jun 30 2006'	2,450,795	73,523,867	-0.2%	12.6%
'Mon May 01 2006'	'Wed May 31 2006'	2,456,569	76,153,642	2.5%	10.3%
'Sat Apr 01 2006'	'Sun Apr 30 2006'	2,396,235	71,887,066	3.1%	15.1%
'Wed Mar 01 2006'	'Fri Mar 31 2006'	2,323,548	72,030,000	-2.9%	9.0%
'Wed Feb 01 2006'	'Tue Feb 28 2006'	2,393,535	67,018,990	5.2%	12.1%
'Sun Jan 01 2006'	'Tue Jan 31 2006'	2,274,672	70,514,834	-9.9%	10.7%
'Thu Dec 01 2005'	'Sat Dec 31 2005'	2,526,408	78,318,672	6.7%	11.5%
'Tue Nov 01 2005'	'Wed Nov 30 2005'	2,367,736	71,032,108	6.4%	11.2%
'Sat Oct 01 2005'	'Mon Oct 31 2005'	2,223,345	68,923,701	0.4%	
'Thu Sep 01 2005'	'Fri Sep 30 2005'	2,214,414	66,432,448	1.7%	
'Mon Aug 01 2005'	'Wed Aug 31 2005'	2,176,122	67,459,800	-0.2%	
'Fri Jul 01 2005'	'Sun Jul 31 2005'	2,181,837	67,636,974	0.3%	
'Wed Jun 01 2005'	'Thu Jun 30 2005'	2,174,958	65,248,743	-2.2%	
'Sun May 01 2005'	'Tue May 31 2005'	2,225,944	69,004,285	6.9%	
'Fri Apr 01 2005'	'Sat Apr 30 2005'	2,081,183	62,435,519	-2.3%	
'Tue Mar 01 2005'	'Thu Mar 31 2005'	2,131,097	66,064,030	-0.1%	
'Tue Feb 01 2005'	'Mon Feb 28 2005'	2,133,625	59,741,513	3.9%	
'Sat Jan 01 2005'	'Mon Jan 31 2005'	2,053,592	63,661,365	-9.3%	
'Wed Dec 01 2004'	'Fri Dec 31 2004'	2,265,475	70,229,755	6.4%	
'Mon Nov 01 2004'	'Tue Nov 30 2004'	2,129,138	63,874,163		



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	PEAK DAY	TRANSACTIONS	GROWTH	12 MOS
'Wed Nov 01 2006'		2,392,237	-14.9%	-39.8%
'Sun Oct 01 2006'		2,811,108	-2.4%	9.9%
'Sat Sep 09 2006'		2,882,689	4.2%	12.2%
'Sat Aug 05 2006'		2,764,949	-6.8%	13.2%
'Mon Jul 03 2006'		2,967,400	2.7%	15.1%
'Sat Jun 17 2006'		2,888,386	-7.6%	13.7%
'Sat May 13 2006'		3,127,434	-12.4%	10.1%
'Sat Apr 15 2006'		3,571,885	33.6%	52.2%
'Sun Mar 05 2006'		2,672,076	-15.7%	-11.4%
'Tue Feb 14 2006'		3,172,550	19.9%	13.2%
'Sat Jan 14 2006'		2,644,719	-34.2%	11.8%
'Sat Dec 24 2005'		4,022,173	1.1%	11.0%
'Wed Nov 23 2005'		3,978,152	55.5%	13.6%
'Sun Oct 30 2005'		2,557,686	-0.4%	
'Mon Sep 05 2005'		2,569,356	5.2%	
'Sat Aug 06 2005'		2,441,371	-5.2%	
'Sat Jul 02 2005'		2,576,612	1.4%	
'Sat Jun 18 2005'		2,538,741	-10.5%	
'Sat May 07 2005'		2,838,163	21.0%	
'Sun Apr 17 2005'		2,345,544	-22.2%	
'Sat Mar 26 2005'		3,018,388	7.7%	
'Mon Feb 14 2005'		2,800,491	18.4%	
'Sat Jan 08 2005'		2,365,110	-34.7%	
'Fri Dec 24 2004'		3,623,093	3.5%	
'Wed Nov 24 2004'		3,499,477		



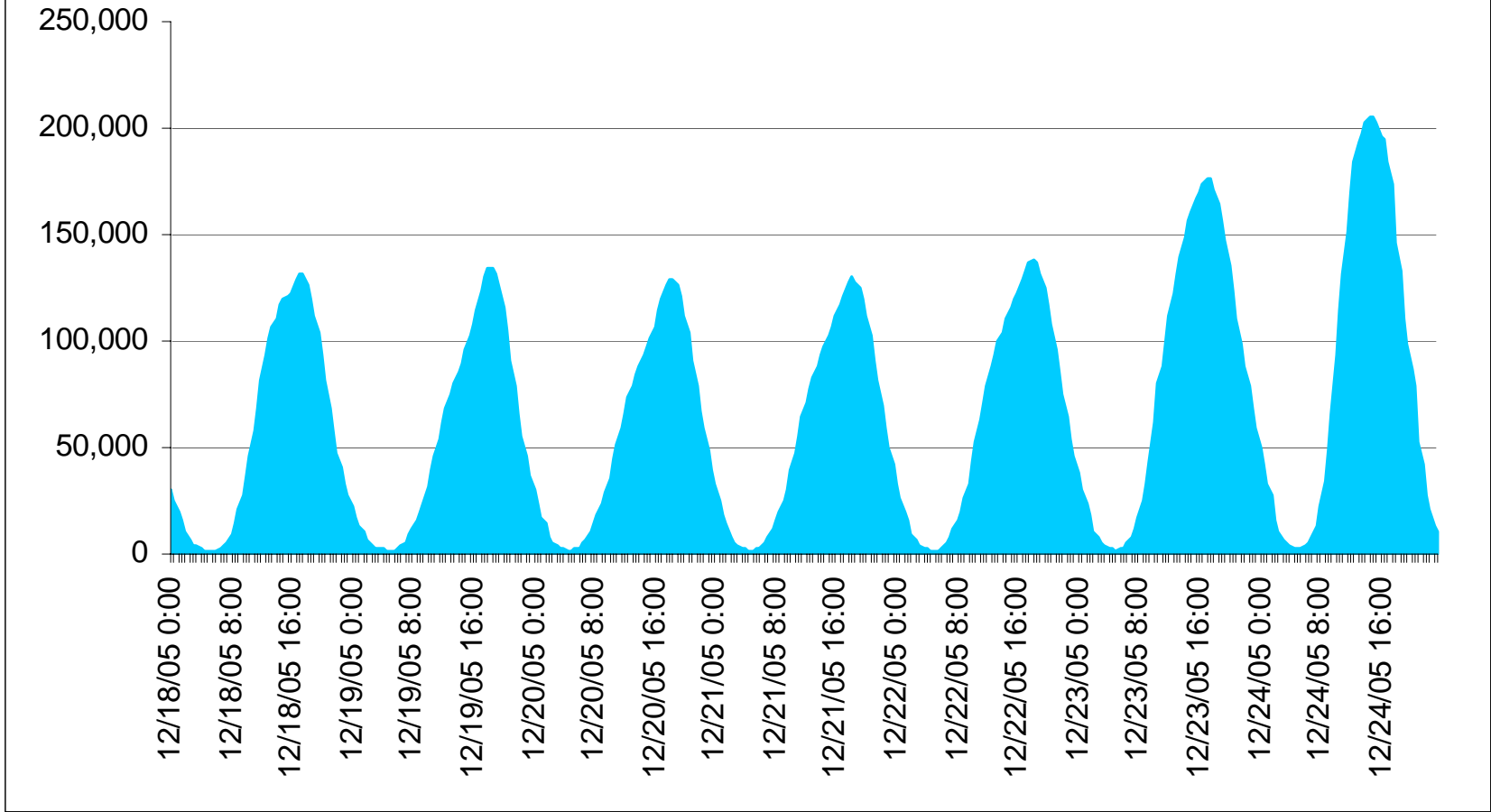
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Week by Half Hour Transactions



Historical Peak Half-Hour

		DATE	TIME	TRANSACTIONS	TPS	GROWTH	12 Mo
18:30	Mo	10/30/06		143,120	79.5	1.0%	12.8%
17:30	Su	09/17/06		141,676	78.7	16.2%	3.9%
18:30	Mo	08/07/06		121,865	67.7	-42.2%	
22:30	Th	07/27/06		210,926	117.1	75.7%	77.6%
18:00	Sa	06/17/06		120,033	66.6	-11.7%	
17:30	Sa	05/13/06		135,940	75.5	-14.0%	13.7%
17:30	Sa	04/15/06		158,140	87.8	-8.2%	40.7%
17:30	Tu	03/07/06		172,381	95.7	-1.1%	29.1%
17:00	Su	02/05/06		174,397	96.8	33.9%	12.5%
14:30	Su	01/22/06		130,204	72.3	-36.8%	10.2%
15:00	Sa	12/24/05		206,218	114.5	14.2%	4.2%
18:30	We	11/23/05		180,482	100.2	42.2%	14.2%
17:30	Su	10/30/05		126,885	70.4	-6.9%	
13:30	We	09/14/05		136,283	75.7		
15:30	Mo	07/04/05		118,740	65.9		
19:00	Sa	05/07/05		119,462	66.3	6.3%	
18:30	Su	04/03/05		112,323	62.4	-15.8%	
17:30	Sa	03/26/05		133,468	74.1	-13.8%	
17:00	Su	02/06/05		154,942	86.0	31.1%	
18:30	Mo	01/03/05		118,152	65.6	-40.2%	
15:00	Fr	12/24/04		197,824	109.9	25.2%	
18:00	We	11/24/04		157,997	87.7		

Peak Experience Planning

- Why track each month's peak, when the yearly peak is all that's needed?
 - Discover actual growth rates
 - Discover business pattern changes
 - Uncover system changes

Peak Experience Planning

- Correlate to system usage
 - Is there sufficient current capacity?
 - Is the transaction profile (cost-per-transaction) changing?
 - Are there interfering activities?

Usage at Peak

	Datetime	TPS	CPU	DIO	RDS	WRTS	PF	MIN KB
'17:30	Tu 03/07/06'	95.77	31.50%	143.00	3.20	138.30	6.70	475,289
'17:00	Su 02/05/06'	96.89	36.30%	192.00	3.70	187.90	1.30	480,857
'14:30	Su 01/22/06'	72.34	25.10%	86.20	0.50	85.50	0.50	502,866
'15:00	Sa 12/24/05'	114.57	41.60%	207.20	3.10	203.90	0.80	432,812
'18:30	We 11/23/05'	100.27	35.80%	188.80	0.50	188.00	0.80	487,713
'17:30	Su 10/30/05'	70.49	24.50%	112.80	0.50	112.20	0.40	523,830
'13:30	We 09/14/05'	75.71	24.90%	56.70	2.10	50.30	10.90	498,121
'15:30	Mo 07/04/05'	65.97	22.60%	92.70	0.40	92.20	0.40	514,444
'19:00	Sa 05/07/05'	66.37	22.70%	115.30	0.50	114.50	0.60	490,039
'18:30	Su 04/03/05'	62.40	21.40%	96.80	0.40	96.30	0.40	503,738
'17:30	Sa 03/26/05'	74.15	25.10%	124.00	0.40	123.40	0.30	504,358
'17:00	Su 02/06/05'	86.08	31.80%	143.40	0.50	142.60	0.50	514,033
'18:30	Mo 01/03/05'	65.64	23.10%	98.50	0.40	98.00	0.30	492,401
'15:00	Fr 12/24/04'	109.90	38.70%	186.50	1.40	184.40	1.50	510,133
'18:00	We 11/24/04'	87.78	30.90%	156.20	0.50	155.60	0.60	514,880
'17:00	Su 10/31/04'	65.72	24.50%	104.40	1.60	102.50	0.70	514,215
'17:30	Mo 09/06/04'	59.05	22.80%	91.40	0.40	90.90	0.50	514,107
'15:30	Su 07/04/04'	59.00	23.50%	94.20	12.40	81.70	0.30	534,026
'20:30	Tu 05/04/04'	73.83	24.90%	121.30	6.00	115.00	1.50	471,267



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Usage per TPS

	Datetime	TPS	CPU/TPS	CPms/TXN	DIO/TXN	RDS/TXN	WRTS/TXN
'17:30	Tu 03/07/06'	95.77	0.33%	6.58	1.49	0.03	1.44
'17:00	Su 02/05/06'	96.89	0.37%	7.49	1.98	0.04	1.94
'14:30	Su 01/22/06'	72.34	0.35%	6.94	1.19	0.01	1.18
'15:00	Sa 12/24/05'	114.57	0.36%	7.26	1.81	0.03	1.78
'18:30	We 11/23/05'	100.27	0.36%	7.14	1.88	0.00	1.87
'17:30	Su 10/30/05'	70.49	0.35%	6.95	1.60	0.01	1.59
'13:30	We 09/14/05'	75.71	0.33%	6.58	0.75	0.03	0.66
'15:30	Mo 07/04/05'	65.97	0.34%	6.85	1.41	0.01	1.40
'19:00	Sa 05/07/05'	66.37	0.34%	6.84	1.74	0.01	1.73
'18:30	Su 04/03/05'	62.40	0.34%	6.86	1.55	0.01	1.54
'17:30	Sa 03/26/05'	74.15	0.34%	6.77	1.67	0.01	1.66
'17:00	Su 02/06/05'	86.08	0.37%	7.39	1.67	0.01	1.66
'18:30	Mo 01/03/05'	65.64	0.35%	7.04	1.50	0.01	1.49
'15:00	Fr 12/24/04'	109.90	0.35%	7.04	1.70	0.01	1.68
'18:00	We 11/24/04'	87.78	0.35%	7.04	1.78	0.01	1.77
'17:00	Su 10/31/04'	65.72	0.37%	7.46	1.59	0.02	1.56
'17:30	Mo 09/06/04'	59.05	0.39%	7.72	1.55	0.01	1.54
'15:30	Su 07/04/04'	59.00	0.40%	7.97	1.60	0.21	1.38
'20:30	Tu 05/04/04'	73.83	0.34%	6.74	1.64	0.08	1.56

Usage per TPS

	Datetime	TPS	MOD/TPS	CPms/TXN	DIO/TXN	RDS/TXN	WRTS/TXN
14:30	Sa 03/11/06	0.95	4.44%	88.78	5.92	2.22	2.54
18:30	Fr 02/17/06	1.17	4.53%	90.56	5.47	2.05	2.48
18:30	Tu 01/03/06	1.20	4.76%	95.26	5.77	2.26	2.59
13:00	Fr 12/23/05	3.29	3.07%	61.49	3.04	0.97	1.74
18:30	Fr 11/25/05	1.35	4.53%	90.67	8.18	3.79	2.97
18:30	Mo 10/31/05	0.99	5.43%	108.66	8.65	3.62	3.22
11:00	Fr 09/23/05	1.08	5.21%	104.13	10.60	3.72	5.21
11:00	Fr 08/26/05	0.88	7.38%	147.54	16.80	8.74	5.67
12:00	Fr 07/01/05	1.19	5.20%	103.91	9.39	2.85	5.11
14:00	Mo 06/20/05	1.37	4.29%	85.89	5.82	2.18	2.47
14:00	Fr 05/20/05	1.20	7.69%	153.76	8.02	2.84	3.84
11:30	Th 04/28/05	1.38	4.80%	95.92	6.61	2.62	2.54
14:00	Fr 03/25/05	1.24	4.66%	93.26	6.59	2.25	2.97
13:30	Sa 02/12/05	1.21	4.39%	87.89	5.89	2.07	2.49
15:30	Tu 01/04/05	1.60	9.01%	180.25	5.70	2.88	1.75
11:30	Fr 12/24/04	3.87	3.16%	63.10	3.08	1.45	1.22
14:00	Fr 11/26/04	1.45	4.34%	86.83	6.68	2.14	3.31
13:30	Sa 10/16/04	0.96	7.75%	154.97	13.72	5.55	4.08
13:30	Sa 09/18/04	0.98	6.04%	120.75	7.16	2.66	3.27
11:00	Mo 08/16/04	0.94	9.22%	184.34	21.19	13.03	5.62
16:30	Tu 07/20/04	0.92	6.41%	128.26	8.70	3.59	3.59
14:30	Sa 06/19/04	1.12	5.20%	103.98	6.72	2.60	2.96
14:30	Sa 05/22/04	0.85	6.12%	122.35	8.71	3.41	3.88
14:30	Sa 04/03/04	1.04	5.56%	111.24	7.86	3.16	3.36



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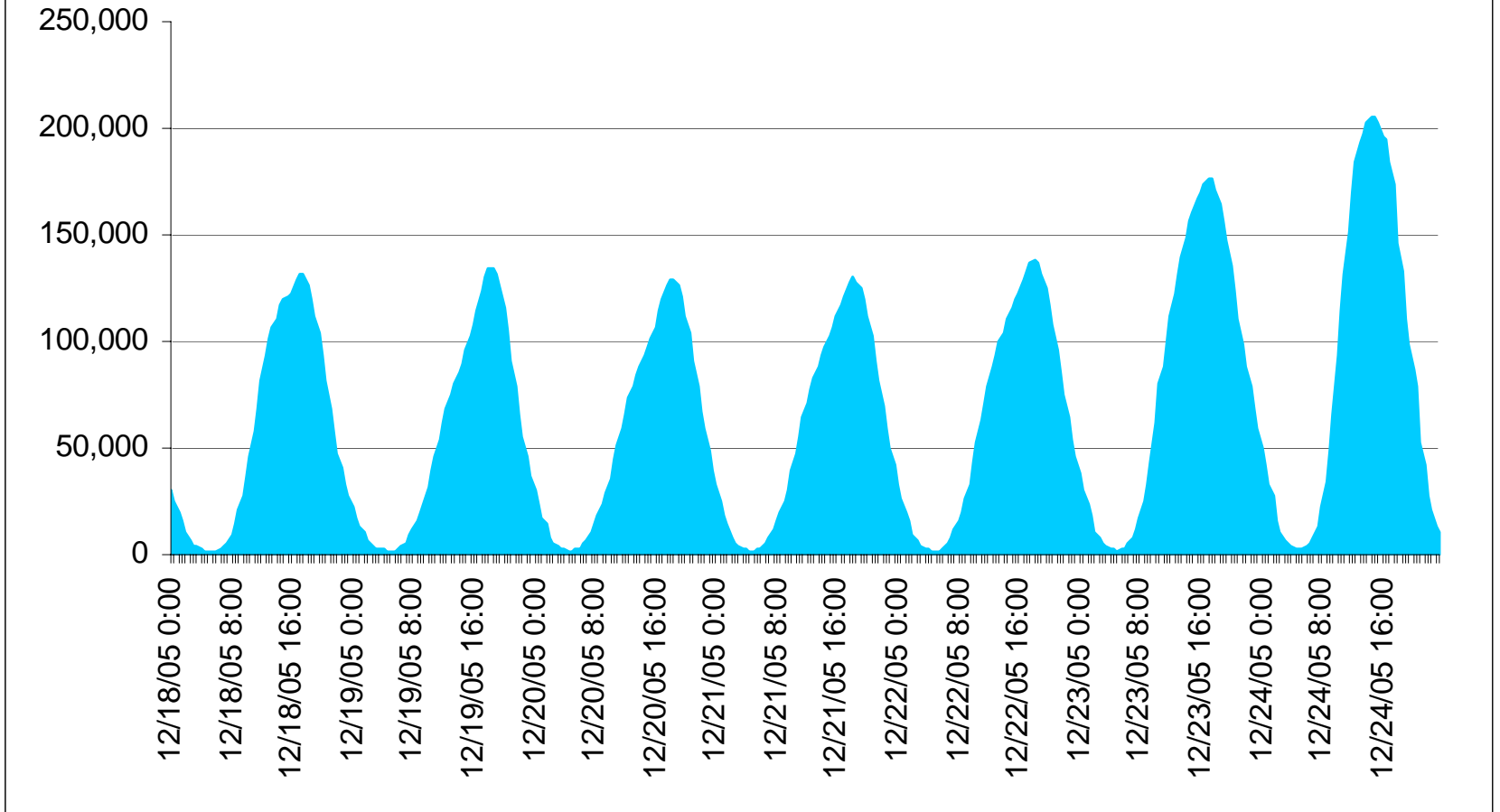
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Peak Experience Planning

- Correlate to system usage
 - CPU/Memory/Paging
 - Disk busy/space available
 - Process/thread utilization
 - TCP/IP & legacy communications

Week by Half Hour Transactions



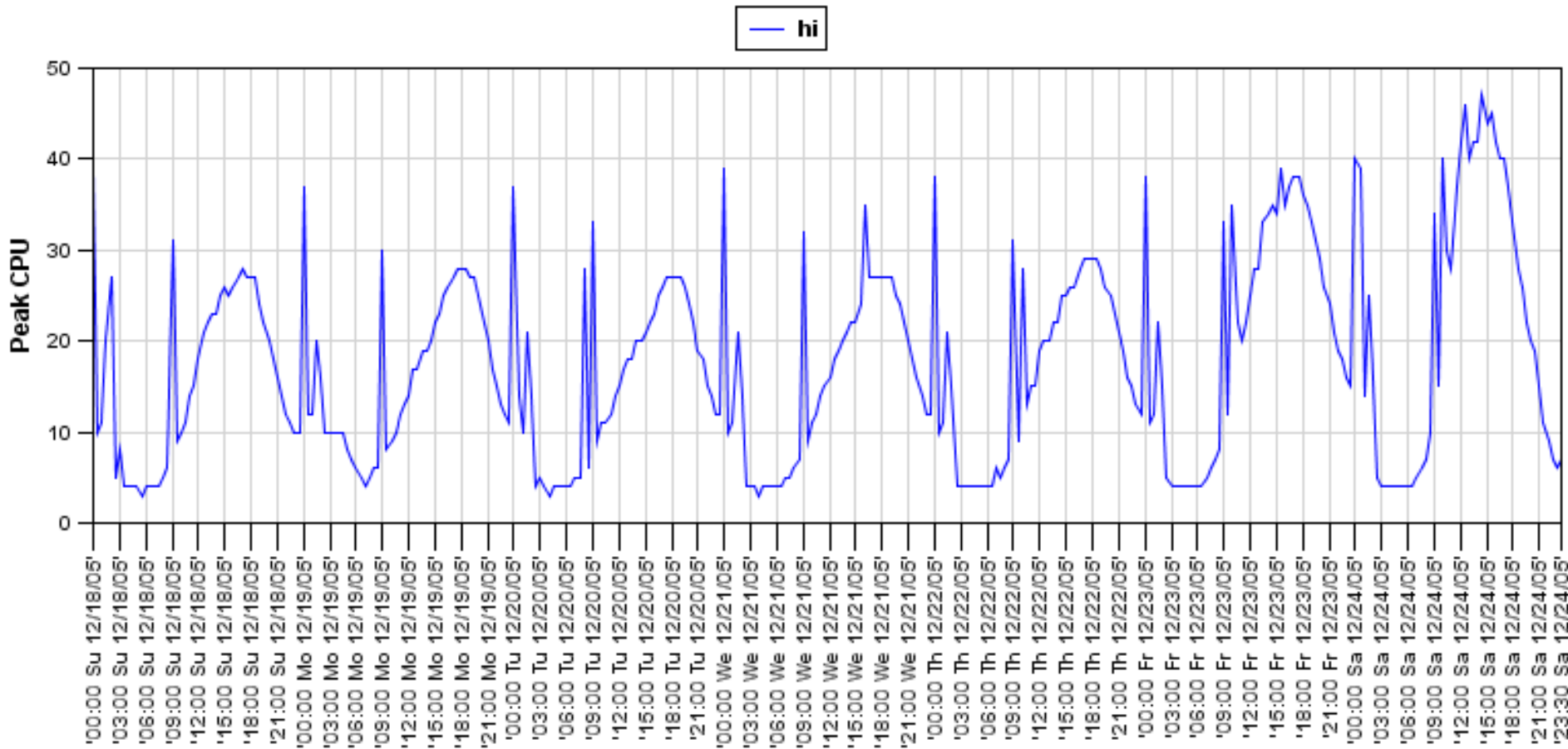
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Interference?

Peak CPU



Cluster Balanced?

CPU#	CPU%	Intr%	Swaps/S	Disk/S	MinMB	Disp/S
0	36.4%	6.4%	0.2	182.7	1,041	4,868
1	52.4%	7.9%	2.2	43.6	870	5,071
10	56.7%	6.3%	1.8	252.5	1,371	3,688
11	81.1%	8.4%	1.4	389.5	1,246	4,818
12	62.2%	6.8%	1.9	350.3	1,254	4,487
13	52.3%	5.9%	1.3	293.0	1,262	3,422
14	29.2%	4.1%	1.6	125.9	1,411	2,730
15	32.5%	4.2%	1.1	79.9	1,351	2,522
2	71.5%	8.9%	0.3	479.3	732	6,405
3	65.3%	8.6%	0.8	126.8	581	6,910
4	48.7%	6.3%	1.9	149.6	899	4,352
5	71.3%	9.5%	1.1	88.9	904	7,472
6	67.0%	8.4%	0.5	272.7	774	5,347
7	79.0%	10.5%	0.1	282.6	920	6,540
8	42.6%	4.7%	0.9	172.5	1,025	2,857
9	72.9%	8.9%	1.1	354.1	998	5,596

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C24 fx Production.SysAdmin

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	12/24/2005 15:00	elap	user	proc	bz	cp	dkbz	pf	pft	drd	dwr	smsm	umem
2	12/24/2005 15:00	1800	Production.SysAdmin	P\$CRYPTO	58.1	58.1	0	0	0	0	2	251	4372
3	12/24/2005 15:00	1800	Production.SysAdmin	P\$TAP004	40.7	40.7	0	0	0	2	32639	216	1576
4	12/24/2005 15:00	1800	Production.SysAdmin	P\$TAP002	40.5	40.5	0	0	0	1	32650	216	1516
5	12/24/2005 15:00	1800	Production.SysAdmin	P\$TAP001	40.4	40.4	0	0	0	1	32591	216	1580
6	12/24/2005 15:00	1800	Production.SysAdmin	P\$TAP007	40.4	40.4	0	0	0	1	32236	216	1444
7	12/24/2005 15:00	1800	Production.SysAdmin	P\$TAP006	40.4	40.4	0	1	0	5	32474	216	1492
8	12/24/2005 15:00	1800	Production.SysAdmin	P\$TAP003	40.4	40.3	0	0	0	2	32430	216	1636
9	12/24/2005 15:00	1800	Production.SysAdmin	P\$TAP005	40.4	40.3	0	0	0	5	32570	216	1468
10	12/24/2005 15:00	1800	Production.SysAdmin	P\$TAP000	40.4	40.3	0.1	1	0	6	32452	216	1656
11	12/24/2005 15:00	1800	Production.SysAdmin	P\$TAP008	40	40	0	0	0	1	32181	216	1516
12	12/24/2005 15:00	1800	Production.SysAdmin	P\$MPS1	31	31	0	1	0	0	20	1444	6186
13	12/24/2005 15:00	1800	Production.SysAdmin	P\$MPS2	30.9	30.9	0	1	0	0	17	1444	5897
14	12/24/2005 15:00	1800	Production.SysAdmin	P\$MPS4	30.9	30.9	0	0	0	0	25	1444	7379
15	12/24/2005 15:00	1800	Production.SysAdmin	P\$MPS3	30.8	30.8	0	0	0	1	16	1444	7388
16	12/24/2005 15:00	1800	Production.SysAdmin	P\$SVS2	24.9	24.9	0	43	0	0	4	315	882
17	12/24/2005 15:00	1800	Production.SysAdmin	P\$SVS1	24.6	24.6	0	88	0	0	6	315	920
18	12/24/2005 15:00	1800	Production.SysAdmin	P\$LOGGER	22.8	22.8	0	0	0	0	34848	71	63
19	12/24/2005 15:00	1800	Production.SysAdmin	P\$MPS5	22.8	22.8	0	0	0	0	4	1444	5805
20	12/24/2005 15:00	1800	Production.SysAdmin	P\$MPS8	22.8	22.8	0	0	0	0	11	1444	5779
21	12/24/2005 15:00	1800	Production.SysAdmin	P\$MPS7	22.7	22.7	0	0	0	0	13	1444	5307
22	12/24/2005 15:00	1800	Production.SysAdmin	P\$MPS6	22.7	22.7	0	0	0	0	14	1444	5623
23	12/24/2005 15:00	1800	Charlie.User	Emonitor	20.2	20	0.1	0	0	17	308	109	382
24	12/24/2005 15:00	1800	Production.SysAdmin	P\$DC701B	14.7	14.7	0	0	0	1	17	1689	2762
25	12/24/2005 15:00	1800	Production.SysAdmin	P\$DC701A	14.6	14.6	0	0	0	1	10	1689	2853
26	12/24/2005 15:00	1800	Production.SysAdmin	P\$DC701C	14.5	14.5	0	0	0	0	8	1689	2788
27	12/24/2005 15:00	1800	Production.SysAdmin	P\$GCM2	12.1	12.1	0	0	0	0	21	279	814
28	12/24/2005 15:00	1800	Production.SysAdmin	P\$DC701D	12	12	0	0	0	1	5	1689	2731
29	12/24/2005 15:00	1800	Production.SysAdmin	P\$ACCUM	11.8	11.8	0	0	0	0	7	24	54
30	12/24/2005 15:00	1800	Production.SysAdmin	P\$DC701E	11.7	11.7	0	0	0	0	9	1689	2860
31	12/24/2005 15:00	1800	Production.SysAdmin	P\$DC620A	11.1	11.1	0	0	0	0	5	1689	2573
32	12/24/2005 15:00	1800	Production.SysAdmin	P\$DC620B	10.2	10.2	0	0	0	0	3	1689	2530
33	12/24/2005 15:00	1800	Production.SysAdmin	P\$DC620C	9.8	9.8	0	0	0	0	6	1689	2553
34	12/24/2005 15:00	1800	Production.SysAdmin	P\$DC660A	8	8	0	0	0	0	3	1689	2502

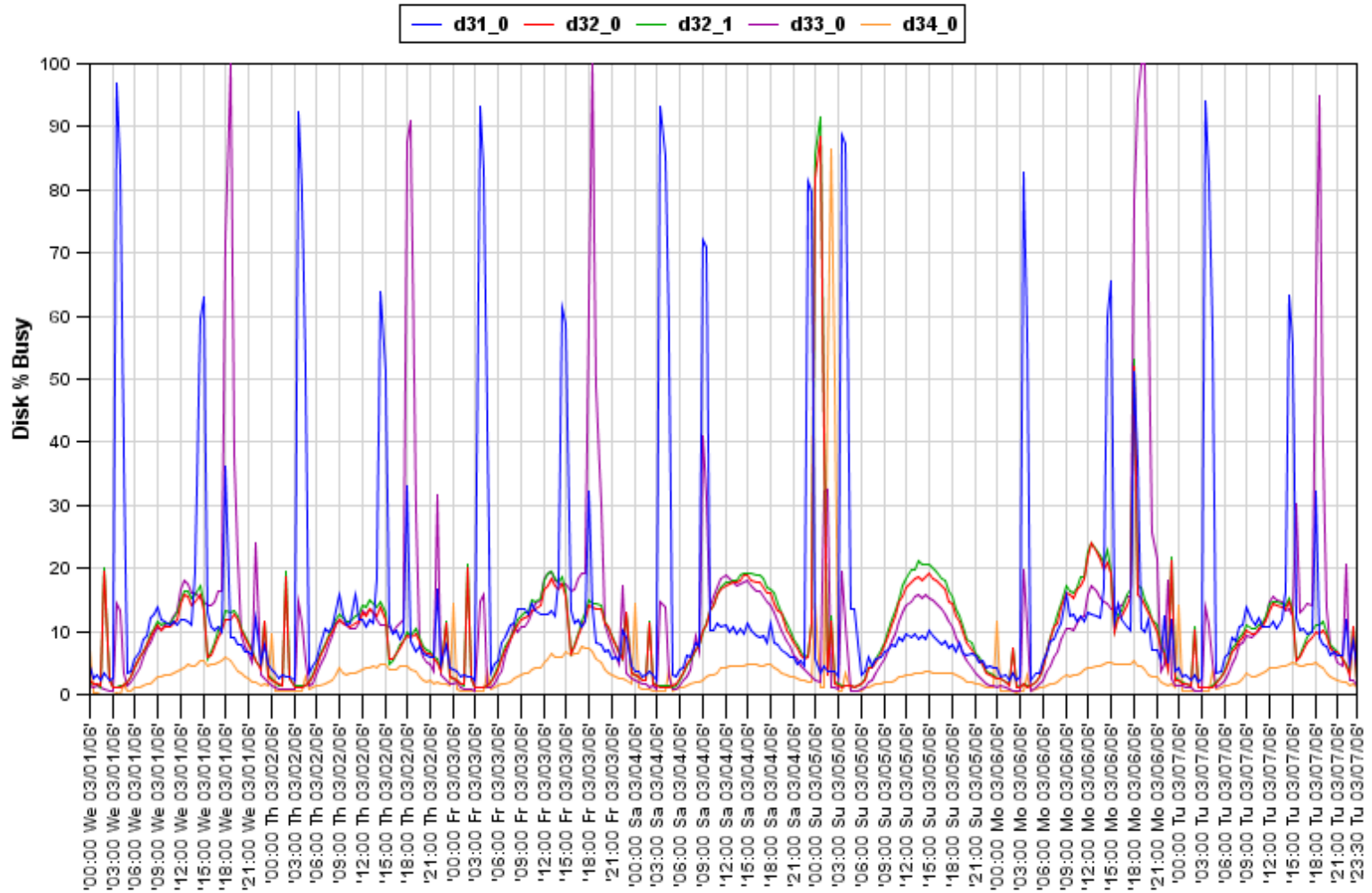
Peak Experience Planning

- Most probable bottlenecks:
 - Disks
 - Communications
 - Especially legacy comm
 - Understand the end-to-end path
 - Identify least bandwidth of all hops
 - Look for contention (FTP)

Peak Experience Planning

- Disk subsystem
 - Use the most informative metric for the architecture
 - % busy
 - Queue depth
 - Service time
 - I/O per second
 - NAS/SAN subject to contention

Disk % Busy



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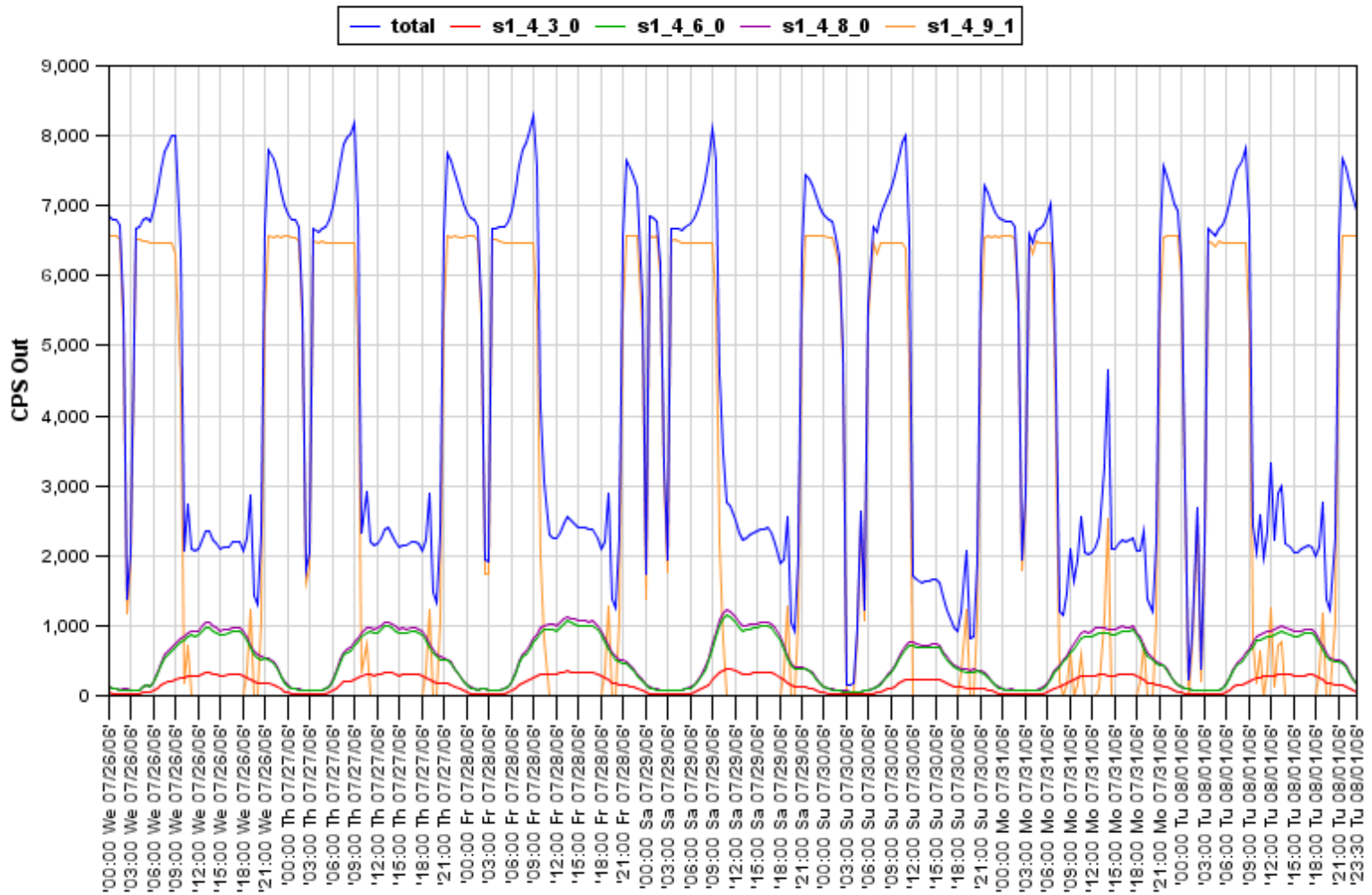


Disks Adequate & Balanced?

Disk Busy-Cache Hit%-During Peak

	data52		data53		data54		data55
6.8%	92.5%	5.7%	96.9%	14.9%	80.1%	25.7%	91.1%
	data56		data57		data58		data59
14.9%	87.9%	16.4%	87.5%	18.7%	83.3%	47.4%	76.0%
	data6		data60		data61		data7
10.1%	94.3%	26.3%	82.1%	12.9%	93.0%	1.7%	99.4%
	data8		data9		dsmscm		dwhs00
0.9%	99.7%	2.6%	99.2%	8.7%	100.0%	0.1%	82.4%
	dwhs01		dwhs02		sort0		sort1
0.2%	95.8%	0.3%	96.7%	24.0%	98.6%	5.9%	93.5%
	sort10		sort11		sort12		sort13
7.2%	58.5%	1.2%	89.1%	5.6%	67.6%	25.5%	64.0%
	sort14		sort15		sort2		sort3
9.0%	62.9%	1.5%	75.9%	79.9%	97.6%	14.7%	71.5%
	sort4		sort5		sort6		sort7
9.0%	98.0%	3.5%	85.3%	19.1%	60.9%	2.6%	70.6%
	sort8		sort9		system		
7.6%	81.7%	5.7%	17.6%	22.9%	99.7%		

SDLC Output



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Enough Bandwidth?

SDLC Throughput Analysis

CPS In	CPS Out	Speed	F/H	Busy	CPS In	CPS Out	Speed	F/H	Busy
	s10_12_0					s12_04_0			
90.0 B	76.0 B	56.0Kb	H	2%	206.0 B	212.0 B	56.0Kb	H	7%
	s12_08_0					s4_11_0			
3.5KB	1.1KB	56.0Kb	H	83%	3.5KB	1.1KB	56.0Kb	H	82%
	s4_12_0					s4_13_0			
414.0 B	429.0 B	56.0Kb	H	15%	369.0 B	414.0 B	56.0Kb	H	13%

Ethernet Throughput Analysis

CPS In	CPS Out	Speed	F/H	Busy	CPS In	CPS Out	Speed	F/H	Busy
	enet_m2_10_13					enet_m2_4			
2.1KB	900.0 B	10.0Mb	H	0%	41.4KB	108.2KB	10.0Mb	H	14%

Peak Experience Planning

- Anticipate the next peak
 - Use most probable or worst-case growth factor, from history or from the business partner
 - Apply against the usage numbers
 - Look for potential bottlenecks
 - Leave room for the unexpected

The Peak Experience

“Never build a bridge for the average height of a sailboat’s mast.

... Guarantees problems.”

The Peak Experience

- Financial OLTP Systems require Non-Reactive Management
 - Understanding and tracking the business demand, and peak demand
 - Correlating demand to usage
 - Anticipating the next peak
 - Planning for adequate capacity

The Peak Experience

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