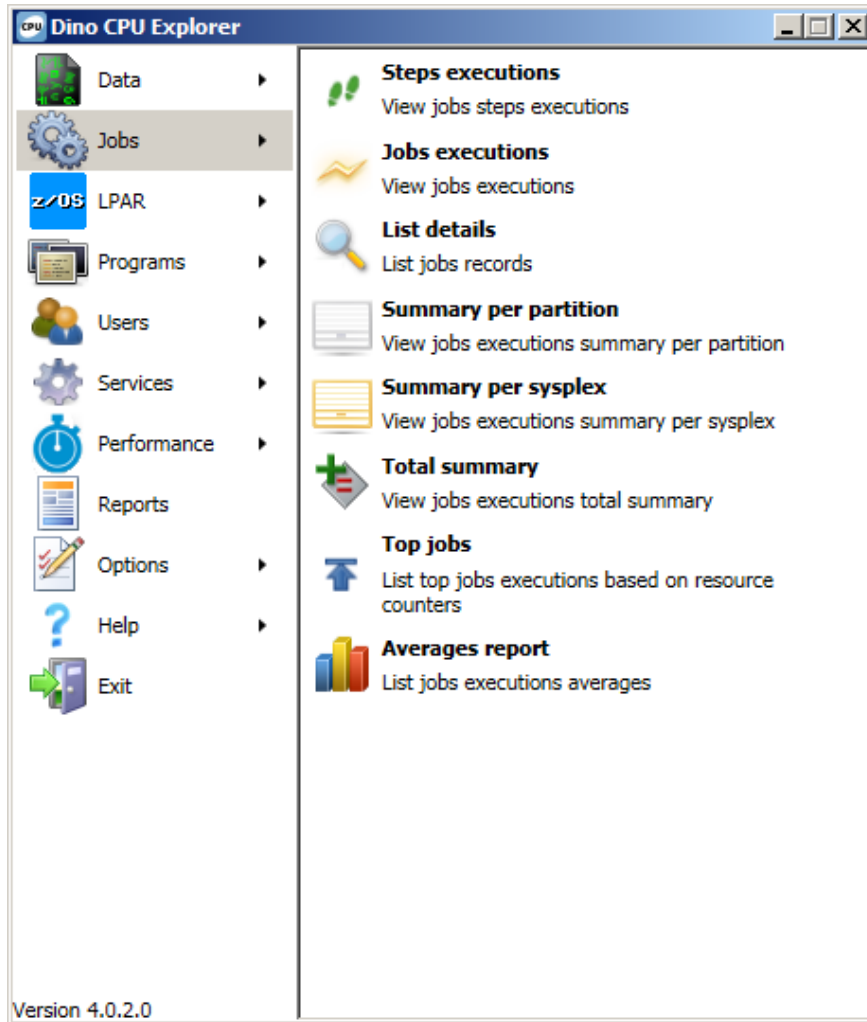


# Dino CPU Explorer Overview



# Introduction



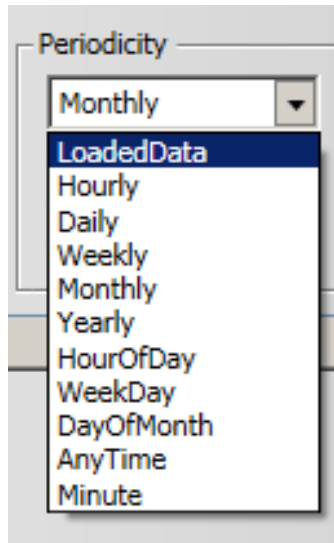
“Compile job and step executions resource counters into historical and execution views”

# Data Source

All information data can be grouped by line of business, applications or cost center correlating the mainframe historical use with the business.

SMF type	Description
30	Accounting records: step and jobs resource usage including interval records (subtype 2 and 3).
70	RMF CPU Activity: MSU's, defined and group capacity

# Big picture - Everything



All your mainframes summarized:

- per month
- or even in a single RMF interval

Start time	End time	CEC MSUs	Act-4h MSU	Avg MSUs	Max MSUs
31/05/2012 06:14:59.53	31/05/2012 23:59:59.02	4.776	2.246	1.648	2.551
01/06/2012 00:14:59.00	30/06/2012 23:59:59.00	4.776	3.614	1.382	4.731
01/07/2012 00:14:59.00	31/07/2012 23:59:59.01	4.776	2.661	1.380	4.756
01/08/2012 00:14:59.00	31/08/2012 23:59:59.02	4.776	3.482	1.519	4.745
01/09/2012 00:14:59.00	30/09/2012 23:59:59.00	4.776	3.760	1.414	4.763
01/10/2012 00:14:59.00	31/10/2012 23:59:59.01	4.776	2.570	1.507	4.731
01/11/2012 00:14:59.00	30/11/2012 23:59:59.01	4.776	3.440	1.494	4.739
01/12/2012 00:14:59.00	31/12/2012 23:59:59.00	4.776	3.971	1.603	4.757
01/01/2013 00:14:59.00	31/01/2013 23:59:59.03	4.776	3.438	1.657	4.761
01/02/2013 00:14:59.00	28/02/2013 23:59:59.01	4.776	3.751	1.644	4.755
01/03/2013 00:14:59.00	31/03/2013 23:59:59.00	4.776	4.220	1.712	4.752
01/04/2013 00:14:59.00	02/04/2013 06:59:58.98	4.776	3.397	1.848	4.738

# To executing tasks

So, it is straightforward to identify the bad guys:

- Classify the resulting grid per CPU time
- Drill down till you get all the steps

Job name	Job number	Start time	Step name	Program name	Execution type	Total service units	CPU Time
BACKUP	JOB00466	09/05/2014 10:19:49.03	FTP00001	FTP	JES2	146.377	00:00:02.550000
DEMOBUF	JOB00468	09/05/2014 11:00:10.36	GEN	IEBDG	JES2	504.742	00:00:06.800000
DEMOBUF	JOB00468	09/05/2014 11:00:18.96	COPY	IDCAMS	JES2	749.130	00:00:06.660000
DEMONBUF	JOB00469	09/05/2014 11:00:12.37	GEN	IEBDG	JES2	635.771	00:00:09.500000
DEMONBUF	JOB00469	09/05/2014 11:00:29.60	COPY	IDCAMS	JES2	998.245	00:00:11.260000
DEMOBUF	JOB00470	09/05/2014 11:09:40.03	GEN	IEBDG	JES2	494.772	00:00:06.850000
DEMOBUF	JOB00470	09/05/2014 11:09:48.05	COPY	IDCAMS	JES2	751.707	00:00:06.820000
DEMONBUF	JOB00471	09/05/2014 11:09:48.06	GEN	IEBDG	JES2	640.582	00:00:09.610000
DEMONBUF	JOB00471	09/05/2014 11:10:03.22	COPY	IDCAMS	JES2	997.824	00:00:11.250000
GAZOLA	TSU00467	09/05/2014 10:21:02.17	ISPFPROC	IKJEFT01	TSO	161.943	00:00:04.160000
PACHECO	TSU00465	09/05/2014 10:18:19.48	ISPFPROC	IKJEFT01	TSO	474.221	00:00:12.150000
BOOSTER	STC00385	08/05/2014 15:36:33.02	S1	BOOSTER	STC	121.892	00:00:02.350000

# CPU Activity



## Performance



### LPAR Activity

List LPAR activity performance summary



### Sysplex Activity

List Sysplex activity performance summary



### CEC Activity

List CEC activity performance summary



### Total Activity

List Total CPU activity history

- CPU times: CP, IFL, ZIIP, Zaap, ICF
- Active 4-hour MSUs, instant MSUs
- Defined and group capacities
- Configuration: #CPs

Start time	Lpar name	CEC name	Act-4h MSU	CEC MSUs	Avg MSUs	Max MSUs	I/O's	CP time
01/06/2012 00:14:59.00	P1	2817.724.82.00000000	552	2.090	849,85	849,85	786.184	02:08:08.748000
01/06/2012 00:29:59.00	P1	2817.724.82.00000000	572	2.090	796,05	796,05	0	02:00:01.958000
01/06/2012 00:44:59.00	P1	2817.724.82.00000000	607	2.090	1.034,80	1.034,80	209.562	02:36:02.029000
01/06/2012 00:59:59.00	P1	2817.724.82.00000000	622	2.090	687,51	687,51	276.182	01:43:39.985000
01/06/2012 00:14:59.00	P2	2817.724.82.00000000	257	2.388	632,38	632,38	164.871	01:35:21.226000
01/06/2012 00:29:59.00	P2	2817.724.82.00000000	255	2.388	260,35	260,35	123.527	00:39:15.453000
01/06/2012 00:44:59.00	P2	2817.724.82.00000000	259	2.388	370,79	370,79	38.235	00:55:54.587000
01/06/2012 00:59:59.00	P2	2817.724.82.00000000	264	2.388	354,75	354,75	90.056	00:53:29.464000
01/06/2012 00:14:59.00	P3	2817.724.82.00000000	7	1.194	11,36	11,36	0	00:01:42.811000
01/06/2012 00:29:59.00	P3	2817.724.82.00000000	7	1.194	7,07	7,07	6.150	00:01:03.963000
01/06/2012 00:44:59.00	P3	2817.724.82.00000000	7	1.194	9,07	9,07	0	00:01:22.014000
01/06/2012 00:59:59.00	P3	2817.724.82.00000000	8	1.194	14,02	14,02	8.329	00:02:06.810000
01/06/2012 00:14:59.00	P4	2817.724.82.00000000	120	2.388	183,99	183,99	43.420	00:27:44.581000
01/06/2012 00:29:59.00	P4	2817.724.82.00000000	132	2.388	271,55	271,55	41.094	00:40:56.793000
01/06/2012 00:44:59.00	P4	2817.724.82.00000000	140	2.388	221,57	221,57	56.419	00:33:24.602000
01/06/2012 00:59:59.00	P4	2817.724.82.00000000	142	2.388	127,65	127,65	116.807	00:19:14.849000

# Jobs Views



## Jobs



### Steps executions

View jobs steps executions



### Jobs executions

View jobs executions



### List details

List jobs records



### Summary per partition

View jobs executions summary per partition



### Summary per sysplex

View jobs executions summary per sysplex



### Total summary

View jobs executions total summary



### Top jobs

List top jobs executions based on resource counters



### Averages report

List jobs executions averages

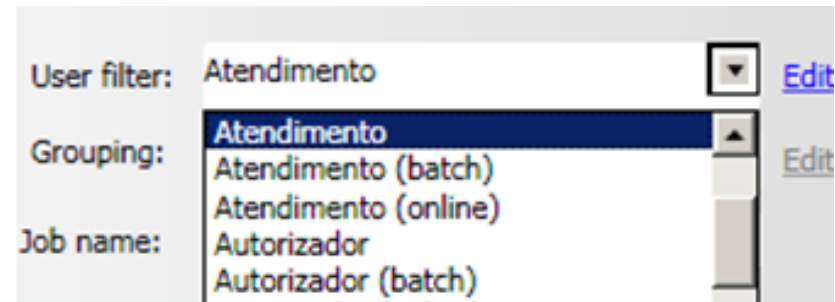
Mainframe applications are made of jobs

- ❑ Job history
- ❑ Job averages
- ❑ Application resource usage
- ❑ Elapsed time and room time
- ❑ Execution jobs and steps
- ❑ Top jobs

# Applications - Filtering

Applications are defined through filtering facility:

- SQL WHERE clauses
- You can redefine anytime
- You select it as a filter



Filter fields:	Values:	Selected values:
<p>Job name</p> <p>Job name</p> <p>Job number</p> <p>LCPU address</p> <p>Lpar MSUs</p> <p>Lpar name</p> <p>Lpar number</p> <p>Model num</p> <p>Perm MSUs</p> <p>Plant</p> <p>Program name</p> <p>RACF group</p>	<p></p> <p>Add &gt;&gt;</p> <p>&lt;&lt; Remove</p>	<p>_NA%</p> <p>_UR%</p> <p>_VA%</p>

(jobName LIKE '\_NA%' OR jobName LIKE '\_UR%' OR jobName LIKE '\_VA%') AND execType = 'JES2'



# Application patterns

The screenshot shows a 'Grouping Editor' window. The 'Grouping' dropdown is set to 'Sistema (jobname)'. The 'Target' is set to 'Any'. A list of fields is shown on the left, with 'Sistema' selected in the 'Group fields' list. Below the list, the SQL expression 'SUBSTRING(jobName, 2, 2)' is visible.

Sistema	Start time	Job executions	EXCP's count	Total service units
AR	02/02/2008 00:50:35.38	85.639	11.005.417.374	176.420.170.144
VO	02/02/2008 00:09:12.07	45.051	7.985.126.280	45.960.281.659
IB	02/02/2008 06:40:22.16	29.275	9.814.658.305	42.550.434.762
DW	02/02/2008 00:03:02.48	24.106	3.898.804.109	40.494.445.451
VY	02/02/2008 00:54:07.81	21.174	3.898.592.031	36.656.822.222
MB	02/02/2008 00:41:15.49	34.699	12.199.723.351	31.950.469.178



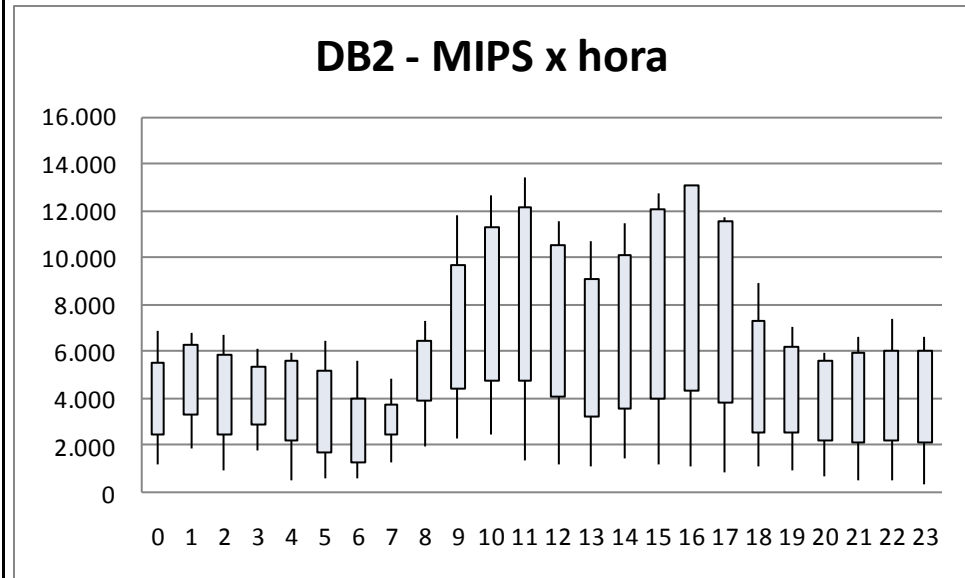
## Grouping

Edit query grouping by clauses

Sistema = SUBSTRING(jobname,2,2)

# Application - MIPS Calculation

MIPS x hour						
Hour	Avg	Stdev	Avg down	Max	Min	Avg up
0	4.025,65	1.509,16	2.516,49	6.846,65	1.201,75	5.534,80
1	4.782,39	1.493,71	3.288,68	6.787,07	1.860,11	6.276,11
2	4.185,34	1.722,70	2.462,64	6.706,06	975,76	5.908,04
3	4.115,04	1.247,27	2.867,77	6.118,70	1.837,55	5.362,31
4	3.922,08	1.706,84	2.215,25	5.970,13	518,08	5.628,92
5	3.444,16	1.742,05	1.702,11	6.439,81	568,78	5.186,21
6	2.660,59	1.360,14	1.300,45	5.610,01	612,72	4.020,73
7	3.124,99	648,27	2.476,71	4.854,08	1.305,46	3.773,26
8	5.160,87	1.281,38	3.879,50	7.316,06	1.983,43	6.442,25
9	7.074,38	2.624,72	4.449,66	11.825,42	2.290,78	9.699,10
10	8.006,10	3.262,49	4.743,62	12.646,73	2.466,38	11.268,59
11	8.450,29	3.725,22	4.725,07	13.405,77	1.380,40	12.175,50
12	7.334,36	3.228,40	4.105,96	11.589,17	1.235,07	10.562,76
13	6.184,52	2.916,43	3.268,09	10.747,51	1.122,62	9.100,95
14	6.853,33	3.276,98	3.576,35	11.435,69	1.445,94	10.130,31
15	8.053,70	4.031,06	4.022,63	12.740,11	1.171,84	12.084,76
16	8.702,38	4.381,54	4.320,84	13.074,22	1.147,94	13.083,93
17	7.654,93	3.859,45	3.795,48	11.750,21	895,15	11.514,38
18	4.944,86	2.347,68	2.597,18	8.930,03	1.081,73	7.292,54
19	4.388,39	1.847,58	2.540,81	7.043,15	979,29	6.235,97
20	3.925,91	1.723,57	2.202,33	5.963,77	735,82	5.649,48
21	4.022,89	1.908,24	2.114,65	6.623,76	546,38	5.931,13
22	4.136,51	1.873,88	2.262,62	7.393,28	565,12	6.010,39
23	4.079,05	1.961,99	2.117,06	6.656,74	380,90	6.041,04



□ MIPS = ServiceUnits-per-hour/180000

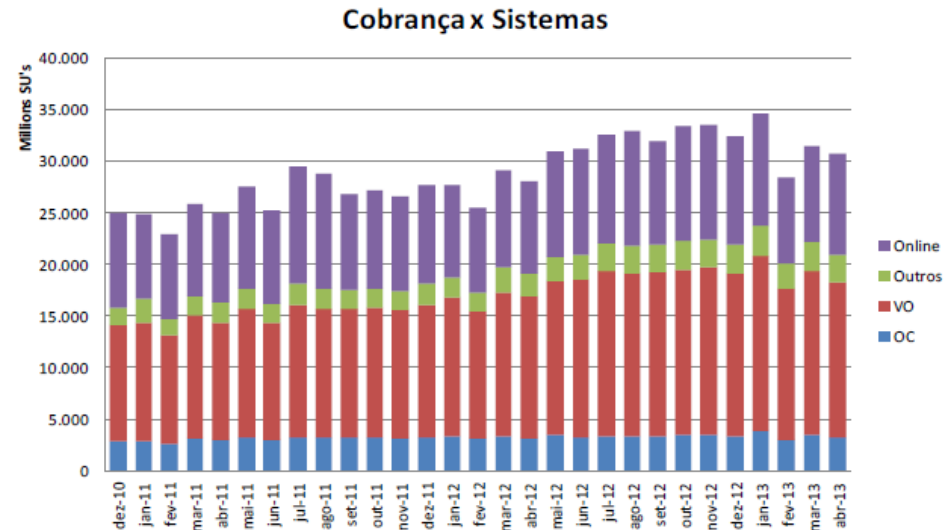
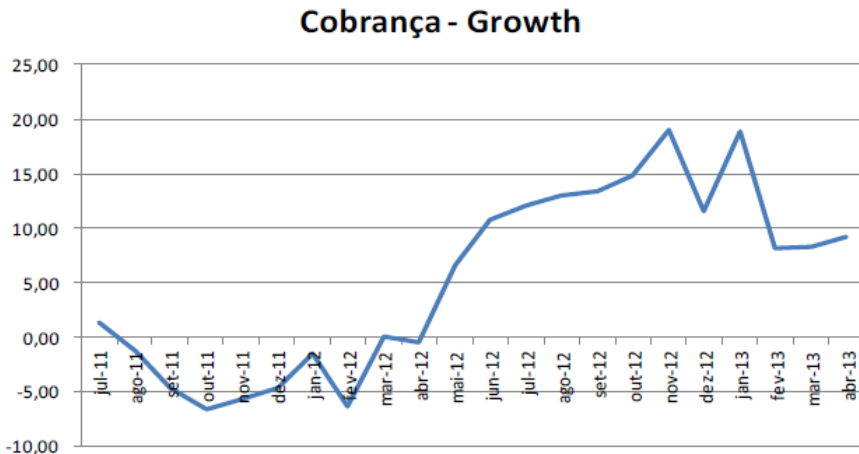
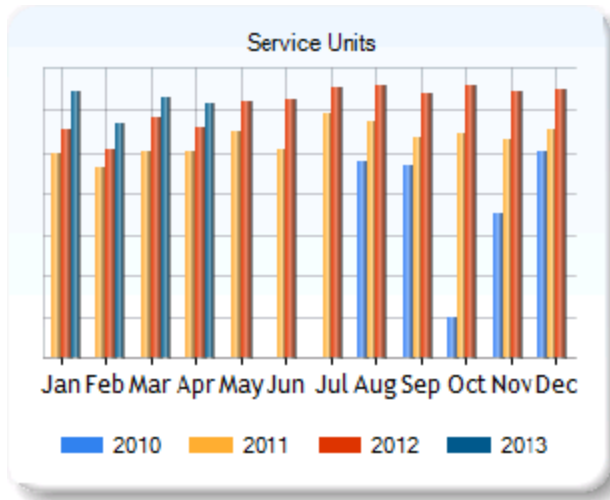
# Acting areas

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- Production statistics;
- Production monitoring;
- Charge-back;
- Performance and capacity planning;

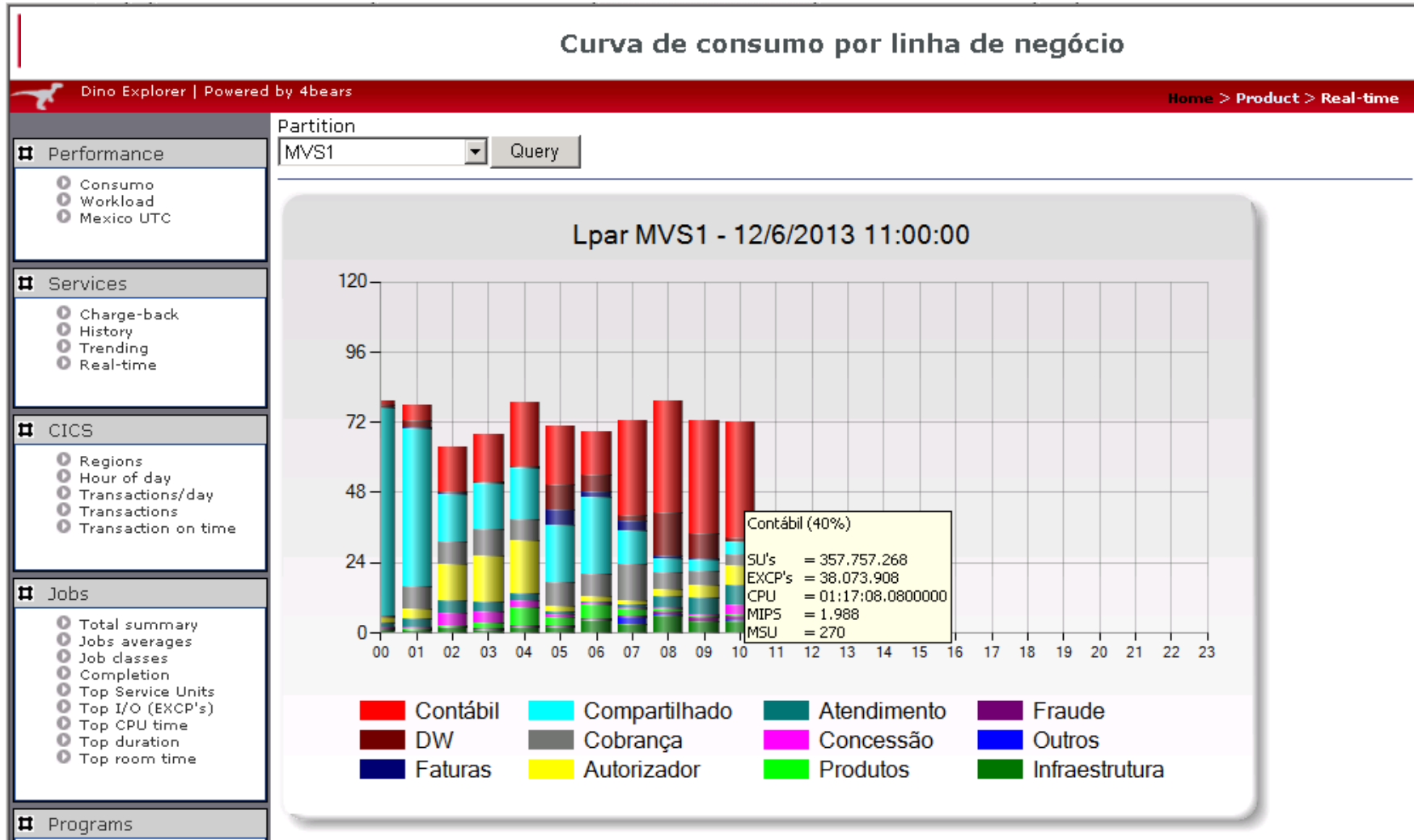
# Dashboard eg. – Production statistics

- Production accompaniment by business line;



# Dashboard eg. – Production monitoring

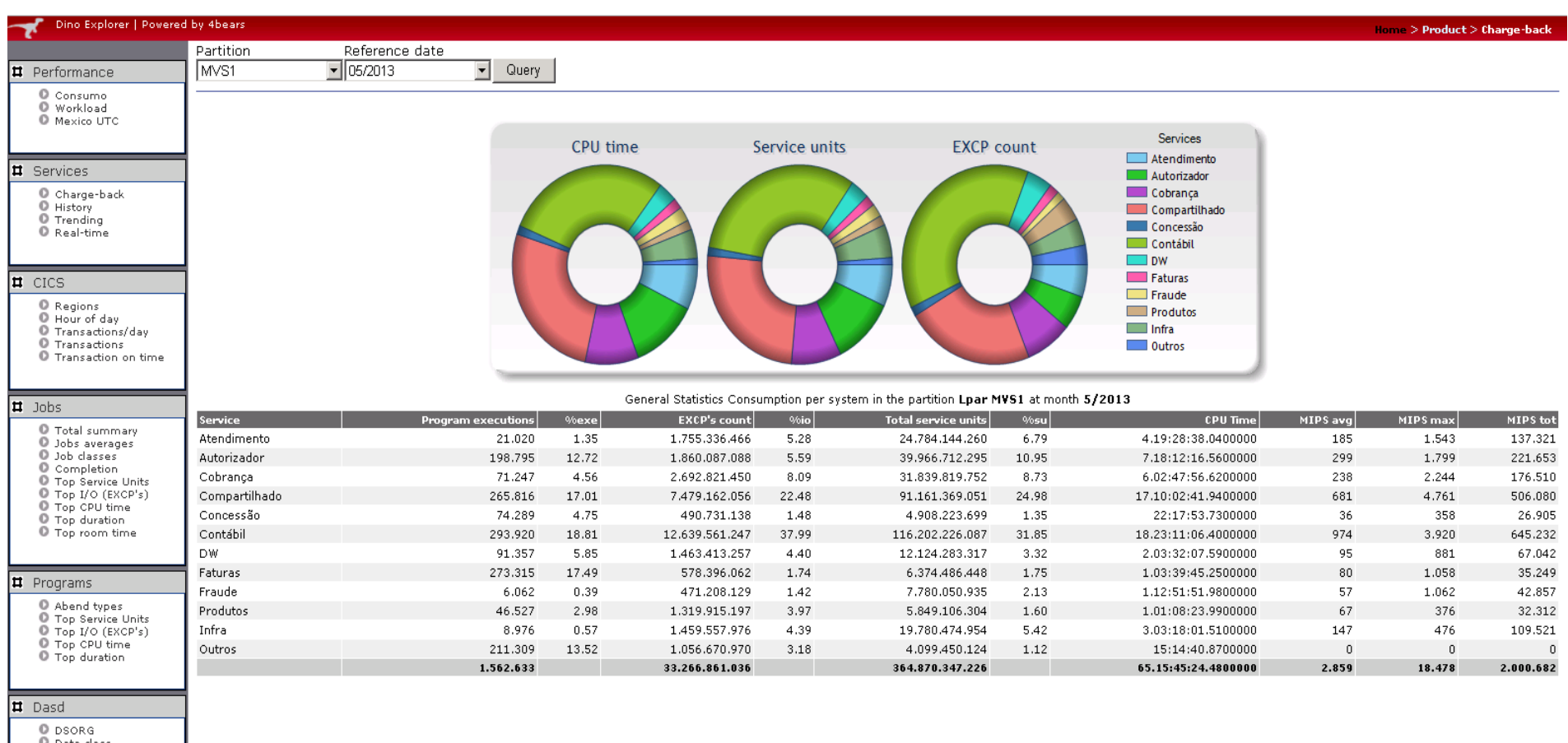
- Real time monitoring by business line



# Dashboard eg. - Charge-back

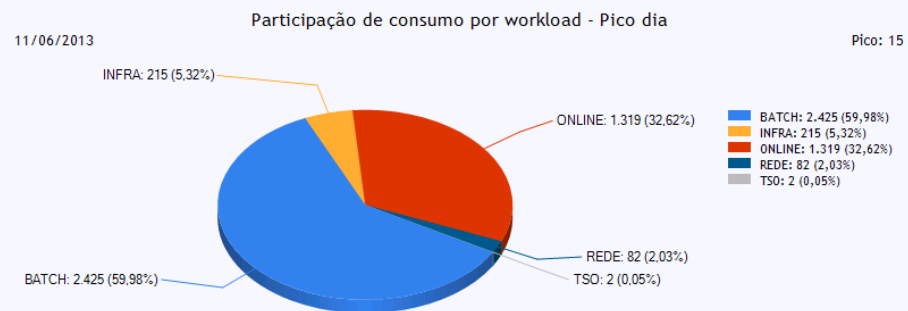
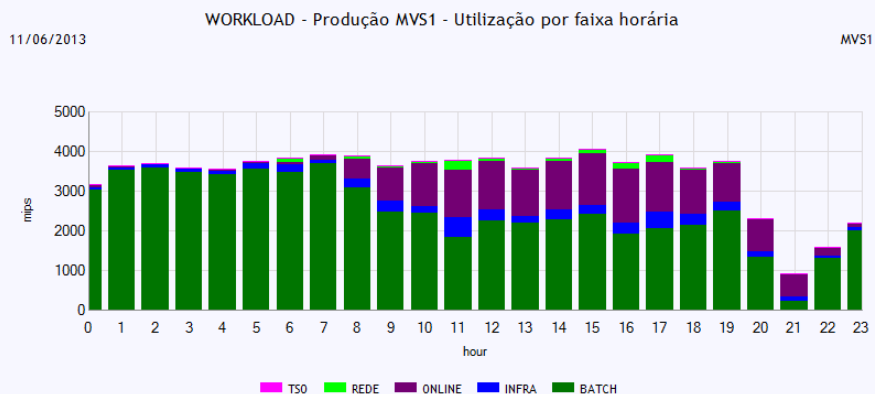
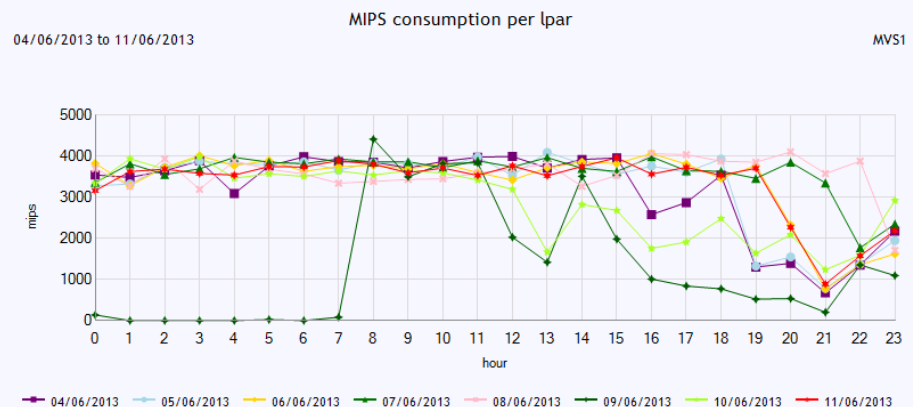
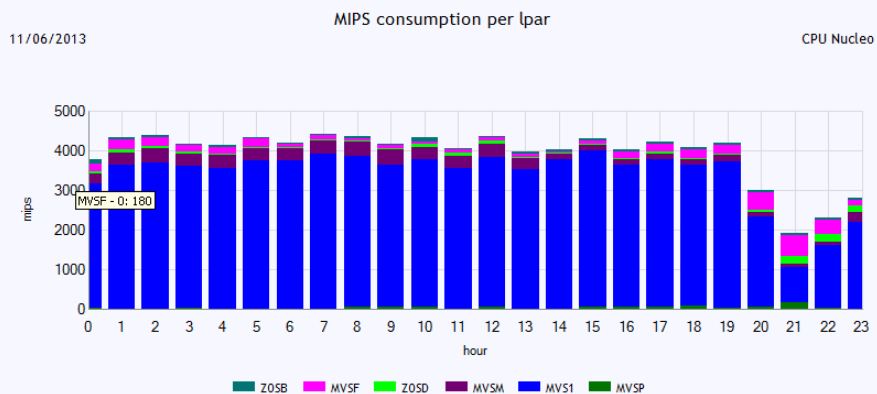
## □ Charge-back by business line

### Services charge-back



# Dashboard eg. - Performance and Capacity Planning

## □ MIPS consumption by business line



# Performance fields

## List of fields and counters:

Start time	L.CP	Lpar MSUs	Acc active LCPU	Wait count	zAAP busy time
End time	zAAP CPUs	Act-4h MSU	Acc actual shr	IO SLIH count	zAAP over time
Seconds	zIIP CPUs	Cap. MSU	Acc Block disp.	TPI count	zAAP wait time
SID	ICF CPUs	CEC MSUs	Acc AS blocked	Acc Disp Int	zAAP online time
Sysplex name	IFL CPUs	CEC grp long MSU	Max AS blocked	CP time	zIIP busy time
System name	CPU factor	Avg MSUs	Block dispatched	CP over	zIIP over time
Lpar name	zIIPs factor	Min CP MSU's	TCB dispatched	CP wait time	zIIP wait time
Cluster name	LCPU factor	Max MSUs	SRB dispatched	CP online	zIIP online time
Group name	Adj factor	Stdev CP MSU's	I/O's		ICF busy time
CEC name	Polarization factor	Sw SU's	SIGP's		ICF over time
					IFL busy time



# CPU history fields

## List of fields and counters:

<b>Program name</b>	<b>Executions</b>	<b>CPU Time</b>	<b>Connected time</b>
<b>Job name</b>	<b>EXCP's count</b>	<b>SRB Time</b>	<b>DASD connected time</b>
<b>Start time</b>	<b>DASD SSCH count</b>	<b>RCT Time</b>	<b>DASD disconnected time</b>
<b>End time</b>	<b>Enclave SSCH Count</b>	<b>Interrupt Time</b>	<b>DASD Pending Time</b>
<b>System name</b>	<b>Total service units</b>	<b>Enclave Time</b>	<b>Enclave Connection Time</b>
<b>Sysplex name</b>	<b>CPU service units</b>	<b>Dep. Enclave Time</b>	<b>Enclave Disconnect Time</b>
<b>SID</b>	<b>SRB service units</b>	<b>Transaction time</b>	<b>Enclave Pending Time</b>
<b>Completion code</b>	<b>I/O service units</b>	<b>VIO Count</b>	<b>Transactions</b>
<b>Condition code</b>	<b>MSO service units</b>	<b>Execution type</b>	

# Conclusion

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CPU Explorer is the fastest way to get updated information about your mainframe production, becoming your day by day companion.

# Contact



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