OMEGAMON XE for IMS

What‘s new in v5.3.0

Klaus SCHUNK

Klaus.Schunk@de.ibm.com

OMEGAMON XE for IMS – what‘s new in v5.3.0

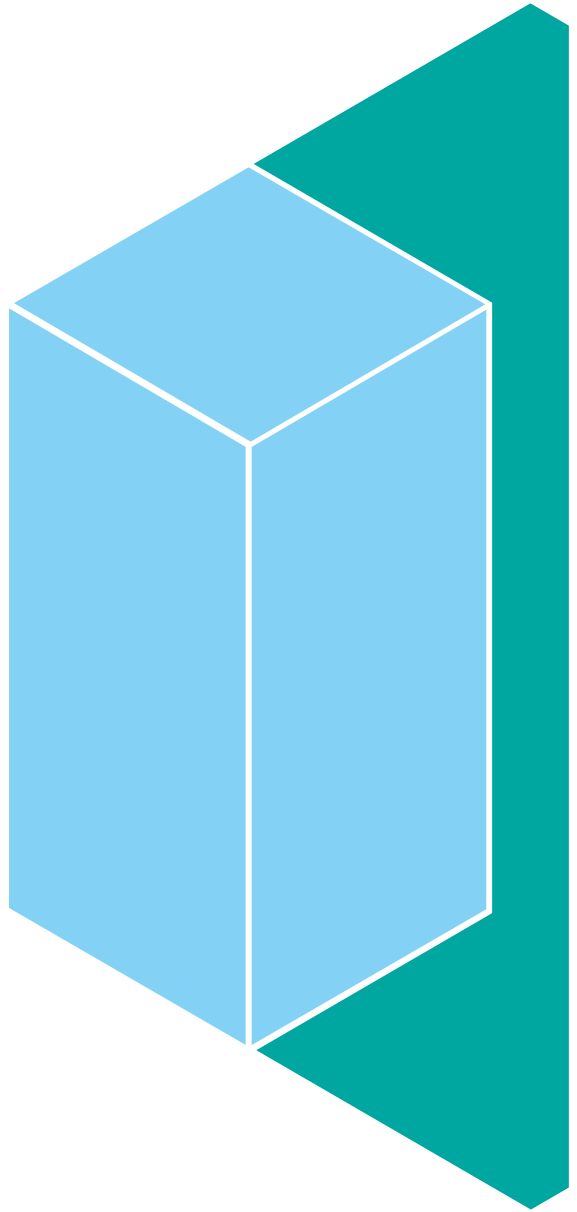
IMS Technical Symposium 2016

Date: 03/08/2016 Session: C03

- **(Looking Back) Over My Shoulder**
  - **v3.1.0 - Retrospection**
  - **v4.1.0 - Retrospection**
  - **v5.1.0 - Retrospection**
  - **Components and Facilities**
- **Hey! Ho! Let’s Go!**
  - **v5.3.0 - what‘s new**
  - **v5.3.0 - e3270ui enhancements**

(Looking Back) Over My Shoulder

https://www.youtube.com/watch?v=Cr9-v1GZutg



OMEGAMON XE for IMS v3.1.0

IBM Tivoli OMEGAMON XE for IMS on z/OS v3.1.0 - „what was new“

- **OMEGAMON IMS V100 & OMEGAMON IMSplex V220 were combined to a single product**

- **Small Programming Enhancements (SPEs) added to previous release**
  - OTMA Support
  - Exception Analysis
  - New Product Provided Situations
  - Shared OTMA Queues
  - Historical Support

- **New enhancements to v3.1.0**
  - Remove z/OS CMS Hub dependency
  - On demand (real time) collection
  - IMS System and IMSplex views in different TEP Hierarchy
  - IMS Connect (Phase 1) support
  - Cold Queues and APPC support for Shared Queues
  - Lock owners/waiters displayed on same line
  - FP WFI Support
  - TRF Batch support for shared IMS Queue environment

OMEGAMON XE for IMS v4.1.0

IBM Tivoli OMEGAMON XE for IMS on z/OS v4.1.0 - „what was new“

- Multiple enhancements of the Application Trace Facility to expand breadth and depth of information.
  It provides additional DL/I, DB2, and MQSeries® call detail, as well as archival to VSAM for greatly increased data retention
- Near-Term History (formally Online-TRF) has been enhanced to provide greatly increased data retention
  allowing for 24x7 data collection and viewing. Automatic trace collection is also enabled at OM startup
- Locking enhancements - Program isolation (PI) conflicts and a list of locks held awaiting for the
  lock owner is displayed in the TEP interface to quickly identify inhibitors to processing
- Global locking has also been enhanced to display top-blocker allowing for quicker and easier identification of lock conflicts
- Bottleneck Analysis ported into the Tivoli Enterprise Portal (TEP) XE interface.
  Full support of both long and short term information, which displays wait reasons for executing and competing transactions
- Response Time Analyzer (RTA) ported into the Tivoli Enterprise Portal (TEP) XE interface.
  Full support of Interval response, Slotted Time Response, Group Response, and End-to-End Response
- Additional enhancements include Input and Output Shared Queue time as well as reporting response time
  to milliseconds in both Classic 3270 and XE TEP interfaces
- Additional MQSeries® performance metrics are displayed in the Tivoli Enterprise Portal (TEP) interface
- Additional wait reasons have been added for MQSeries® to Dependent Region.
  Status and Bottleneck Analysis providing earlier problem detection of IMS applications using MQSeries® resources

OMEGAMON XE for IMS v5.1.0

IBM Tivoli OMEGAMON XE for IMS on z/OS v5.1.0 - „what was new“

- **Total Cost of Ownership and Time to Value Improvements [reduces Full Time Employees (FTE) and improves Return On Investment (ROI)]**
  - Self-Describing Agents (SDA)
  - PARMGEN Configuration
  - Enhanced 3270 User Interface (e3270ui) problem solving scenarios

- **IMS command support**
  - Ability to issue IMS commands
    - Type-1 and Type-2 commands
  - IMS commands can be directed to an **individual IMS** or an **IMSplex**
  - Security checking performed to ensure user is authorized to issue the command
  - Command support provided in Enhanced 3270 User Interface (e3270ui)
  - ICMD collector must be enabled

- **MIPS reduction**
  - Application Trace Facility (ATF) ECSA VSCR
  - TRF Near Term History (NTH) removal
  - CPU hotspots were identified and reduced where possible

IBM Tivoli OMEGAMON XE for IMS on z/OS v5.1.0 - „what was new“

PARMGEN – new Configuration Method

- PARMGEN is the preferred method for configuring OMEGAMON XE Family and Tivoli Management Services (TMS) products on z/OS
- OMEGAMON XE for IMS on z/OS v5.1.0 will fully support configuration with PARMGEN
- ICAT Batch and interactive also supported in v5.1.0

Enhanced 3270 User Interface

- Initial support for Enhanced 3270 User Interface
- Includes IMSplex support
- Workspaces are designed to have the same look and feel as other OMEGAMON products and are based on problem solving scenarios such as
  - Overall health – (general navigation)
  - Resource Contention (lock conflicts)
  - High CPU usage (looping transaction)

Application Trace Facility (ATF) ECSA VSCR

- **Problem**
  - ECSA is a critical system resource
  - Under high volume IMS workloads, an ATF trace may result in a shortage of ECSA causing the ATF data collection to be suspended until ECSA becomes available resulting is loss of trace data
- **Solution**
  - ATF has replaced its use of ECSA for data collection with the use of 64-bit common
  - ATF storage has been optimized to occupy a smaller footprint for each record by using variable lengths
- ATF was updated in v5.1.0 to use 64-bit common storage, using “large pages” where available

IBM Tivoli OMEGAMON XE for IMS on z/OS v5.1.0 - „what was new“

Use of Large Page Frames

- JLF was updated via PTF in v4.2.0 to use Large Page Frames of 1M versus 4K pages
  - Performance improvement. Large Pages are fixed in real memory resulting in much less paging overhead, 30% reduction in paging
  - This dramatically reduces the working set size as we are removing 16,384 4K pages from virtual storage for each 64Mb memory object/segment we allocate
- Encourage customers to configure LFAREA in IEASYSxx.
  - New minor of RMLF for SYS command
  - New minor of LPAG for PEEK command
  - DISPLAY VIRTSTOR,LFAREA
- ATF was updated in v5.1.0 to use 64-bit common storage
  - ATF is using “large pages” where available

Components and Facilities

IBM Tivoli OMEGAMON XE for IMS on z/OS – „Components & Facilities“

Real Time

- ***Real Time Monitor***
  - *Subsystems, regions, resources, pools, DBs, Fast Path*
  - *IMS Connect, OTMA*
- ***Response Time Analysis (RTA)***
  - *Transaction Response time by user defined groups*
- ***Bottleneck Analysis***
  - *Workload performance and task analysis*
- ***Operator Assist & Integrated Console Facility***
  - *IMS resource commands*
- ***Multiple System and Plex level information***
  - *N-way data sharing, Global Locking, Multiple Systems Coupling, shared queues*
- ***Exceptions, Alerts, Integration***
  - *Integrated alert/automation and analysis*

Historical

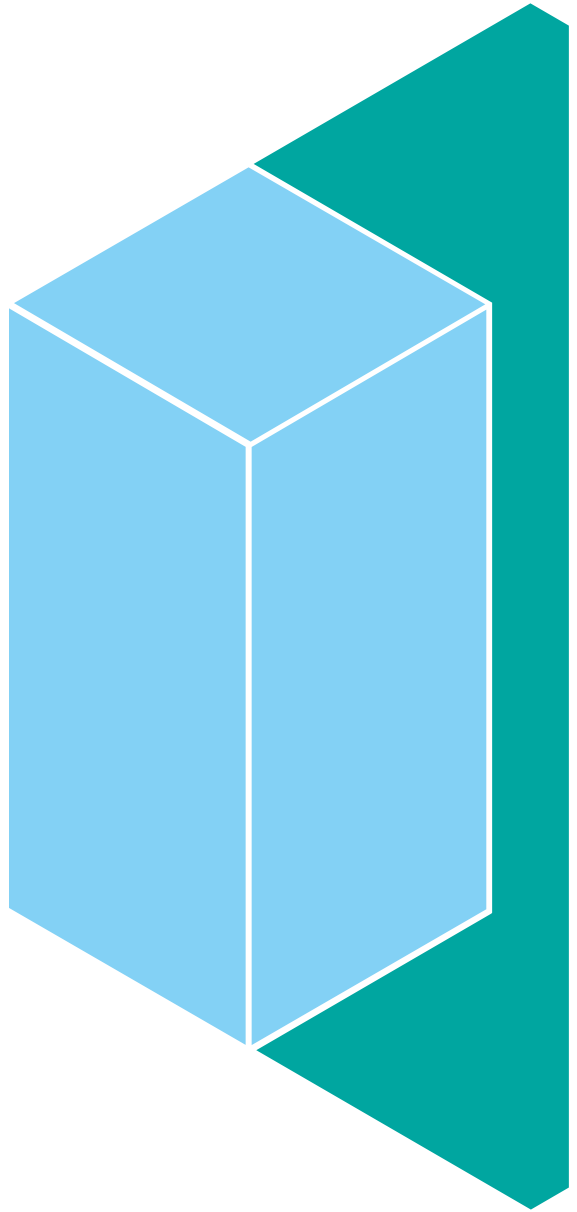
- ***EPILOG Historical***
  - *Historical analysis of transaction response, bottlenecks and IMS resources by group & interval*
  - *Stored in Epilog Data Store (EDS)*
- ***Application Trace Facility***
  - *Detailed application API metrics*
  - *Transaction summary metrics*
- ***Near Term History***
  - *Eligible enhanced 3270 workspaces are enabled for history mode*
- ***XE Snapshot Historical***
  - *Snapshot historical stored in the Tivoli Data Warehouse*
  - *Reporting, trending, baselines*
- ***Integration***
  - *IMS Performance Analyzer (IMS/PA)*
  - *IMS Problem Investigator (IMS/PI)*

IBM Tivoli OMEGAMON XE for IMS on z/OS – „can solve problems about …“

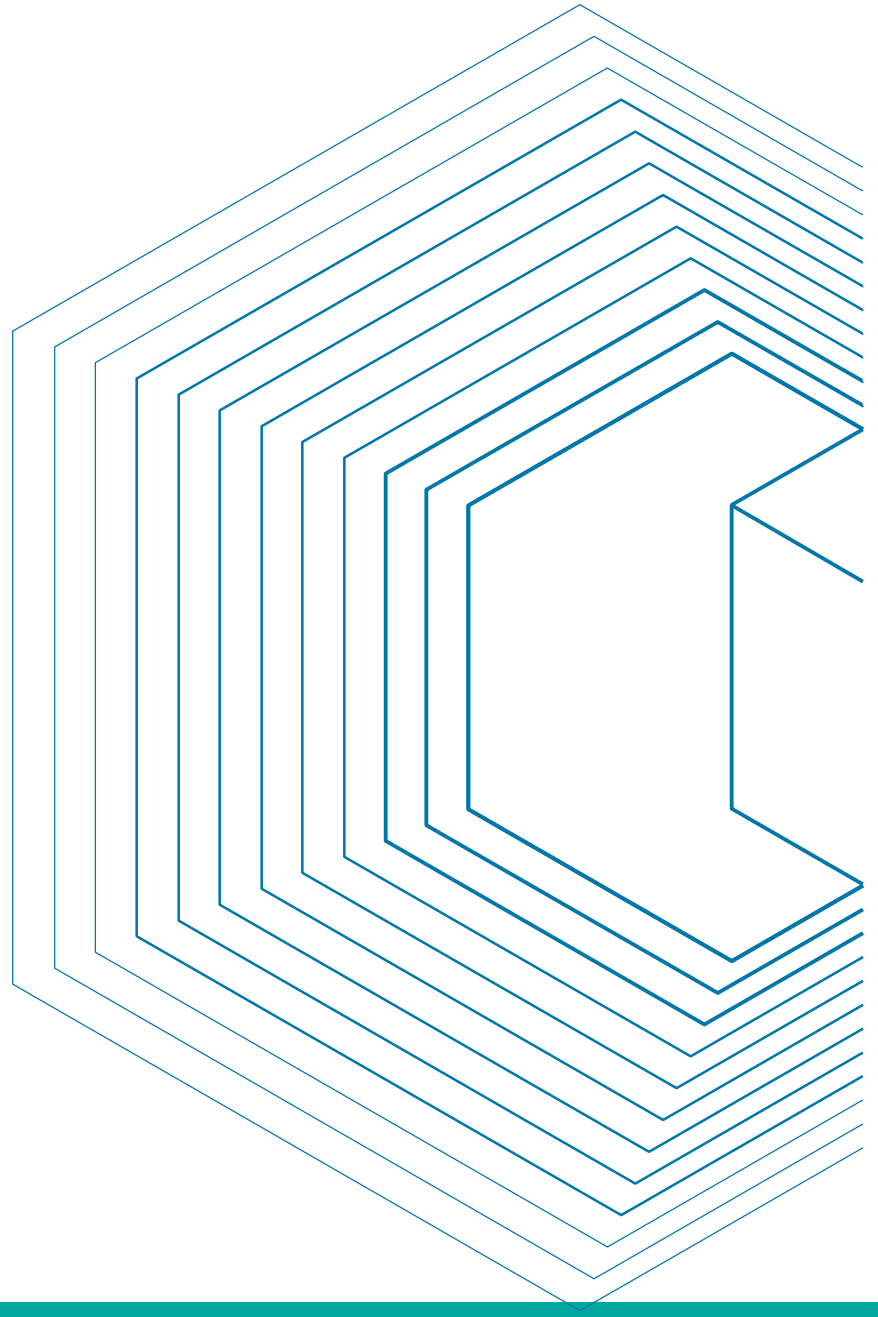
Delays	what is going on with the coupling facility structures
Outages	details on the Shared Queues Counts
System Slowdowns	details on database lock conflicts
Response Times	a transaction and why it is being delayed in the IMS domain
Transactions	with details on input/output queue time, processing time, internal response time and total response time
Databases	especially high availability large databases (HALDBs) monitoring and reporting including summary and partition details
Currency	with the new features and functions on IMS V14 and IMS Connect
Resource Constraints	with a single point of control for managing SYSplex IMS environments
Bottlenecks	with DBCTL thread activity real-time monitoring and DL/I call reporting and statistics for Full Function regions and for Fast Path WFI (Waiting For Input) regions

Hey! Ho! Let's Go!

https://www.youtube.com/watch?v=yjPn8ygmmBY



What's new in v5.3.0



IBM Tivoli OMEGAMON XE for IMS on z/OS v5.3.0 - „what‘s new“

Currency

- Day 1 support of IMS v14.1
- Latest CICS release support
- Toleration of 128 CPUs per LPAR
- Removed 10+ hooks into IMS and now use IMS exits where available

Deprecated Components

- **JLF** has been replaced **with z/OS log streams** to record **ATF data**
- **TRF** has been removed (see above)
  - Use ATF and IMS Performance Analyzer instead to produce charge-back or performance reports (requires APAR PI44855)
  - Use ATF and IMS Problem Investigator instead to produce performance reports (requires APAR PI44856)
- **SAP/R2** has been removed
- **ETE** has been removed
- **IMS 9.1** support has been removed

Global Definitions moved to a Text Member

- **KOIGBLxx** has been deprecated, replaced with **KIPGLBxx**
- **KIPGLBCR** sample will create the default KIPGLBxx member
- **KIPGLBCV** sample will convert **KOIGLBxx** to **KIPGLBxx**
- **KIPGLBVR** sample will verify the syntax of a **KIPGLBxx** member
- **PARMGEN** allows sharing the global member repository dataset across an RTE boundary

Application History (ATF) Enhancements

- JLF has been replaced with z/OS log streams reducing storage footprint, especially 64-bit memory which was the subject of an RFE
- New startup parameters to support the ATF log streams
  - SUMMLOGR
  - DETLLOGR
  - SUMXLOGR
  - DETXLOGR
- Following startup parameters are deprecated for ATF
  - BUFFSIZE – ECSAMAX – TOTTRANS - TRACE
- Hooks have been removed in favor of IMS Monitor exit in IMS 14.1
- New Trace options
  - Transaction count limit
  - BMP trace by message/CHKP (each CHKP treated as separate transaction)
- New status field to show if trace stopped due to transaction count limit ATVD events are now shown in chronological order
- Changed startup parameter default for 64-bit memory – ATFBUFF now defaults to 512
- Data is written synchronously to system logger eliminating another 64-bit memory queue and improving throughput
- ATF trace definitions may now use Backup/Restore/Deploy utility (REXX)
  - Define common traces in one Classic region and deploy to others
  - Backup/Restore ATF trace definitions

IMS Exit Usage

- xKANMODR is locating all IMS Exits and their Support Routines
- xKANMODR is now concatenated in IMS control region STEPLIB rather than the entire xKANMOD library reducing the need to cycle the IMS control region to apply maintenance
- All IMS exits are release agnostic reducing configuration effort
- **LOGWRT** is the **Log Writer User Exit** and is used by the RTA component.
- **PPUE** is the **Product Partner User Exit** used by our IMS type-1 command support
- **IMSMON** is the **IMS Monitor User Exit** used by the ATF component for IMS v14.1 only

Miscellaneous Items

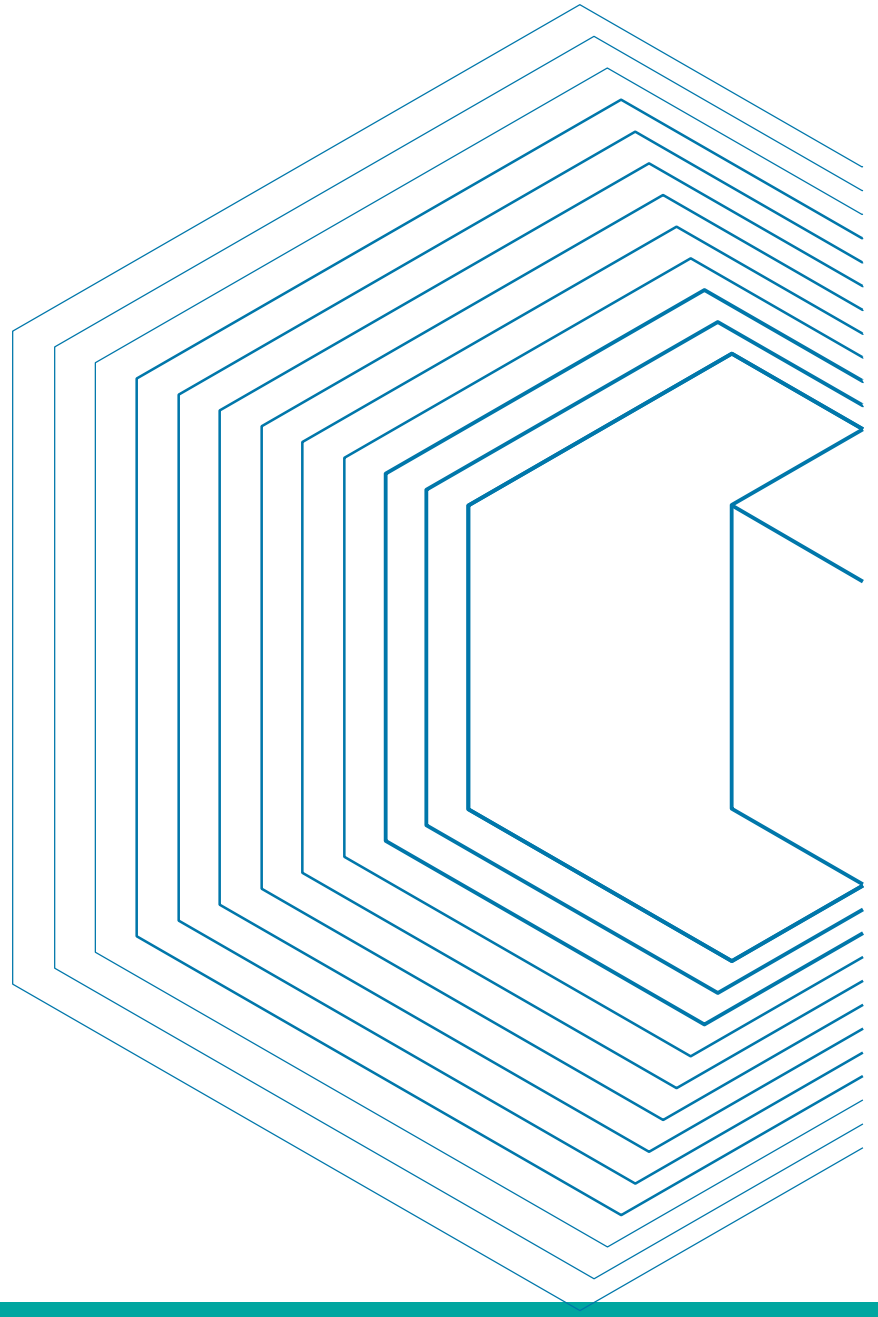
RFE	Automatically start RMON
RFE	Add SQ Affinity count to IMS Health workspace
RFE	Add startup message to console for automation
Feedback	Added ATF Status column to Monitored IMS Systems
Feedback	Added Zoom capability to several e3270ui workspaces
Feedback	Added ASIDX to KIPDEPS for use with Take Action
ICAT removal	PARMGEN is only configuration tool now
zIIP	NTH (Near Term History)

New enhanced e3270ui Contents

- **ATF** (Application Trace Facility)
- **NTH** (Near Term History)
- **Bottleneck Analysis**
- **DBCTL Threads**
- **MSC** (Multiple Systems Coupling)
- **RTA** (Response Time Analysis)
- **SQ** (Shared Queues)
- **OTMA, TMember** and **TPipe**
- **Storage Pools** and **Subpools**
- **VSAM, OSAM** and **Database Buffer Pools**
- **Embedded CICS Data Subpanels** in **Locks** and **DBCTL Thread** workspaces
- **IMS Command Support** for **Type-1** and **Type-2** (Type-1 added)

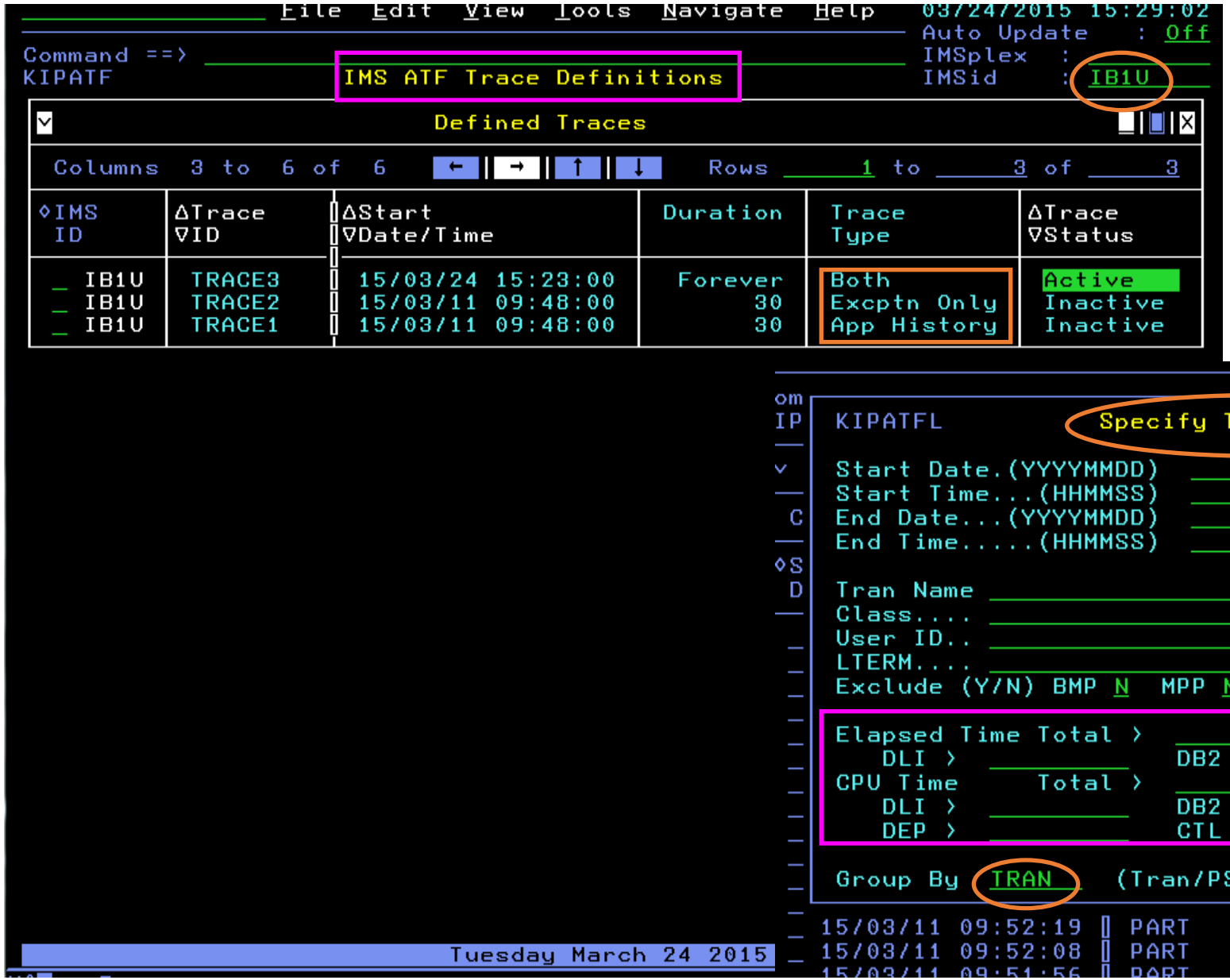
- **IMS and IMSPlex Health and System Information**
- **Address Spaces**
- **Dependent Regions**
- **Global and Local locks**
- **Shared Queues**
- **DBCTL Threads**
- **MSC (Multiple Systems Coupling)**
- **OTMA**
- **Storage Pools and Subpools**

e3270ui Enhancements



Application Trace Facility (ATF)

Application Trace Facility (ATF)



Application Trace Facility (ATF)

File Edit View Tools Navigate Help 03/24/2015 15:33:07
Auto Update : Off
Command ==>
IMSplex :
KIPATFT IMS ATF Exceptions IMSid : IB1U

Exceptions

Columns 2 to 6 of 17 Rows 1 to 29 of 300

◊Start Date/Time	Tran Name	PSB Name	Job Name	LTerm Name	Abend Code
15/03/11 09:54:47	DLETPART	DFSSAM04	IMSBUMS1	CDICK	
15/03/11 09:54:46	DLETINV	DFSSAM04	IMSBUMS1	CDICK	
15/03/11 09:54:45	DSPALLI	DFSSAM07	IMSBUMS1	CDICK	
15/03/11 09:54:44	DSPINV	DFSSAM03	IMSBUMS1	CDICK	
15/03/11 09:54:43	DSPINV	DFSSAM03	IMSBUMS1	CDICK	
15/03/11 09:54:42	ADDINV	DFSSAM04	IMSBUMS1	CDICK	
15/03/11 09:54:40	ADDPART	DFSSAM04	IMSBUMS1	CDICK	
15/03/11 09:54:39	DSPINV	DFSSAM03	IMSBUMS1	CDICK	
15/03/11 09:54:38	DSPALLI	DFSSAM07	IMSBUMS1	CDICK	
15/03/11 09:54:37	PART	DFSSAM02	IMSBUMS1	CDICK	
15/03/11 09:54:36	DLETPART	DFSSAM04	IMSBUMS1	CDICK	
15/03/11 09:54:35	DLETINV	DFSSAM04	IMSBUMS1	CDICK	
15/03/11 09:54:34	DSPALLI	DFSSAM07	IMSBUMS1	CDICK	
15/03/11 09:54:33	DSPINV	DFSSAM03	IMSBUMS1	CDICK	
15/03/11 09:54:32	DSPINV	DFSSAM03	IMSBUMS1	CDICK	
15/03/11 09:54:31	ADDINV	DFSSAM04	IMSBUMS1	CDICK	
15/03/11 09:54:29	ADDPART	DFSSAM04	IMSBUMS1	CDICK	
15/03/11 09:54:28	DSPINV	DFSSAM03	IMSBUMS1	CDICK	
15/03/11 09:54:27	DSPALLI	DFSSAM07	IMSBUMS1	CDICK	
15/03/11 09:54:26	PART	DFSSAM02	IMSBUMS1	CDICK	
15/03/11 09:54:25	DLETPART	DFSSAM04	IMSBUMS1	CDICK	
15/03/11 09:54:24	DLETINV	DFSSAM04	IMSBUMS1	CDICK	
15/03/11 09:54:23	DSPALLI	DFSSAM07	IMSBUMS1	CDICK	
15/03/11 09:54:22	DSPINV	DFSSAM03	IMSBUMS1	CDICK	
15/03/11 09:54:21	DSPINV	DFSSAM03	IMSBUMS1	CDICK	
15/03/11 09:54:19	ADDINV	DFSSAM04	IMSBUMS1	CDICK	
15/03/11 09:54:18	ADDPART	DFSSAM04	IMSBUMS1	CDICK	
15/03/11 09:54:17	DSPINV	DFSSAM03	IMSBUMS1	CDICK	
15/03/11 09:54:16	DSPALLI	DFSSAM07	IMSBUMS1	CDICK	

Tuesday March 24 2015

MA B 01/002

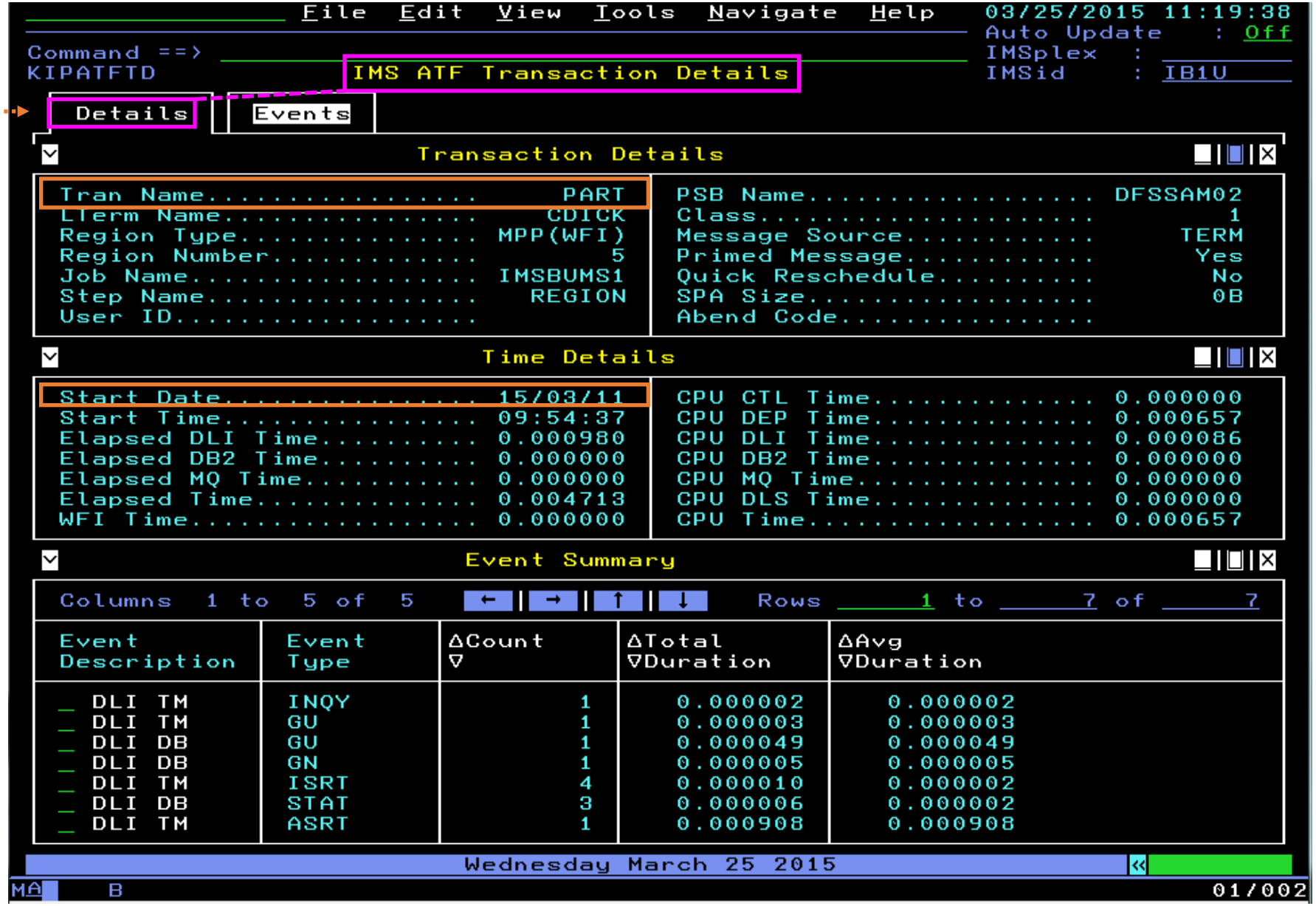
File Edit View Tools Navigate Help 03/24/2015 15
Auto Update
Command ==>
IMSplex :
KIPATFT IMS ATF Trace Summary IMSid : IB

Trace Instances for PART TRAN

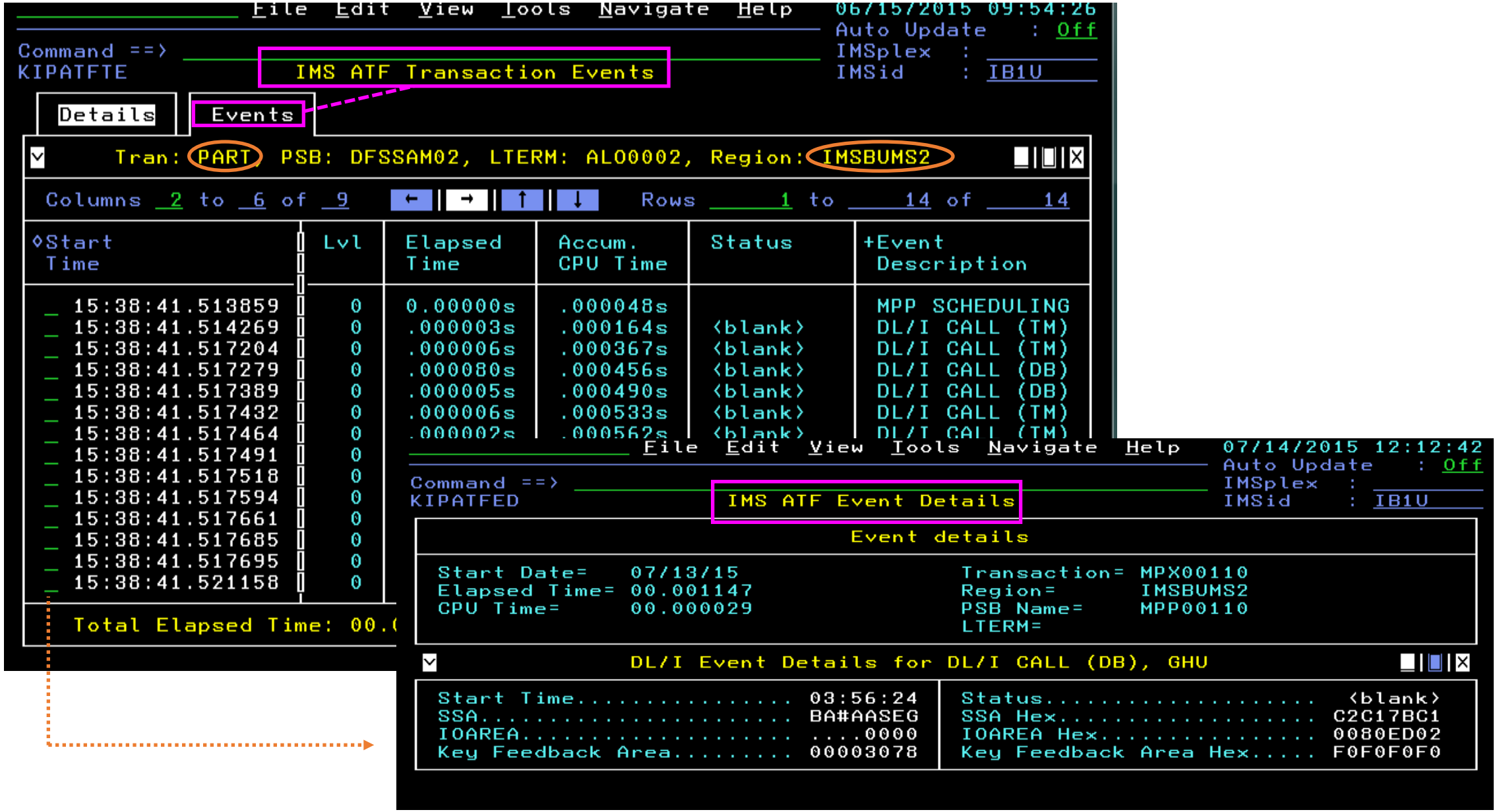
Columns 2 to 6 of 17 Rows 1 to 29 of

◊Start Date/Time	Tran Name	PSB Name	Job Name	LTerm Name	Abend Code
15/03/11 09:54:37	PART	DFSSAM02	IMSBUMS1	CDICK	
15/03/11 09:54:26	PART	DFSSAM02	IMSBUMS1	CDICK	
15/03/11 09:54:15	PART	DFSSAM02	IMSBUMS1	CDICK	
15/03/11 09:54:04	PART	DFSSAM02	IMSBUMS1	CDICK	
15/03/11 09:53:53	PART	DFSSAM02	IMSBUMS1	CDICK	
15/03/11 09:53:42	PART	DFSSAM02	IMSBUMS1	CDICK	
15/03/11 09:53:30	PART	DFSSAM02	IMSBUMS1	CDICK	
15/03/11 09:53:17	PART	DFSSAM02	IMSBUMS1	CDICK	
15/03/11 09:53:06	PART	DFSSAM02	IMSBUMS1	CDICK	
15/03/11 09:52:54	PART	DFSSAM02	IMSBUMS1	CDICK	
15/03/11 09:52:43	PART	DFSSAM02	IMSBUMS1	CDICK	
15/03/11 09:52:31	PART	DFSSAM02	IMSBUMS1	CDICK	
15/03/11 09:52:19	PART	DFSSAM02	IMSBUMS1	CDICK	
15/03/11 09:52:08	PART	DFSSAM02	IMSBUMS1	CDICK	
15/03/11 09:51:56	PART	DFSSAM02	IMSBUMS1	CDICK	
15/03/11 09:51:45	PART	DFSSAM02	IMSBUMS1	CDICK	
15/03/11 09:51:33	PART	DFSSAM02	IMSBUMS1	CDICK	
15/03/11 09:51:22	PART	DFSSAM02	IMSBUMS1	CDICK	
15/03/11 09:51:10	PART	DFSSAM02	IMSBUMS1	CDICK	
15/03/11 09:50:59	PART	DFSSAM02	IMSBUMS1	CDICK	
15/03/11 09:50:47	PART	DFSSAM02	IMSBUMS1	CDICK	
15/03/11 09:50:36	PART	DFSSAM02	IMSBUMS1	CDICK	
15/03/11 09:50:24	PART	DFSSAM02	IMSBUMS1	CDICK	

Application Trace Facility (ATF)



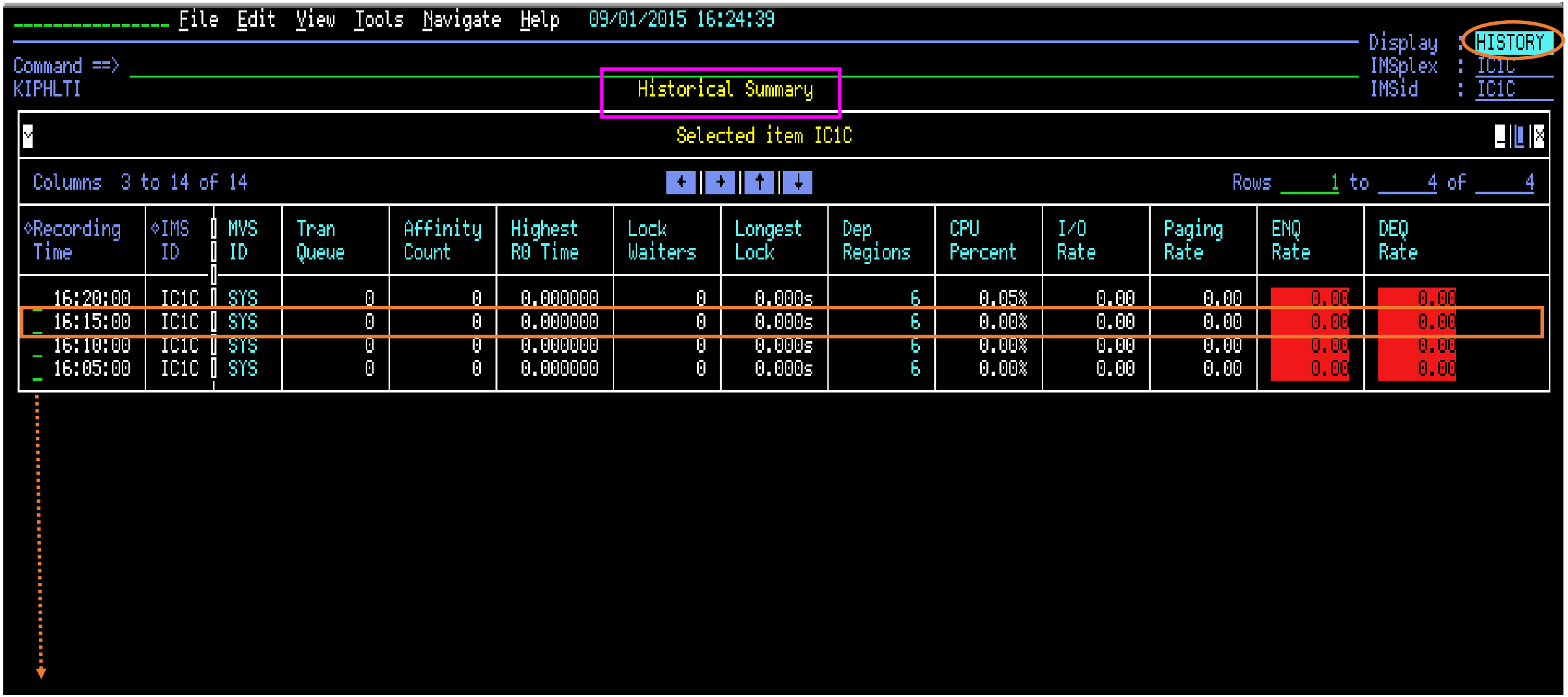
Application Trace Facility (ATF)



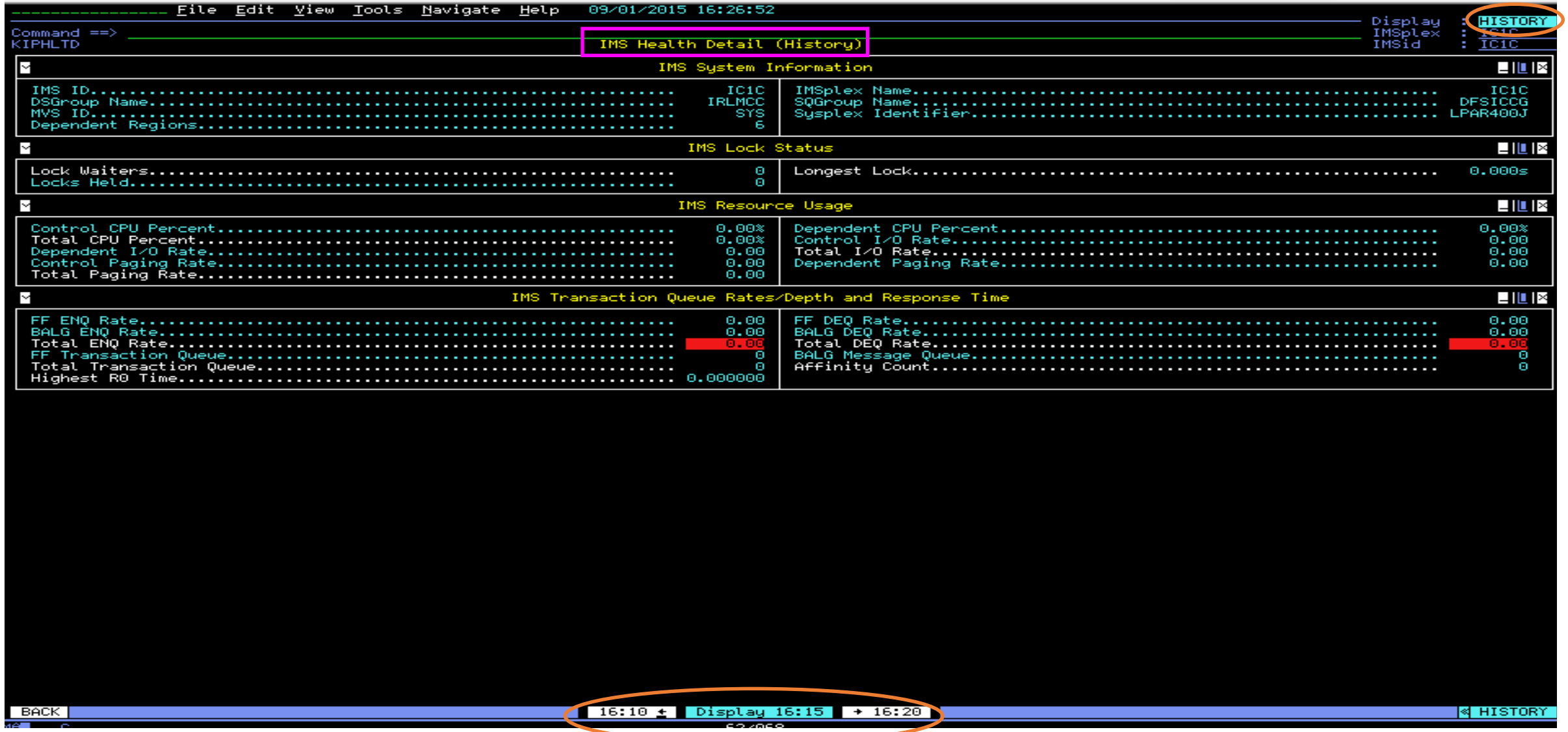
Near Term History (NTF)

Near Term History (NTH)

Near Term History (NTH)

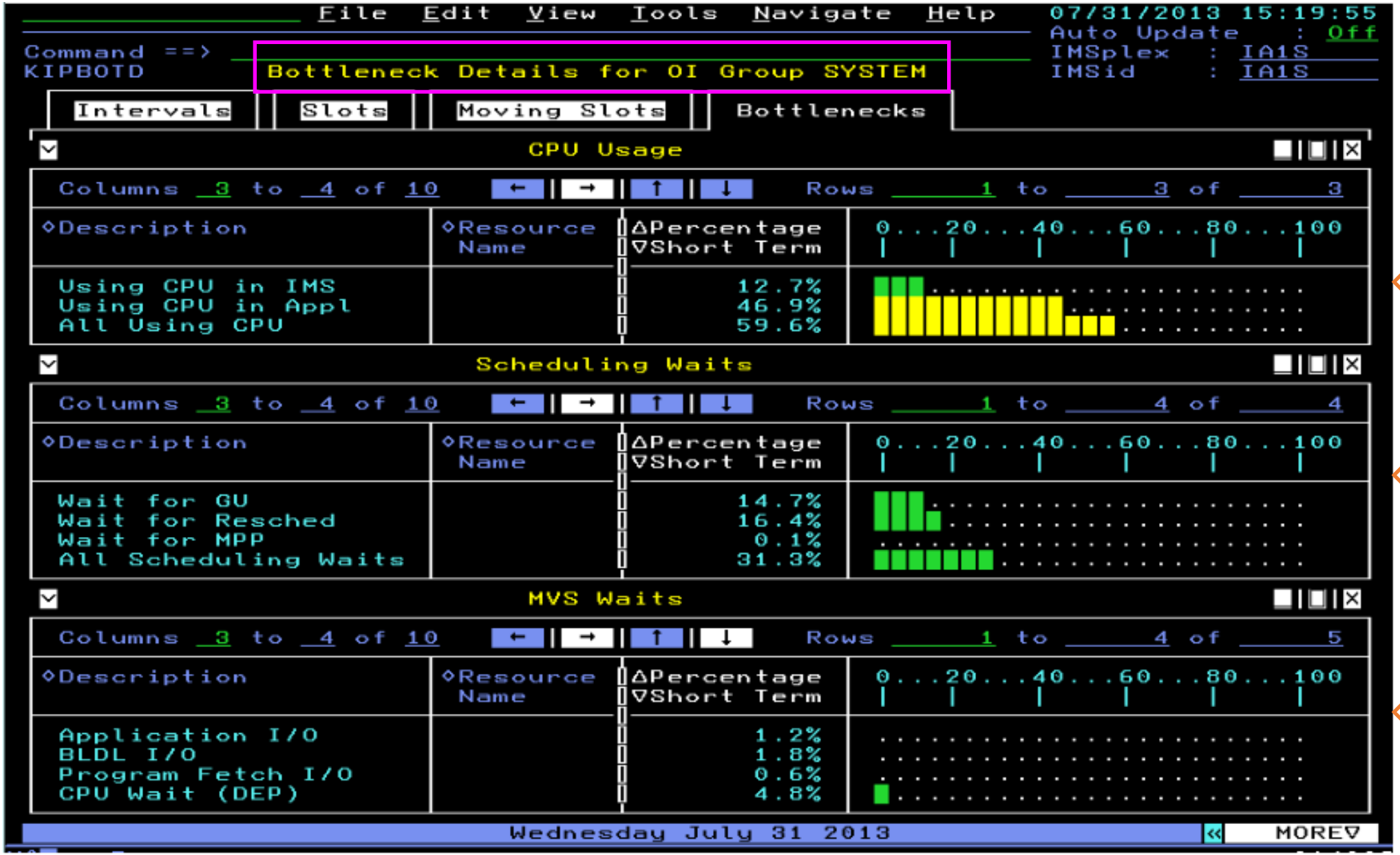


Near Term History (NTH)



Bottleck Analysis

Bottleneck Analysis



See where your transactions are having the largest percentage wait times

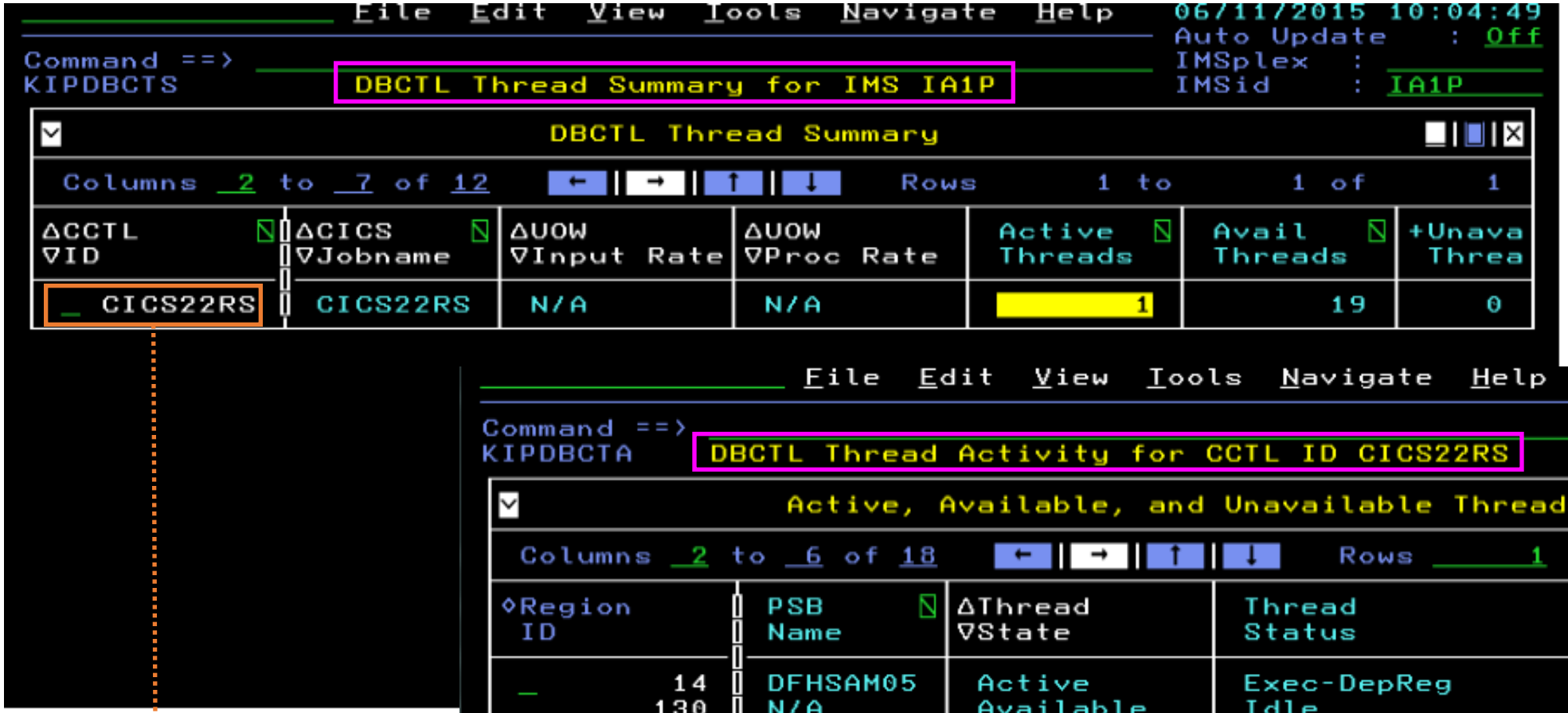
IMS Time vs. Application Time

Scheduling Wait Time

Waiting for I/O

DBCTL Thread Details and Wait Statistics

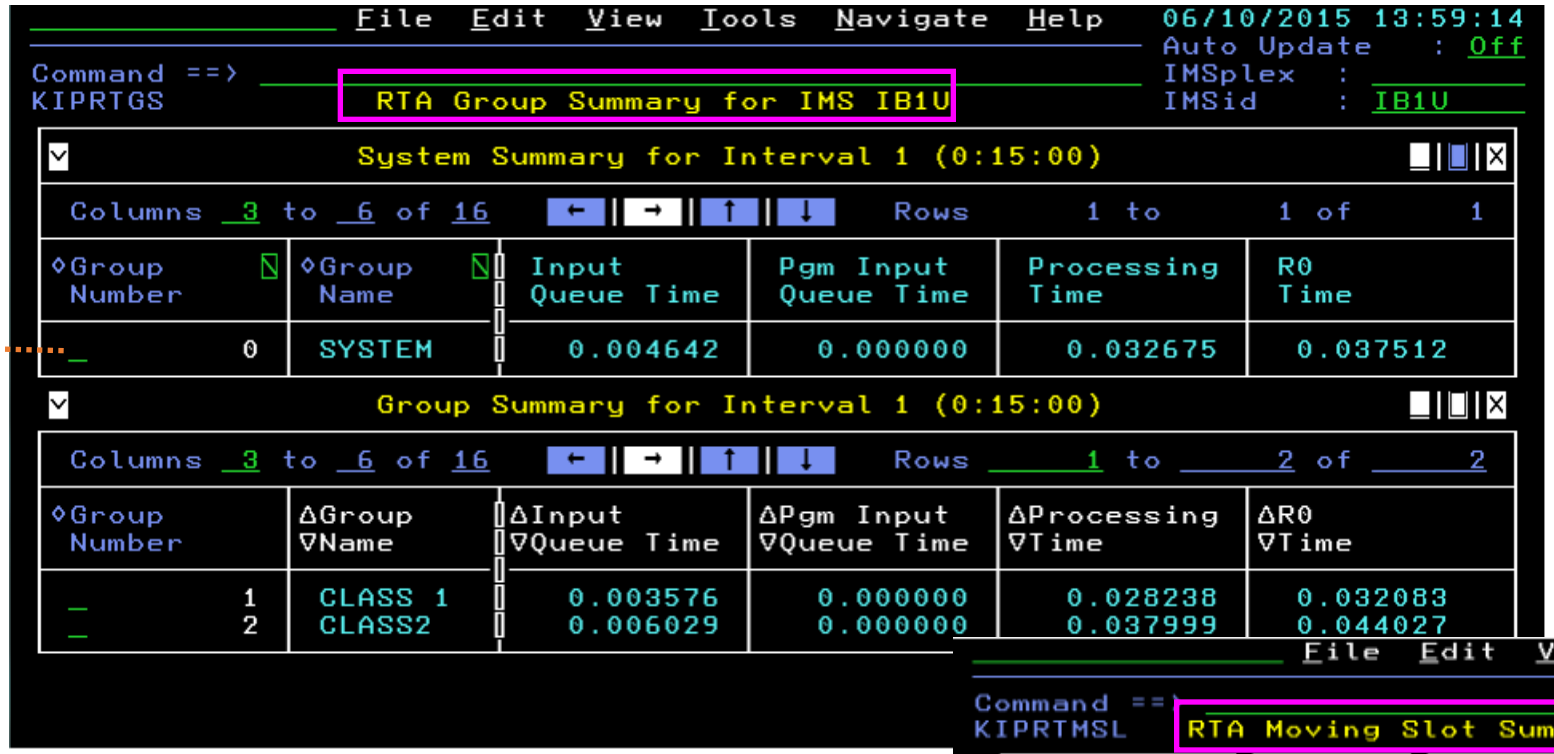
DBCTL Threads Details and Wait Statistics

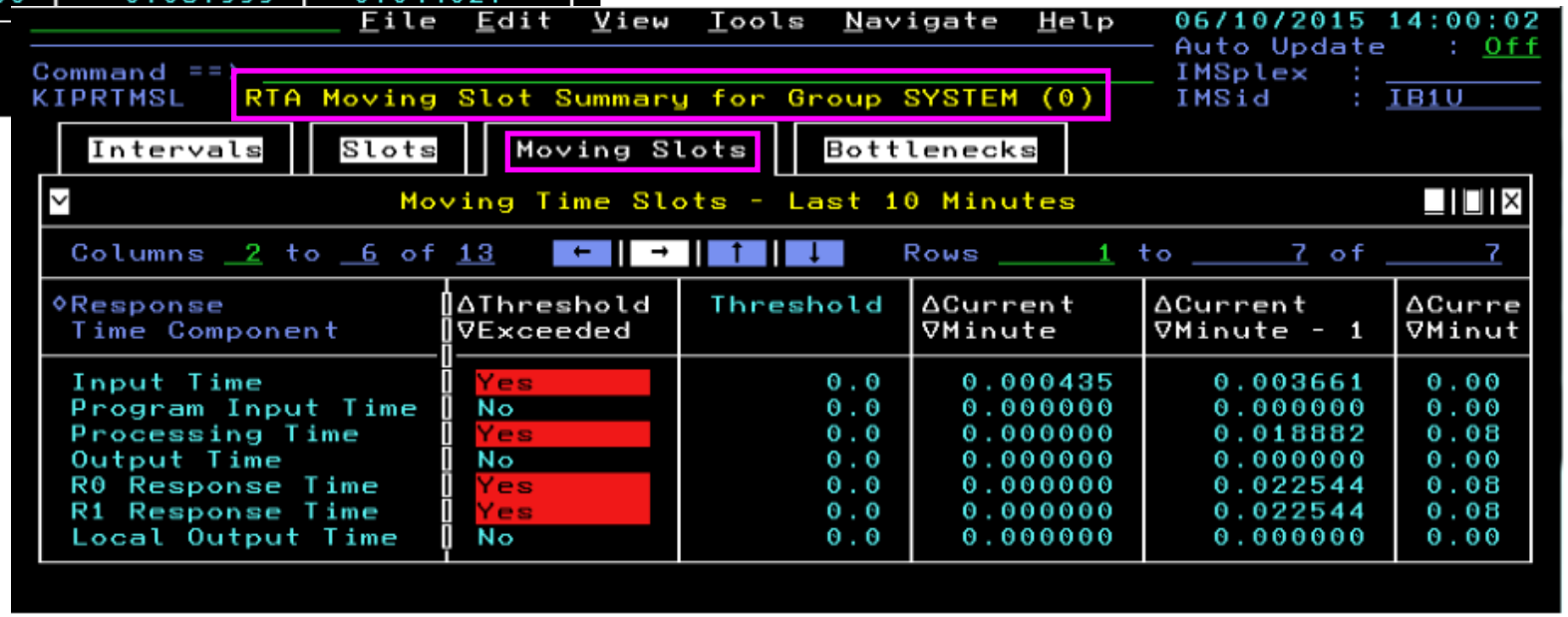


Drill in to view Thread Details and Wait Statistics plus System Services call details

Response Time Analysis (RTA)

Response Time Analysis (RTA)

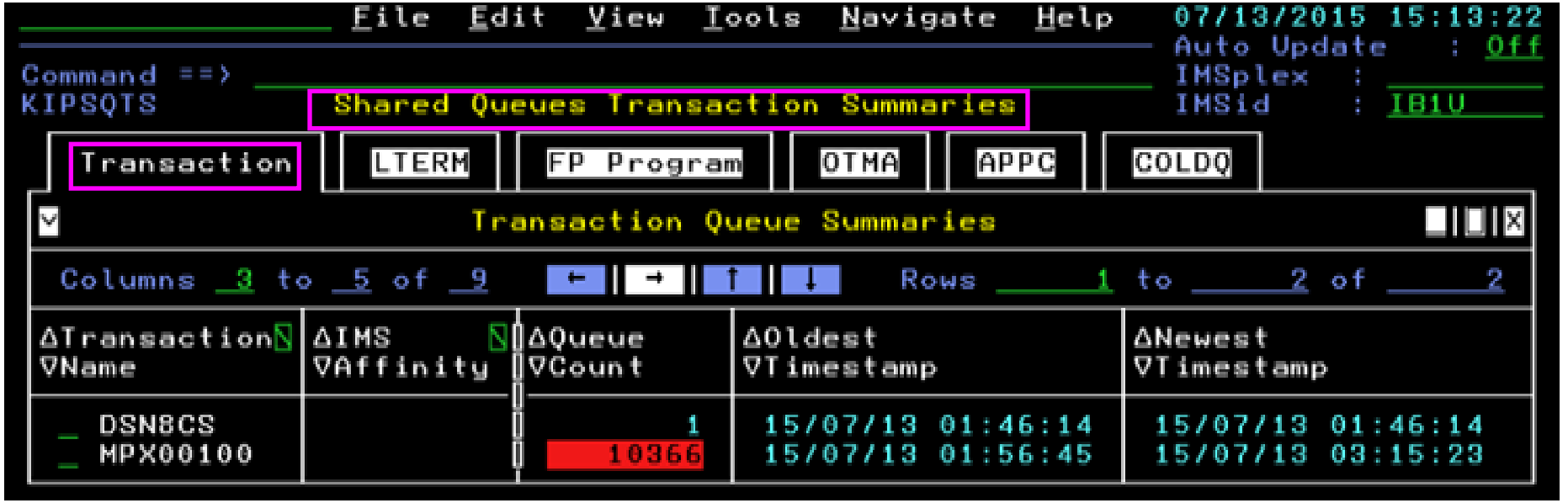




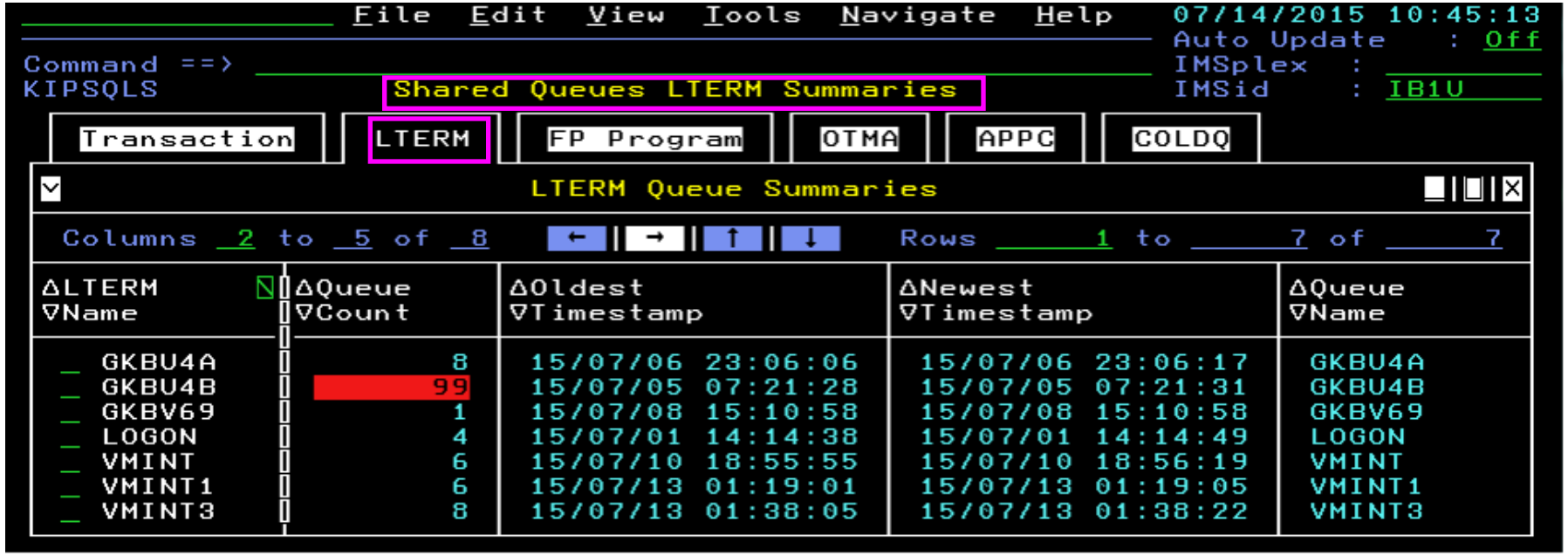
See when your Service Level Exceptions are not being met and drill in to understand where the time is being spent

IMS Shared Queues

IMS Shared Queues

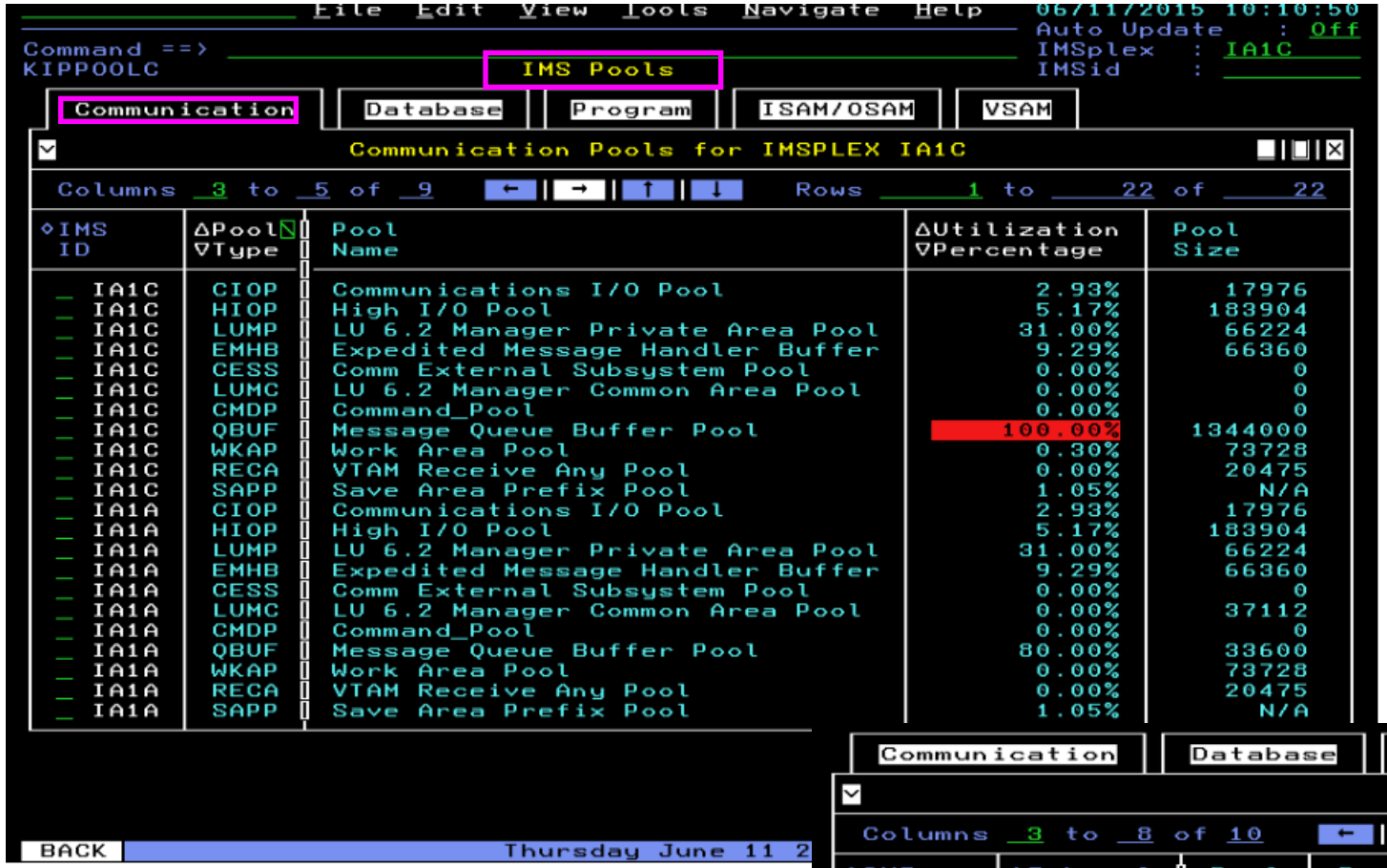


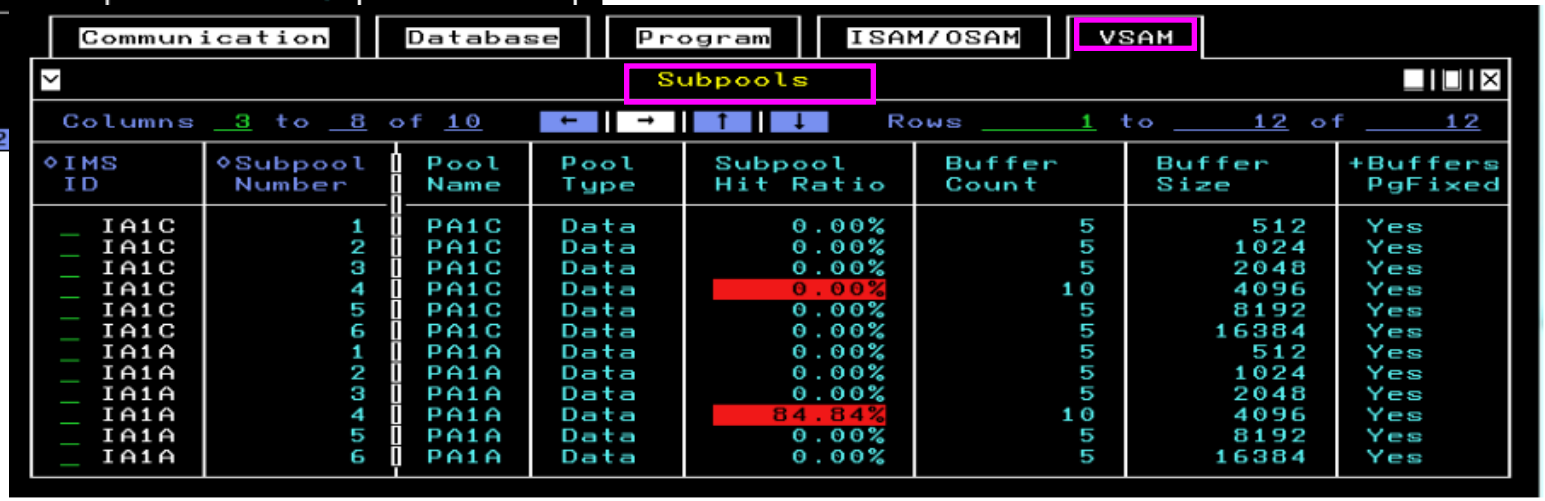
Identify high queue counts



IMS Storage Pool and Subpool Utilization and Exceptions

IMS Storage Pools and Subpool Utilization and Exceptions

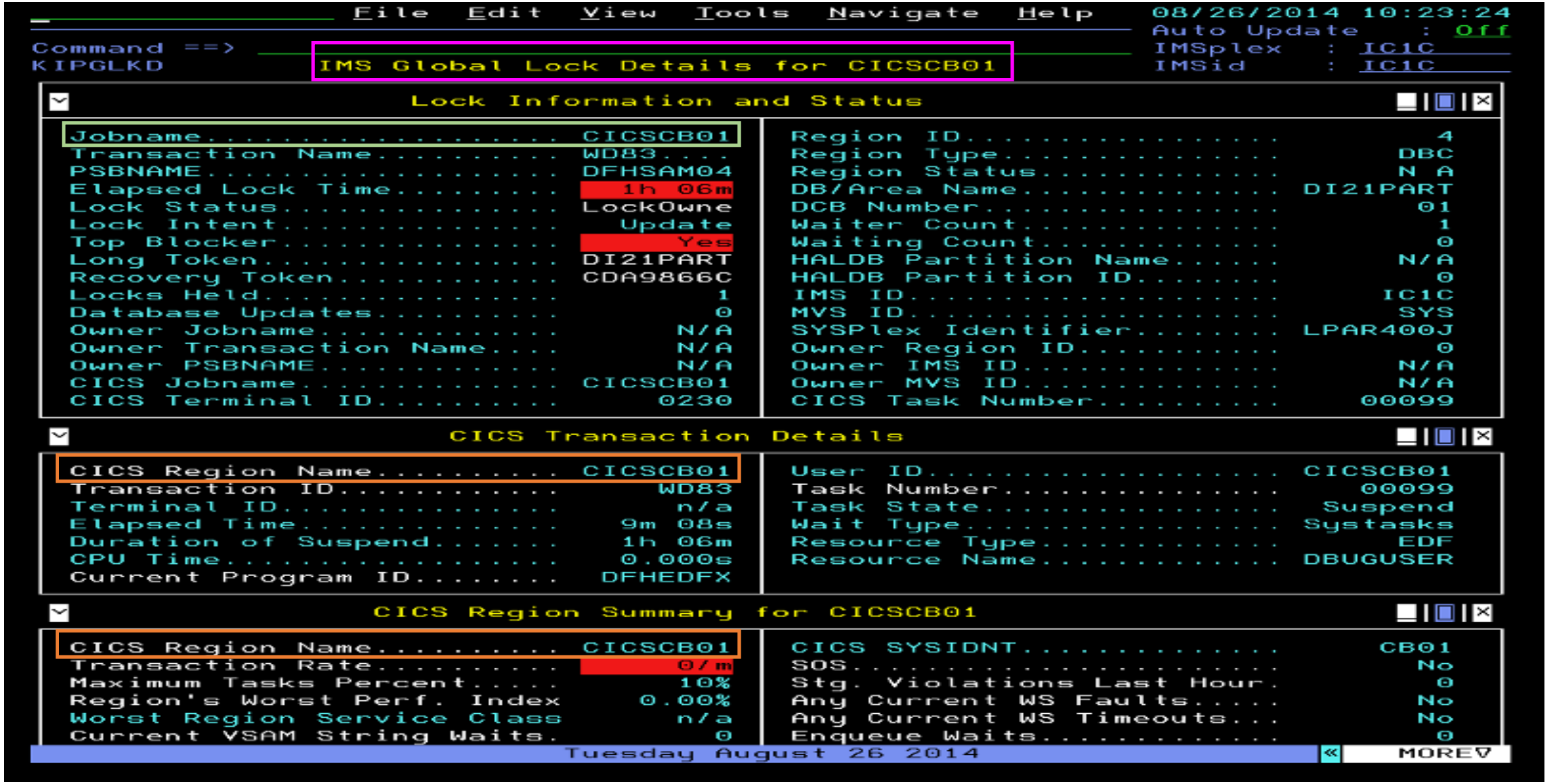




Track the Utilization of your IMS Storage Pools and Hit Ratios of your Subpools for maximum Performance

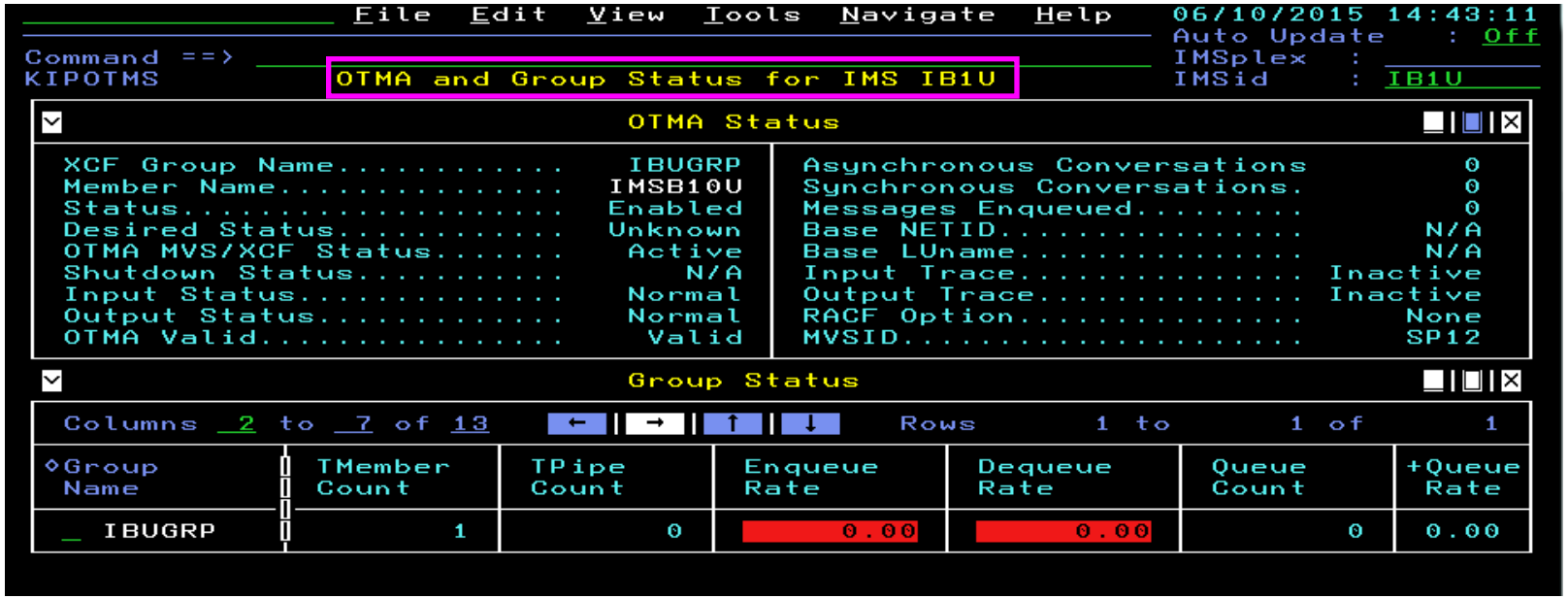
Global Lock Details and Embedded CICS Details

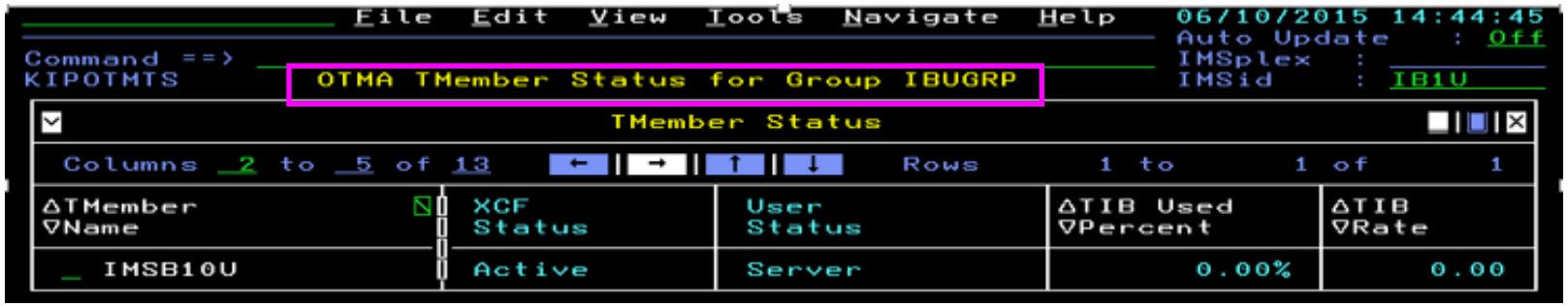
IMS Global Locks Details with Embedded CICS Details

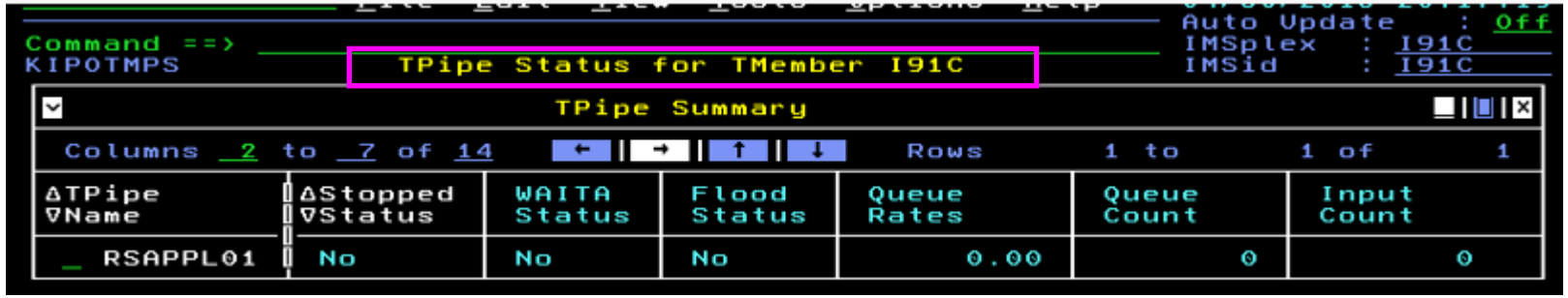


Status for OTMA, TMember and TPipe

Status for OTMA, TMember and TPipe

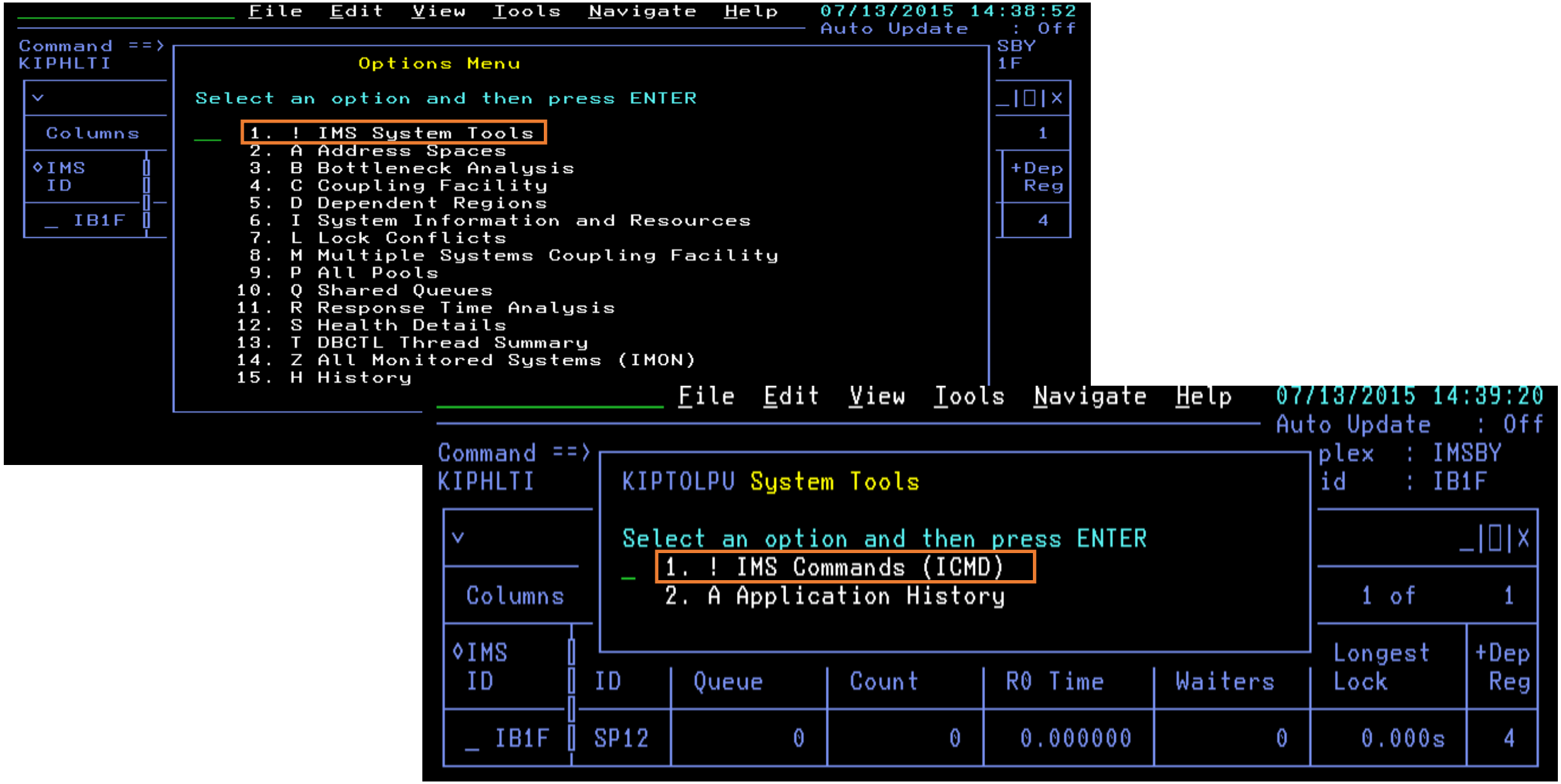






IMS Commands

IMS Command Type-1 and Type-2



IMS Command Type-1 (Output)

IMS Command Type-2 (Output)

Thank You !!!

https://www.youtube.com/watch?v=u1z4vkPWkLQ