Discovering OMEGAMON

Volume 3

OMEGAMON XE for IMS v510 Enhanced 3270 User Interface and Classic Interface Lab Exercises

IBM

An IBM Proof of Technology

Catalog Number

Contents

Overview

Lab Prerequisites

It is recommended that the participant has, at a minimum, previously taken the e3270 UI Introduction lab and preferably the e3270 UI z/OS lab as well. Alternately, if the participant has previous hands-on experience with the e3270 UI, then this lab will be of value to them.

OMEGAMON XE for IMS provides the ability to monitor IMS subsystems, both in a data sharing and non-data sharing configuration. The new, enhanced 3270(e3270) user interface, included with OMEGAMON XE for IMS v5.1, complements the existing Classic and Tivoli Enterprise Portal Server (TEPS) interfaces by providing the ability to monitor IMS systems from the new e3270 user interface. This series of exercises will illustrate several of the IMS monitoring features and functions available in this new e3270 interface as well as the Classic interface.

Individual labs exercises will cover the following topics:

- Monitoring the health of the IMS environment
- Monitoring critical IMS resources
- Identifying queued or stopped IMS resources
- How to view IMS DBCTL activity
- Optional exercise using field developed panel displays

Icons

The following symbols appear in this document at places where additional guidance is available.

Icon	Purpose	Explanation
	Important!	This symbol calls attention to a particular step or command. For example, it might alert you to type a command carefully because it is case sensitive.
	Information	This symbol indicates information that might not be necessary to complete a step, but is helpful or good to know.
	Trouble-shooting	This symbol indicates that you can fix a specific problem by completing the associated troubleshooting information.

Lab #1 Introduction to OMEGAMON IMS Enhanced 3270 UI

This lab will demonstrate how to utilize the OMEGAMON XE for IMS V5.1 enhanced 3270 user interface (e3270 UI). In this lab's exercises, the user will perform a series of exercises focused on the following:

- Monitoring the health of the IMS environment
- Monitoring critical IMS resources
- Identifying queued or stopped IMS resources

While OMEGAMON XE for IMS V5.1 offers other user interfaces, such as Classic, CUA, and Tivoli Enterprise Portal (TEP), this lab will focus on the new enhanced 3270 user interface.

1.1 Monitoring the health of the IMS environment

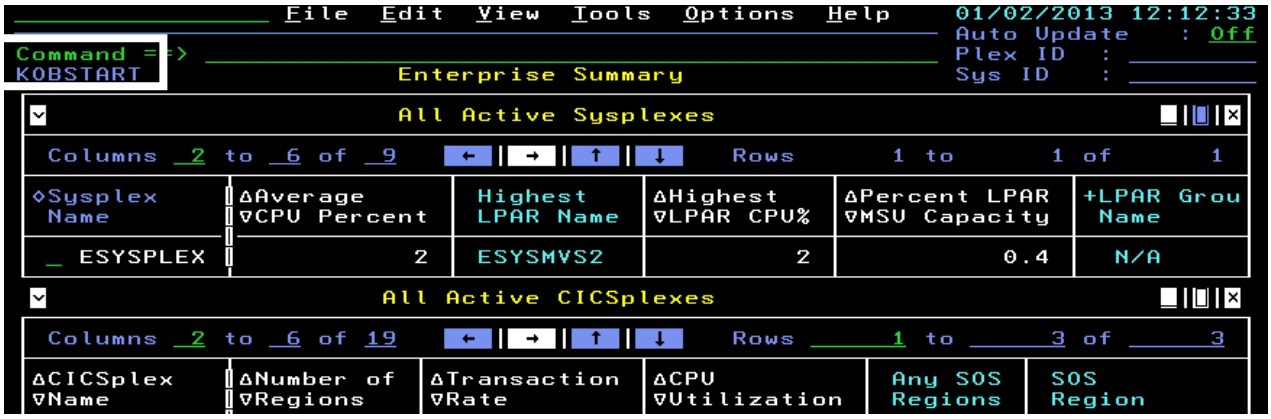
Exercise 1 introduces the e3270 interface for OMEGAMON XE for IMS. This exercise is performed from the default 'start' panel, KOBSTART. KOBSTART is an overview panel for all installed OMEGAMON products. The Monitored IMS Subsystems screen, is included on KOBSTART and provides the starting point to drill down into OMEGAMON XE for IMS detail displays.

Exercise 1 illustrates several of the detailed displays available in OMEGAMON XE for IMS.

Security Information!
Prior to starting these exercises, please see the instructor for user ID/password and logon instructions.

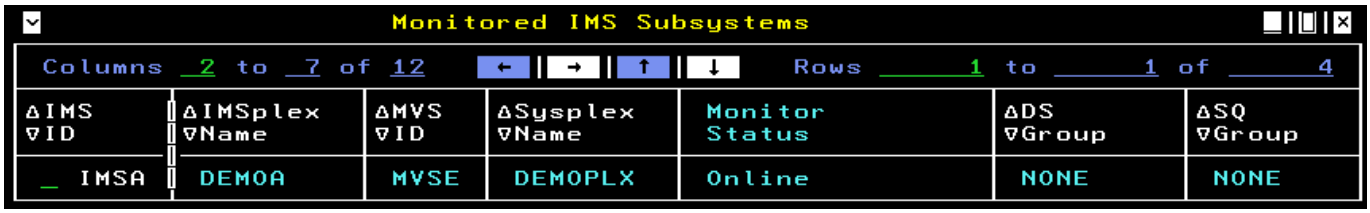
a) Sign on to the e3270 UI

You are now looking at the default initial screen, the Enterprise Summary, KOBSTART, which displays a high-level overview from each of the installed OMEGAMON products. Depending upon what OMEGAMON components are installed or active in a given environment, the specific contents of this panel may vary.



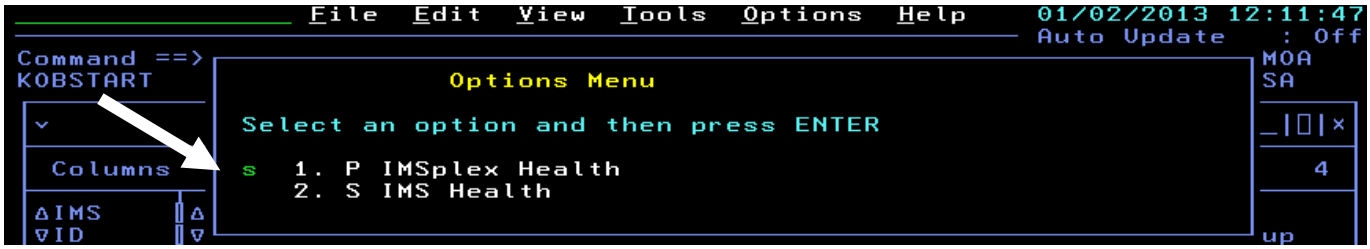
b) Locate OMEGAMON XE for IMS on KOBSTART

To see IMS information, depending again upon what OMEGAMON components and also on the screen resolution of your 3270 session, you may need to **Press F8** to scroll down the KOBSTART panel to see IMS information.



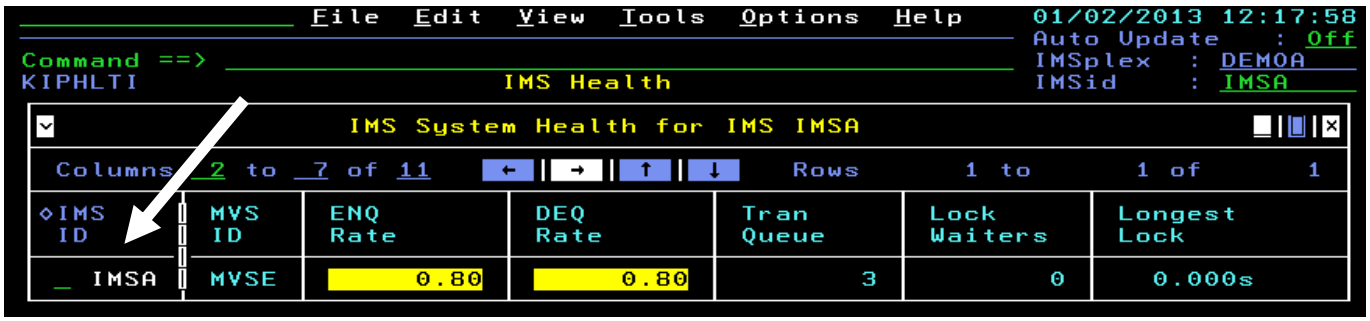
c) Review IMS health information

Position the cursor next to the IMS ID (in this example select IMSA), **Enter** /, and **Press Enter**.



You should see a popup with the option to drill down into either IMSplex health information or drill into IMS health information for a specific subsystem.

In this exercise we will focus on a specific IMS subsystem, IMSA. Therefore, **Enter S** and **Press Enter.**

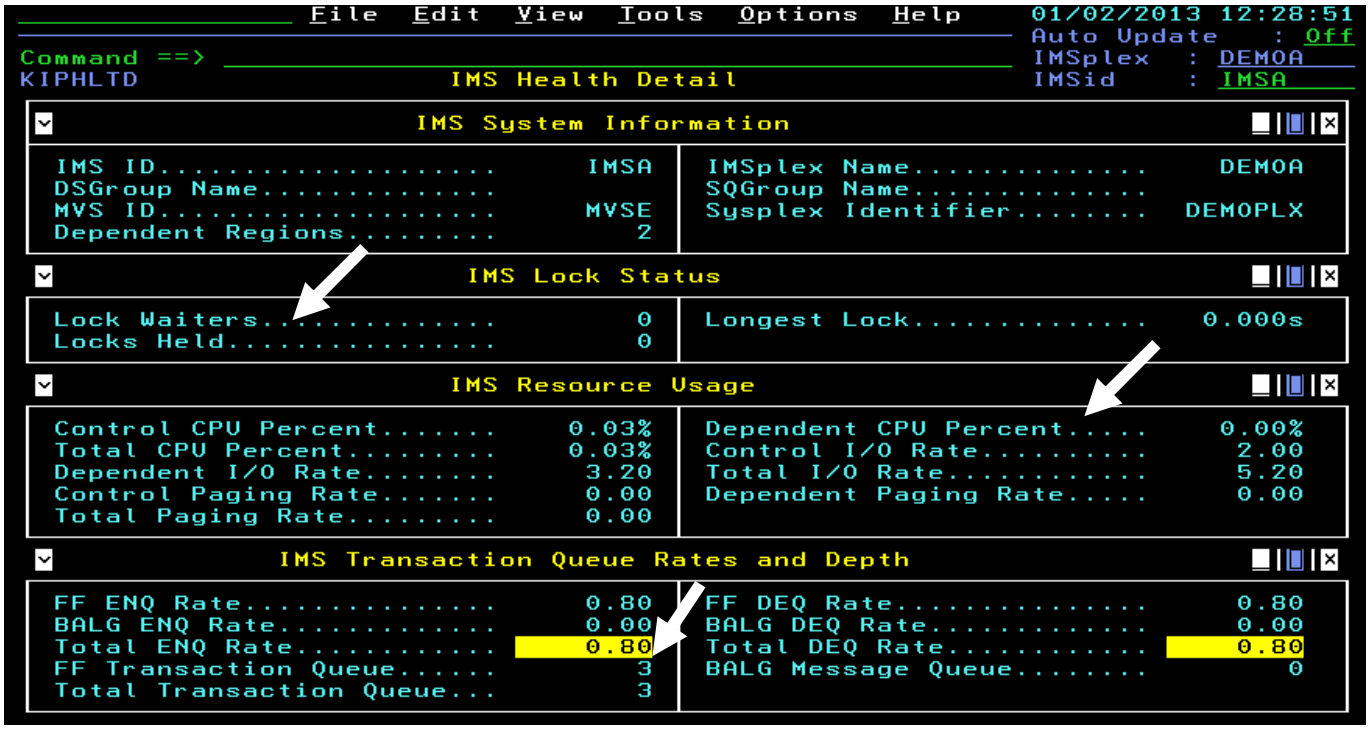


You are now looking at the IMS Health panel (KIPHLTI) for IMS subsystem IMSA. This panel shows some key performance metrics for the IMS system, such as the transaction enqueue and dequeue rate for the IMS system, number of transactions queued on the system, and number of IMS tasks waiting on locks. Depending upon the screen resolution of your 3270 session you may be able to scroll the screen to the right for more information using either F11 or the arrow button highlighted in white.

To see more information on the health of the IMS system, **position the cursor** next to the IMSID, **enter** / , and **Press Enter**.

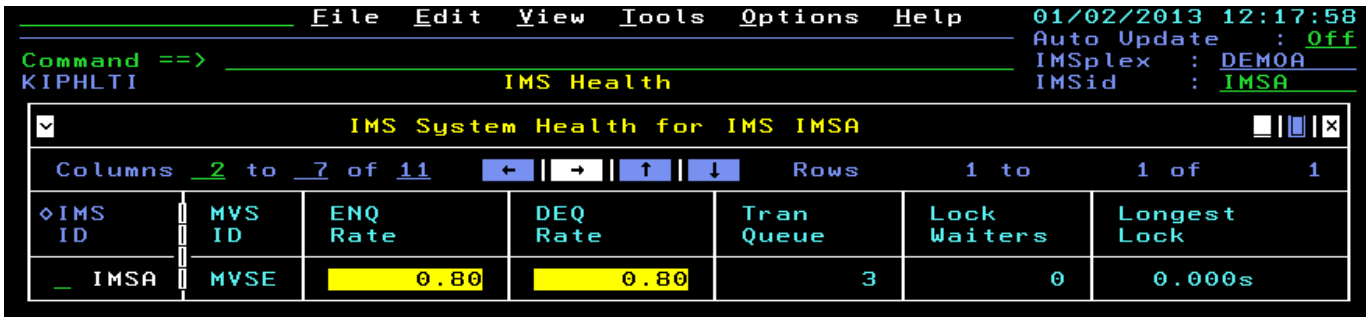
You should see an options popup menu with several different options to display various IMS resources.

Enter **S** for Health Details and Press Enter.



You are now looking at the **IMS Health** detail overview panel. This display shows information on transaction rates, transaction queue depth, IMS locking, and IMS CPU and I/O activity summarized for the IMS subsystem 9 (in this example IMSA). In the above example we see that there is a transaction queue depth of 3 transactions and that there are not currently any tasks waiting on IMS locks.

This exercise demonstrated how to drill in on a specific IMS subsystem. **Press F3** to return to the KIPHLTI panel.



This concludes Exercise 1 of the OMEGAMON IMS lab.

1.2 Monitoring critical IMS resources

Exercise 2 continues to explore the e3270 interface details. This exercise will explore how OMEGAMON for IMS monitors key IMS subsystem resources.

In this Exercise, the participants will view information for IMS address spaces, dependent regions, PSBs, transactions, and IMS locking.

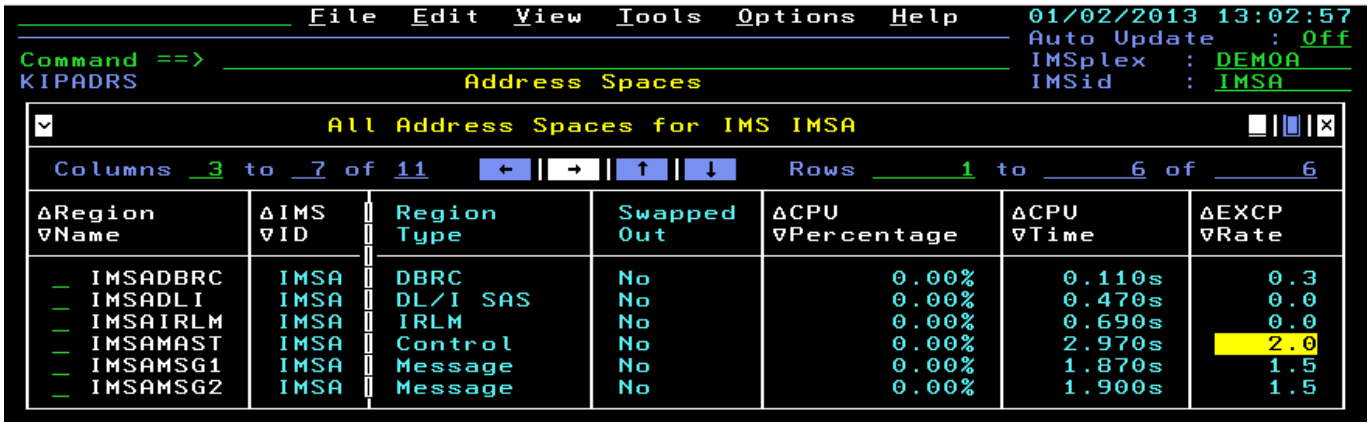
a) This assumes that you have finished Exercise 1 and you are currently on the KIPHLTI panel.

b) To begin the exercise, **position the cursor** next to the IMSID, **enter** / , and **Press Enter**.

You are again looking at the Options menu.

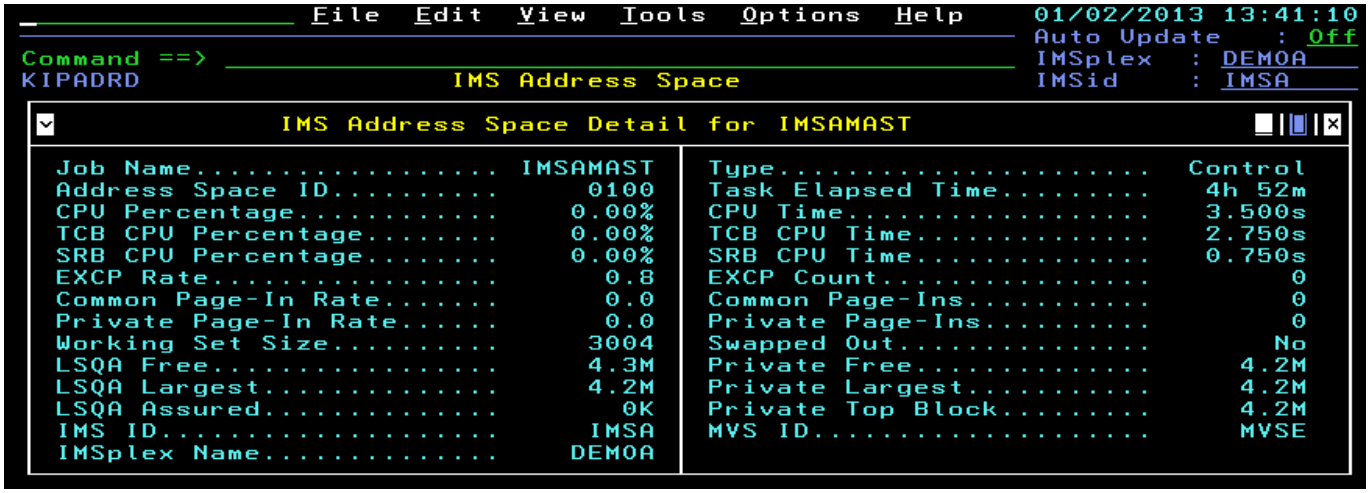
c) Display IMS address spaces

From the Options menu **position the cursor**, **Enter A** , and **Press Enter**.



You are now looking at the Address Space overview panel for IMS subsystem IMSA. This panel shows a summary of CPU usage and I/O activity for the address spaces that make up the IMS subsystem.

To see resource details for a specific address space (for example the IMS control region – IMSMAST), **position the cursor** by one of the regions, and **Press Enter.**

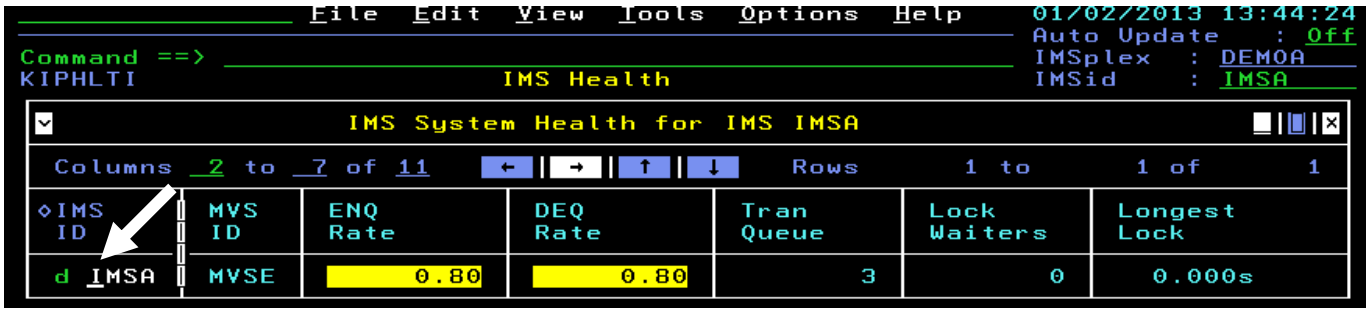


You are now looking at the IMS Address Space detail panel. This panel will show relevant resource usage for the address space, such as CPU usage, I/O rates, and working set size for the address space.

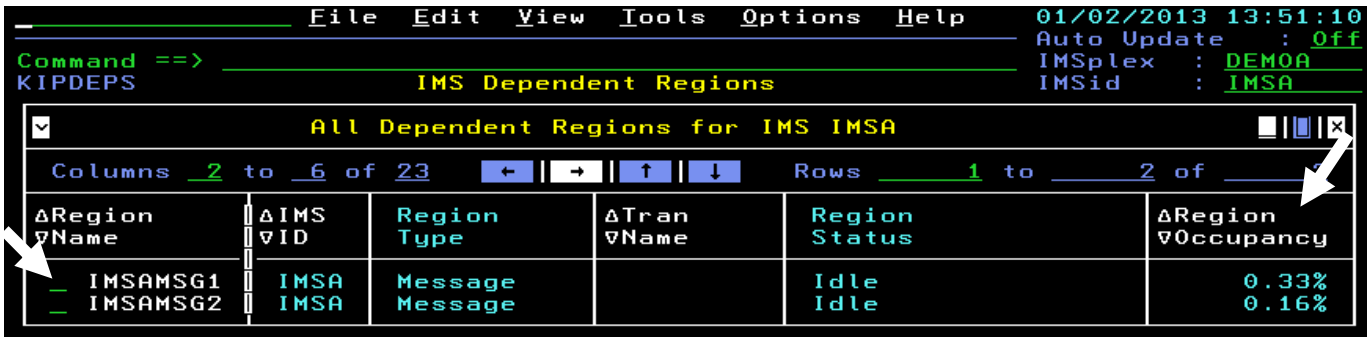
Press F3 and then **Press F3** again to return to the KIPHLTI screen.

d) Display IMS dependent region details

It is a common requirement to display IMS dependent region processing activity.

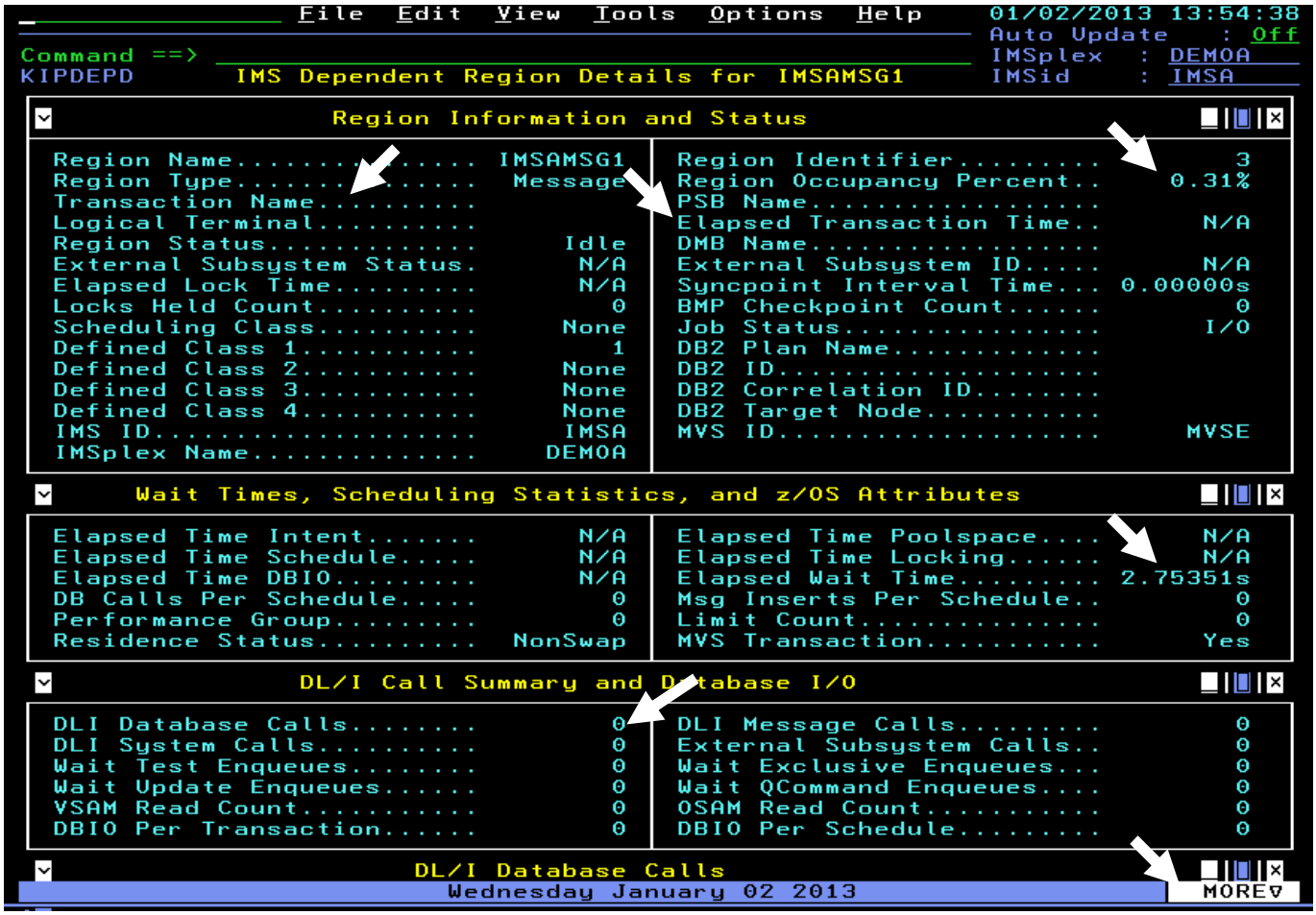


To see activity within dependent regions, from the KIPHLTI panel, **Position the cursor** next to the IMS ID, **Enter D** (for dependent regions), and **Press Enter**.



You are now looking at the IMS dependent region display. Each line represents an IMS dependent region in the IMS subsystem. Note key performance metrics, such as Region Occupancy, that is calculated for each region.

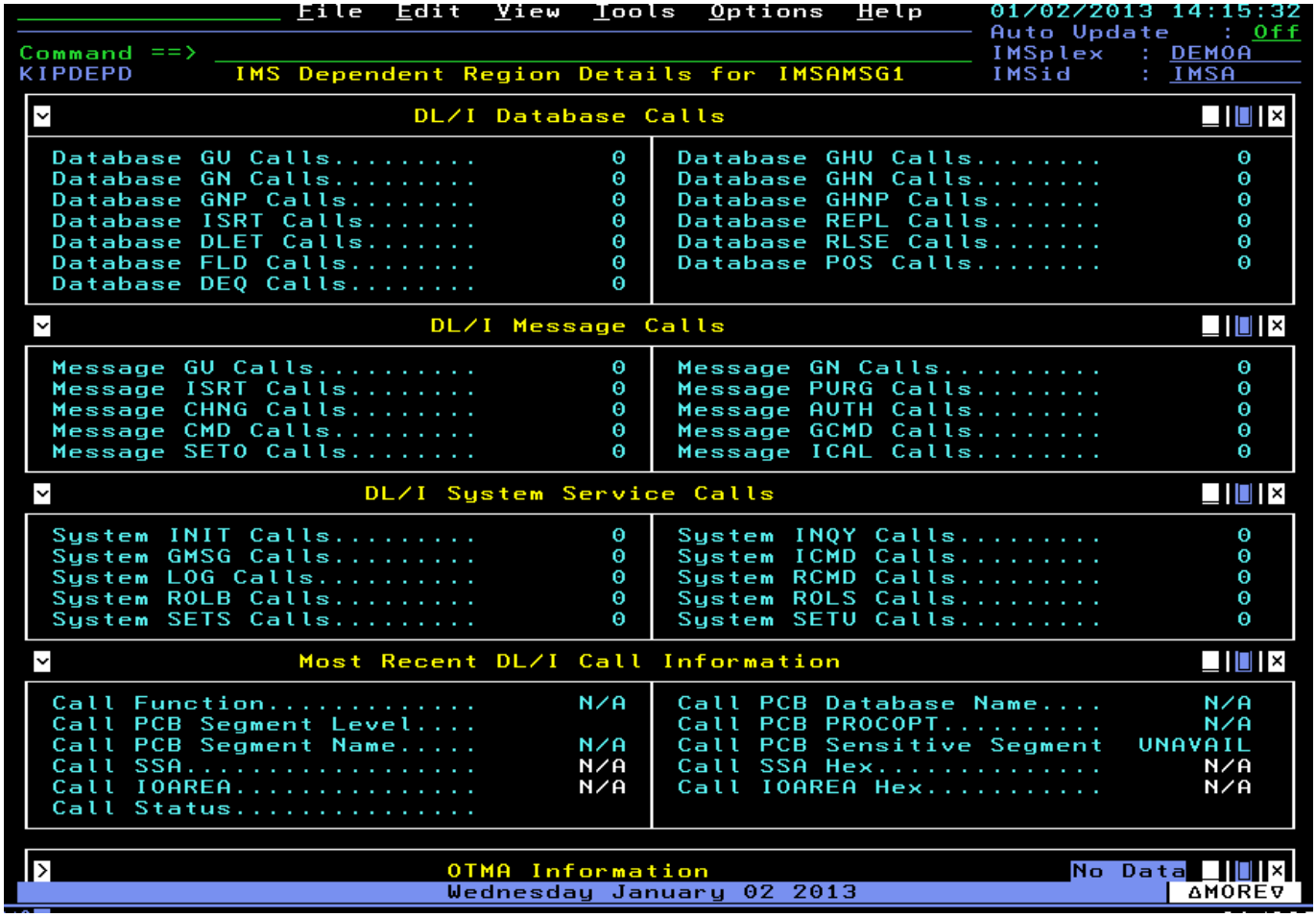
To see details for a dependent region, **position the cursor** by a region name and **Press Enter.**



You are now looking at the dependent region details panel for a specific IMS dependent region. For this panel you can see transactions flowing through the IMS region. If a transaction is active in the region, you can see details such as the transaction name and PSB being executed.

Press Enter a few times, and you may see some of the numbers increment as transactions flow through the IMS region.

Press F8 to see more information on the number and type of DL/I calls being executed by an application that is currently in the region.



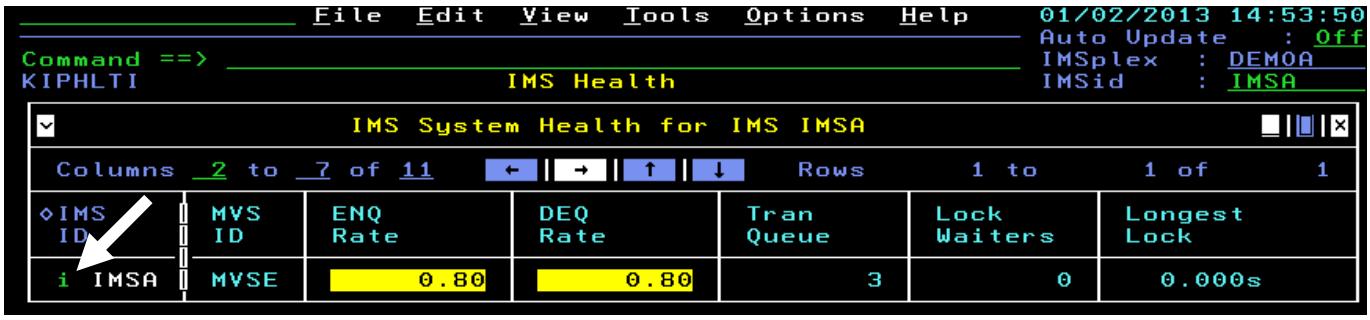
This panel will show call counts by type for an application that is currently executing within the region.

Press F3 and then **Press F3** again to return to the KIPHLTI panel.

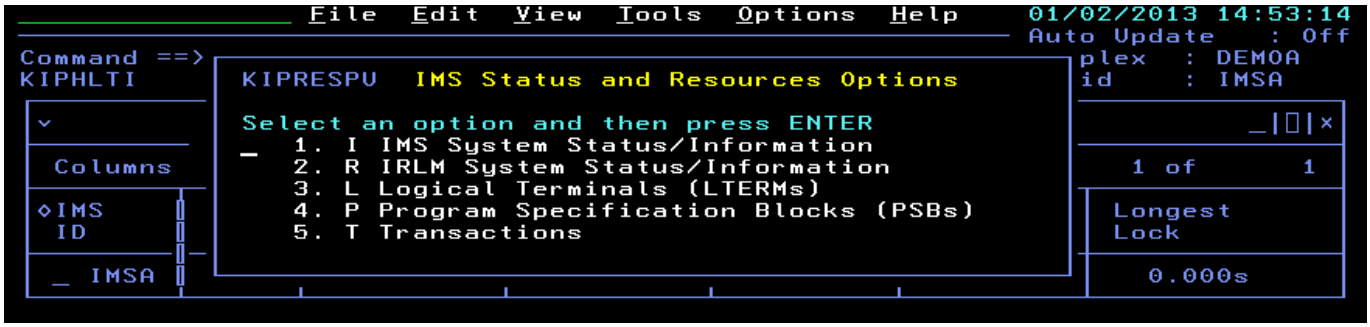
1.3 View IMS System Information and Resources

a) Display IMS status and resources

From the KIPHLTI panel you can drill down to display various IMS resources and resource status.



To see activity within dependent regions, from the KIPHLTI panel, **Position the cursor** next to the IMS ID, **Enter I** (for System Information and resources) and **Press Enter**.



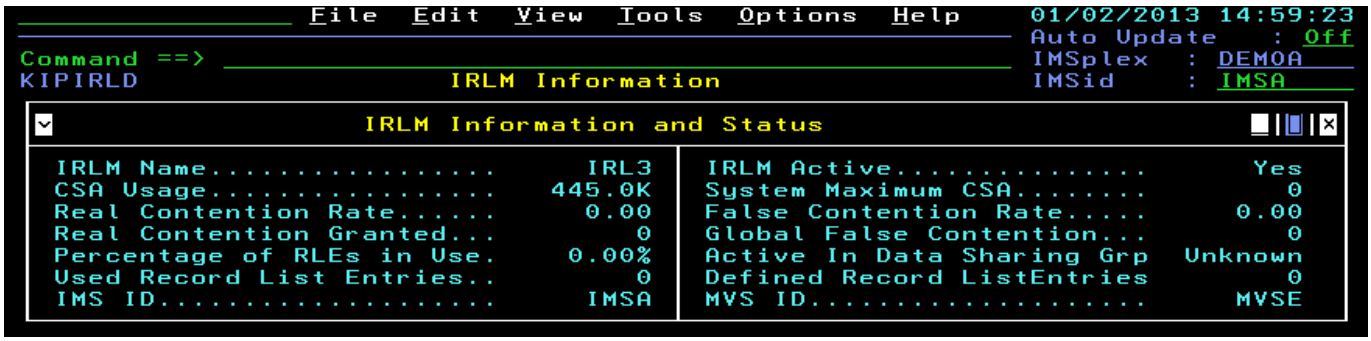
You will be presented with a popup options panel.

Enter I for IMS System Status/Information, and **Press Enter**.

You are now looking at the IMS System Information panel (KIPIMSD). This panel shows the IMS ID and version, number of MPPs and BMPs active, and transaction enqueue and dequeue rates.

b) Display IRLM information

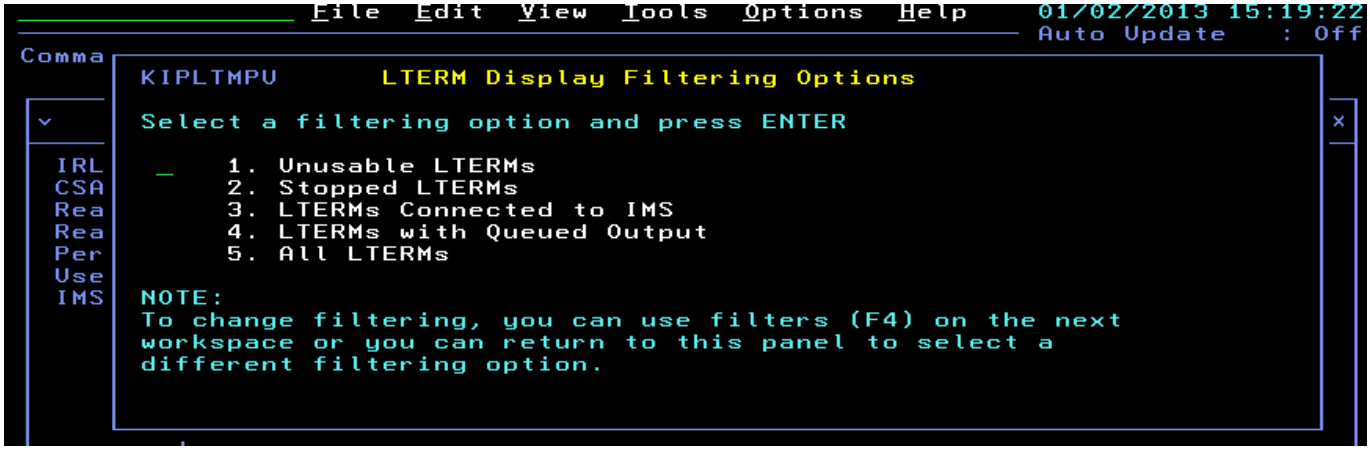
Press F3 to return to the popup options panel. **Enter R** for IRLM Status/Information and **Press Enter**.



You are now looking at the IRLM resource display. This panel shows CSA usage for IRLM, and also shows Real Contention and False Contention rates for IRLM locking activity.

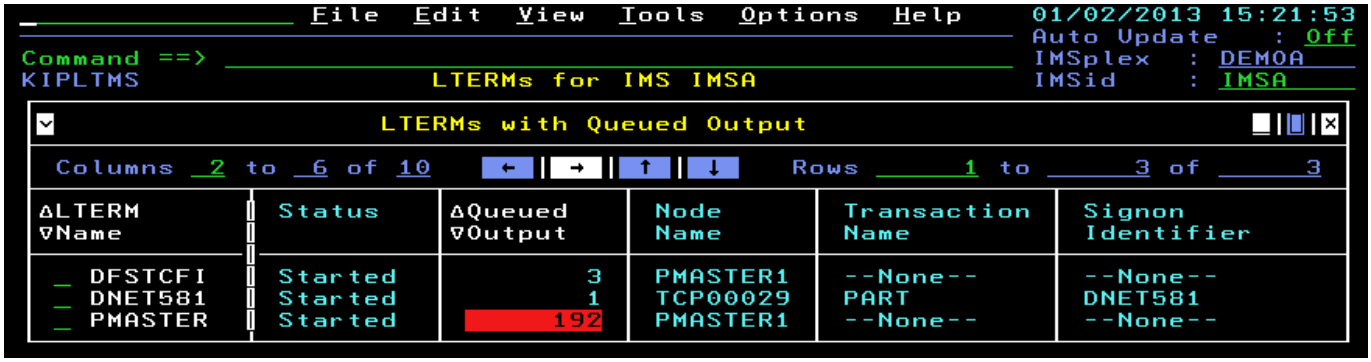
c) Displaying LTERM, Transaction, and PSB information

Press F3 to return to the popup options panel. **Enter L** for LTERM Information and **Press Enter**.



You are looking at the LTERM display popup. From here you can display all the LTERMs in the IMS subsystem, or look at specific LTERMs, such LTERMs that have queued input or are stopped.

To see LTERMs with queued input, **Enter 4** and **Press Enter**.



You are now looking at a panel that shows LTERMs with queued output.

Press F3, **Press F3** again, and then **Press F3** again to return to the KIPHLTI panel.

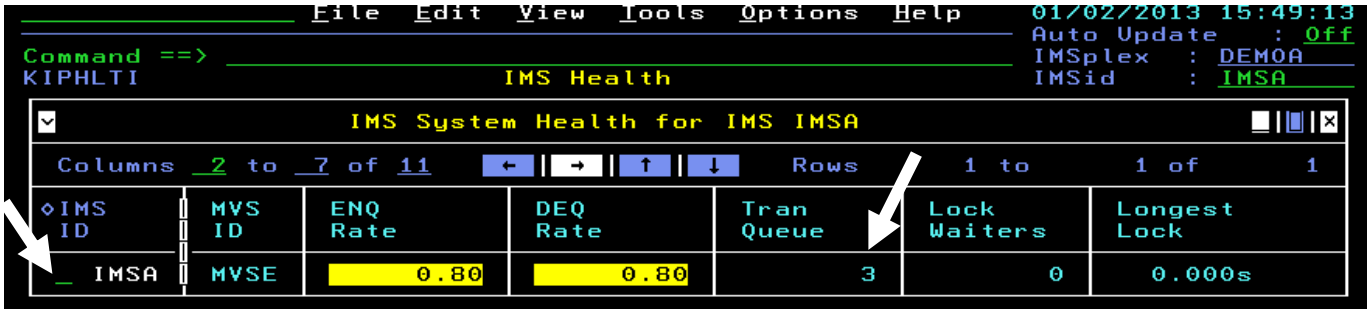
From here you can do the drill down again to display IMS transactions and PSBs. You will do this in the next Exercise scenario. This brings us to the conclusion of the second section.

1.4 Analysis of queued transactions

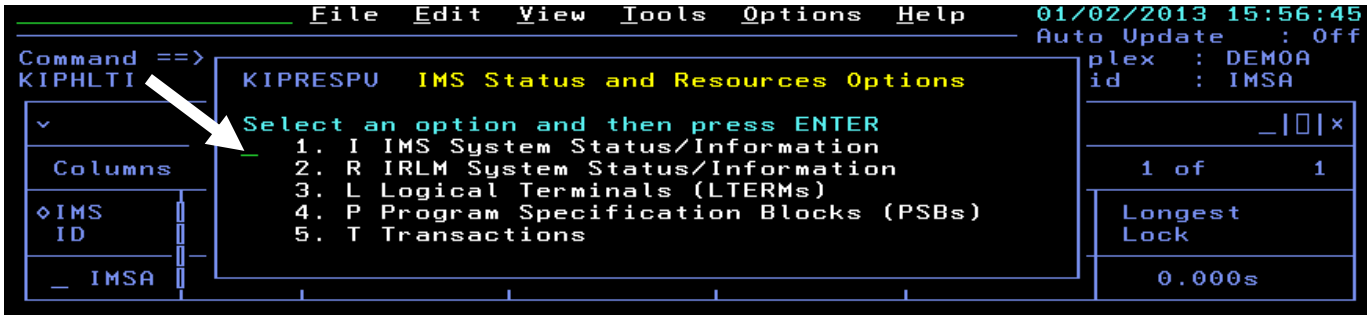
Exercise 3 continues to explore the e3270 interface details. This exercise will explore how OMEGAMON for IMS allows the user to identify, display and analyze queued transactions.

This lab section assumes that you have completed Exercises 1 and 2 and are logged on to the tool. You should be at the KIPHLTI panel.

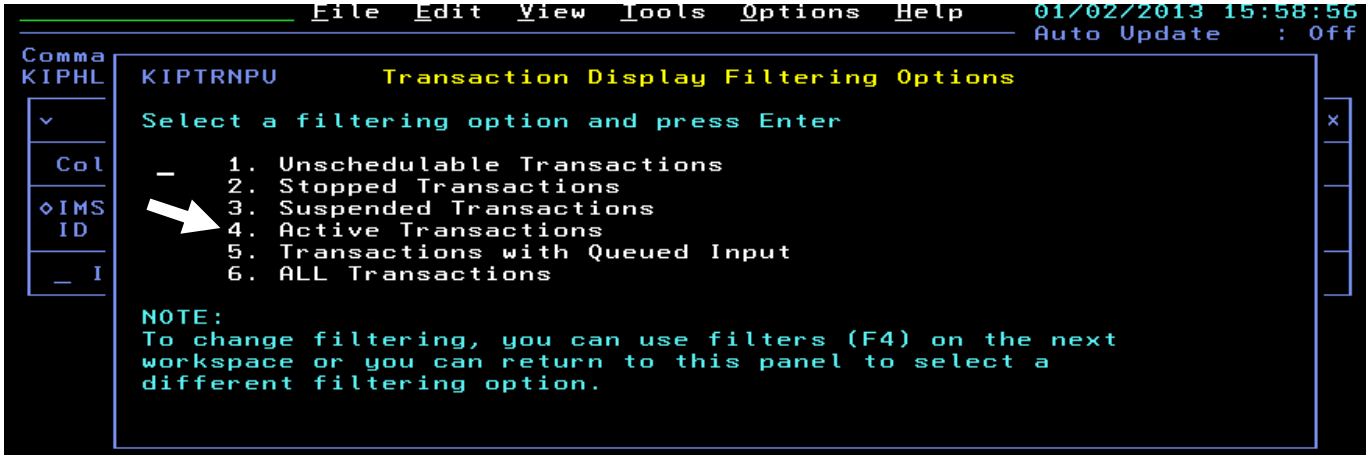
The KIPHLTI panel shows key IMS performance metrics. One of the metrics of interest is the number of transactions queued in the IMS system. In the example below we see 3 transactions queued in the IMS subsystem.



To investigate and gather more information about what transactions are queued, **position the cursor** by the IMSID, **Enter I** and **Press Enter**.

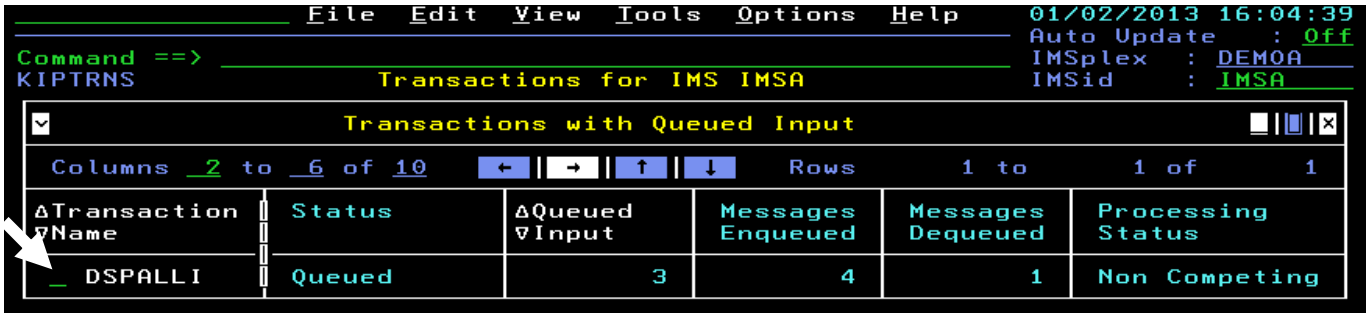


You are now looking at the options popup. To see Transactions, **Enter T** and **Press Enter**.



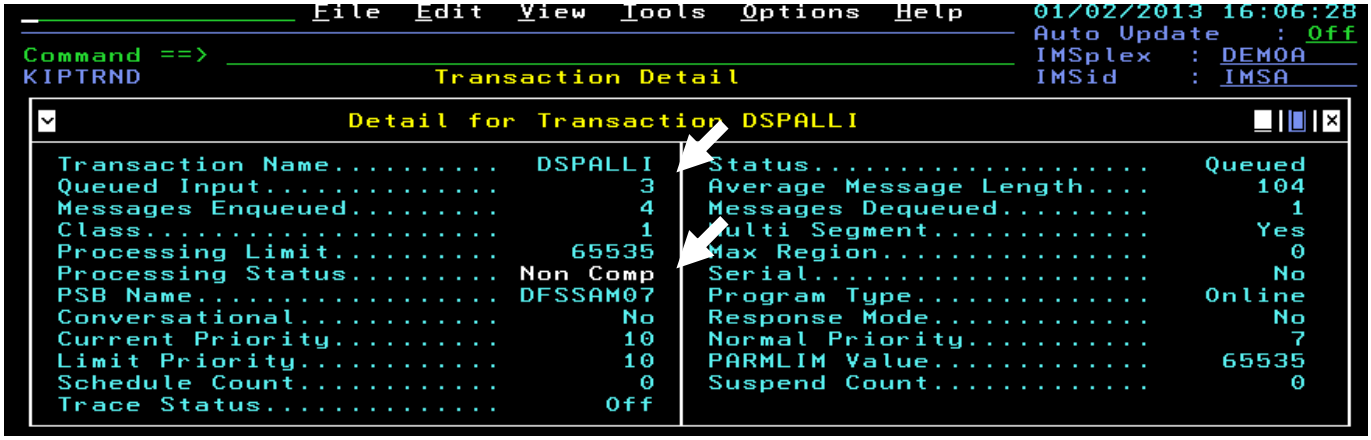
From this popup you have several options to display transactions, including stopped transactions, active transactions, and queued transactions.

In this scenario select the Transactions with queued input option. **Enter 5** and **Press Enter**.



Here you see what transaction is queued, and the queue depth for that transaction.

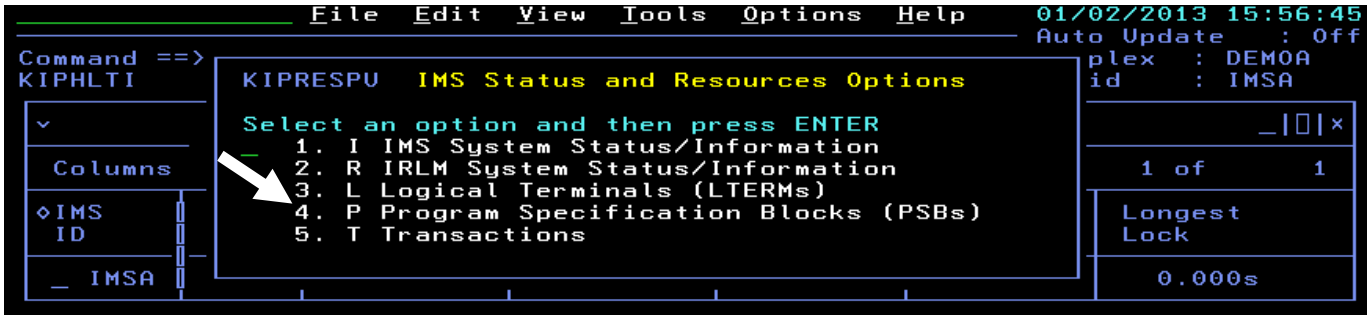
For more detail on the transaction, **position the cursor** by the transaction and **Press Enter.**



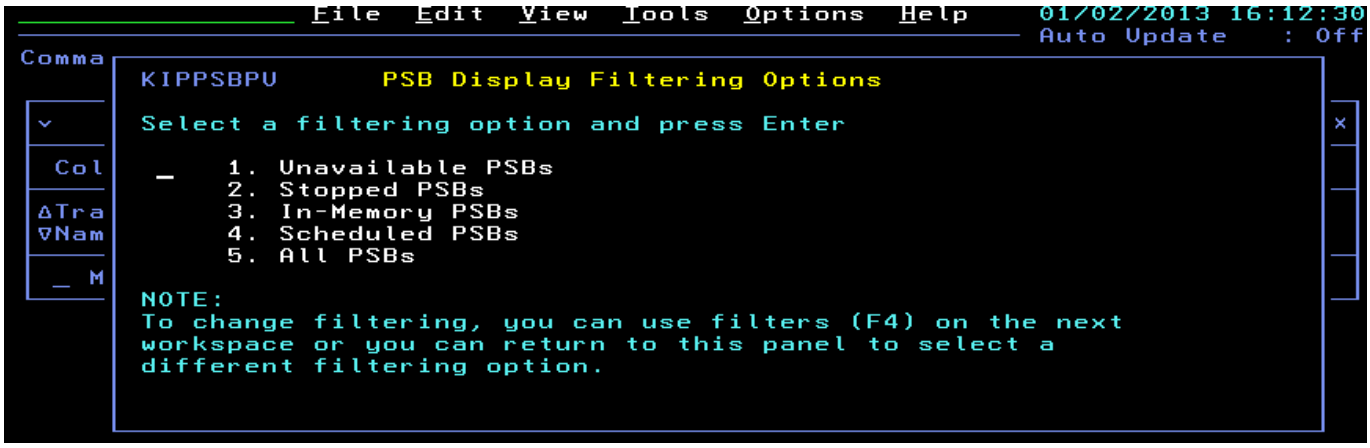
You now see the detail for the transaction, including transaction queue depth, and the PSB name associated with the transaction. Note the name of the PSB for this transaction.

Analyze the program that correlates to the stopped transaction

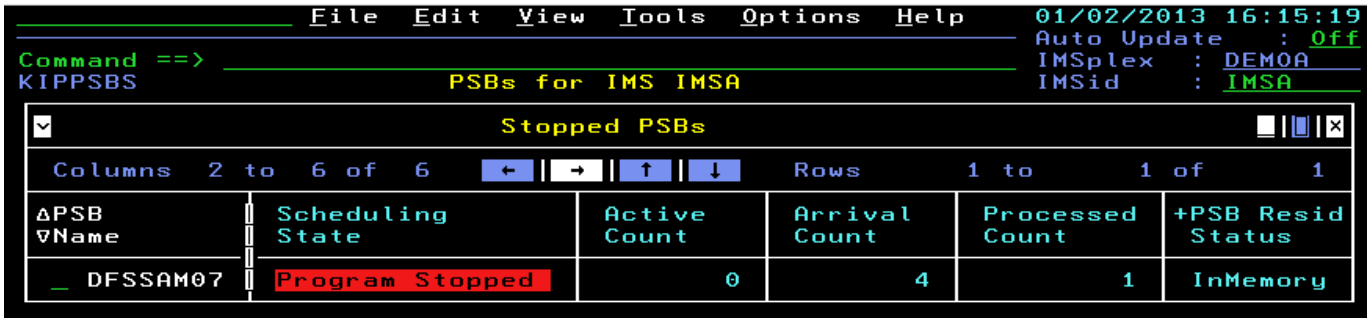
Press F3, **Press F3** again, and then **Press F3** again to return to the resource popup.



From the resource popup **Enter P** for PSBs and **Press Enter**.

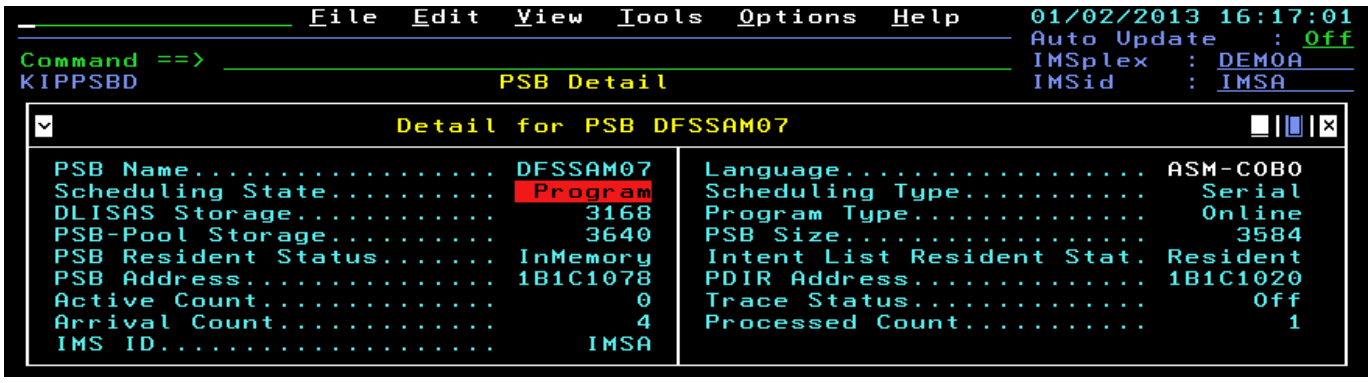


You now are looking at the PSB display popup. To see if any PSBs are stopped (thereby potentially resulting in transactions being queued), **Enter 2** and **Press Enter**.



You are now looking at the PSB that is stopped.

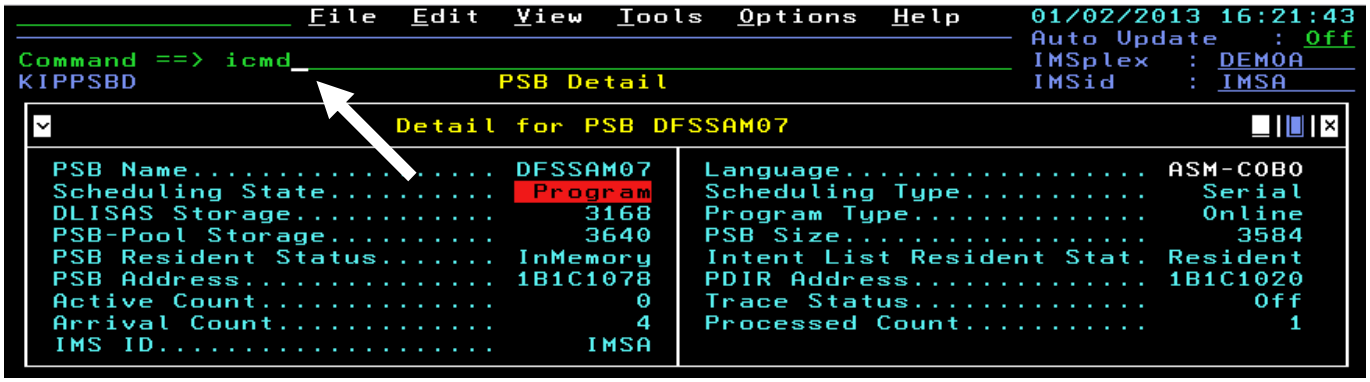
For more detail on the PSB, **position the cursor** by the PSB and **Press Enter.**



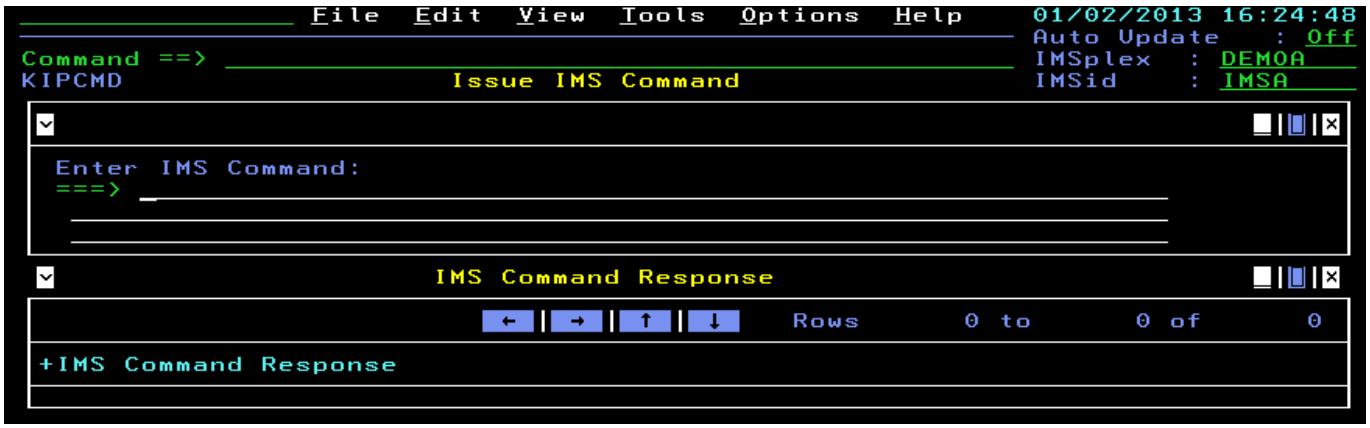
You are now looking at the details for the PSB.

Issuing IMS commands from OMEGAMON IMS

OMEGAMON IMS has the ability to issue commands to IMS. These commands may be issued directly from the enhanced 3270 interface.



To go to the IMS command interface, **position the cursor** on the command line, **Enter ICMD** and **Press Enter.**



You are now looking at the IMS Command panel (KIPCMD). From here you can enter IMS commands to the IMS subsystem. From here you could enter the appropriate commands to start the PSB that has been stopped.

NOTE - The command option is not enabled on this system due to security reasons.

To finish this portion of the Lab, **Press F3** multiple times until you have returned to the KOBSTART main panel.

You have now completed Exercise 3 of the OMEGAMON IMS module.

1.5 How to View DBCTL Activity

Exercise 4 continues to explore the e3270 interface details. One of the powerful features of the e3270 interface is that information from all of the relevant OMEGAMON monitoring tools is integrated within a single easy to use 3270 user interface.

This exercise will explore how to navigate within OMEGAMON to see IMS DBCTL activity.

OMEGAMON provides information on IMS DBCTL status and processing. In the enhanced 3270 user interface this information is technically part of OMEGAMON CICS. However, because the e3270 is an integrated interface, it is easy to go from OMEGAMON IMS panels to the relevant DBCTL displays.

a) This exercise section assumes that you have completed Exercise 1, 2, and 3 and are logged on to the tool. You should be at the KOBSTART panel.

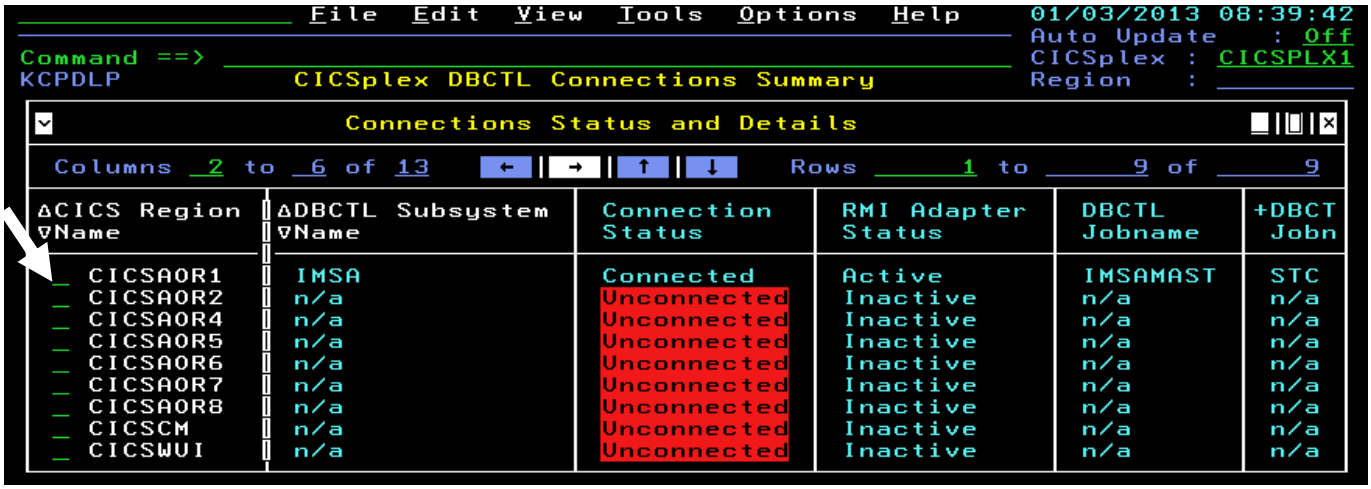
b) Drill down to see DBCTL connections

Press F7 to scroll the KOBSTART panel up until you see the section entitled **"All Active CICSplexes".**

Position the cursor by CICSplex Name CICSPLX1**, enter** / and **Press Enter.**

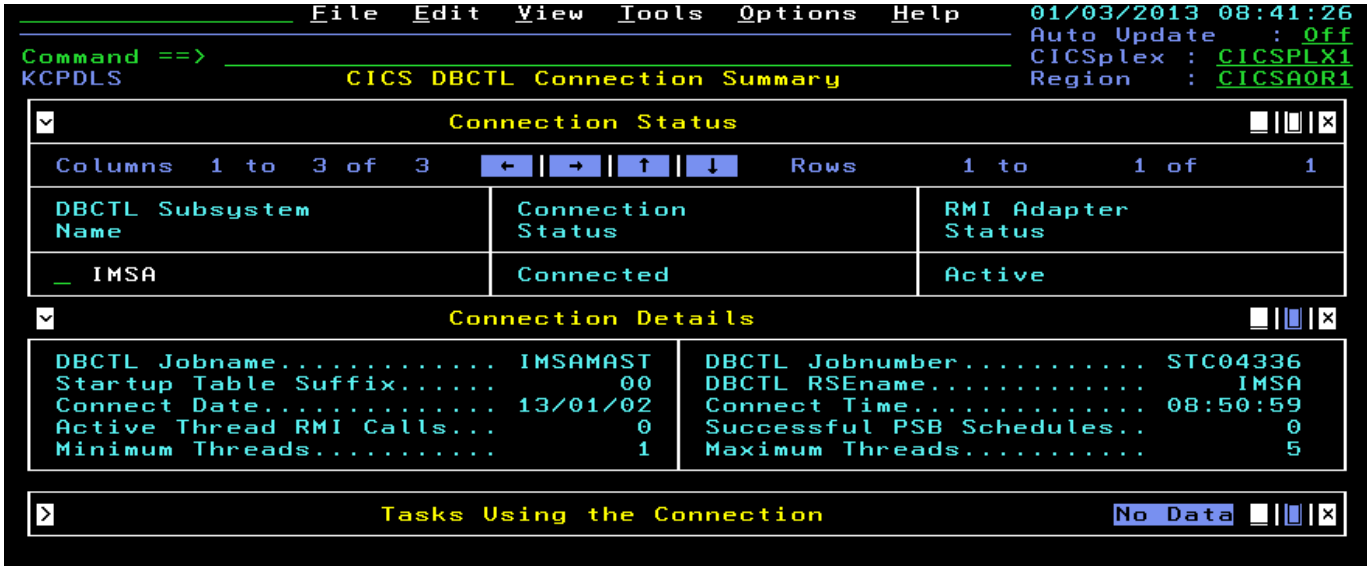
Select option **I** for DBCTL and **Press Enter.**

You are now looking at the DBCTL connection summary panel for the CICSplex. This panel shows every CICS region connected to IMS, and the IMSID of that IMS subsystem.



From the connection summary panel you can drill down to see more information on DBCTL.

Position the cursor next to the CICS Region Name and **Press Enter**.



You are now looking at the DBCTL connections detail for the CICS region. If there were active CICS DBCTL tasks you would see these listed at the bottom of the panel.

Congratulations! This concludes Exercise 4, and also concludes the OMEGAMON IMS Enhanced 3270 exercises.

1.6 Optional Field developed OMEGAMON IMS panels

Exercise 5 continues to explore the e3270 interface details. One of the powerful features of the e3270 interface is that information from all of the relevant OMEGAMON monitoring tools is integrated within a single easy to use 3270 user interface.

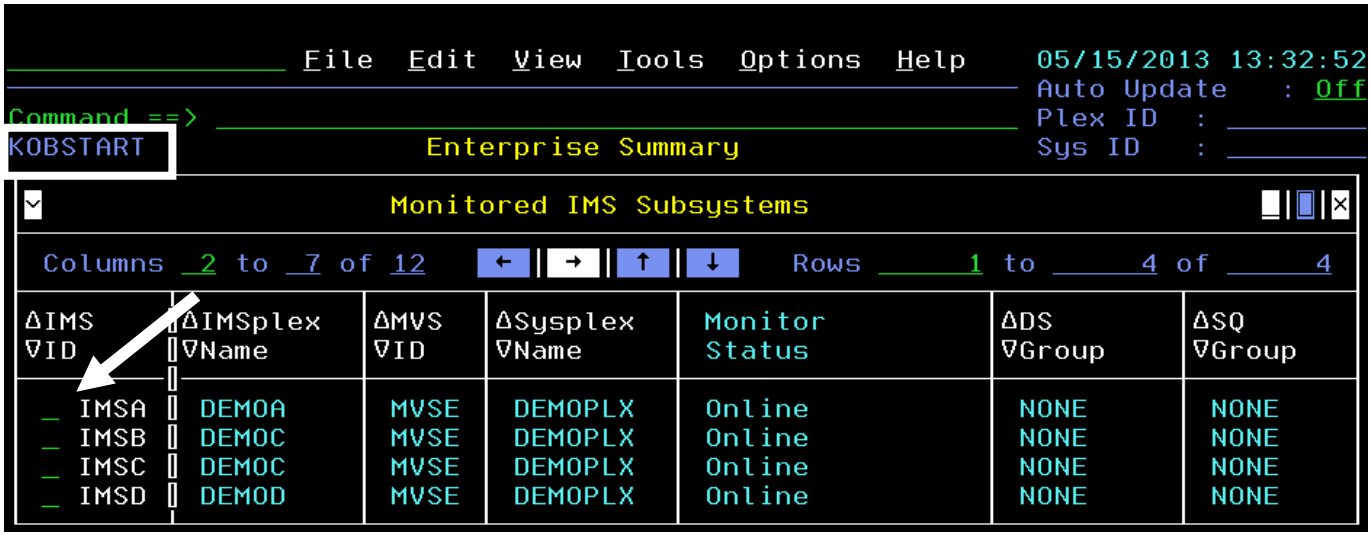
This exercise will demonstrate some additional field developed OMEGAMON IMS enhanced 3270 user interface panels.

How to Navigate to The ZIMS field developed panels

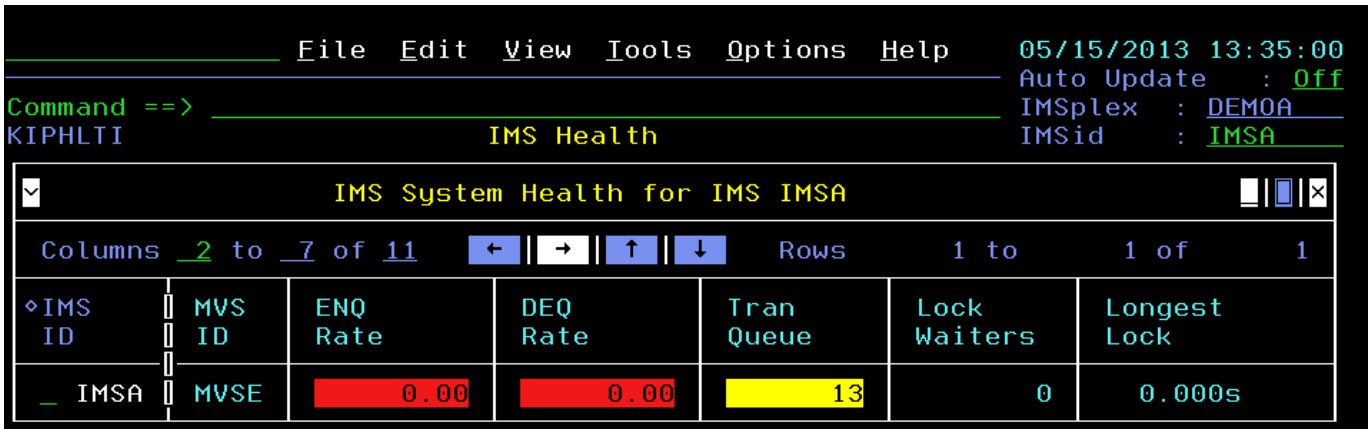
OMEGAMON provides considerable information on IMS. The OMEGAMON enhanced 3270 user interface is very flexible and customizable. It is easy to create user defined panels. In this exercise you will be looking at some field developed OMEGAMON IMS panels that expand the capabilities of the base tool.

a) To begin this exercise you should be at the KOBSTART panel.

From the KOBSTART panel , scroll down using F8 to find the IMS information.

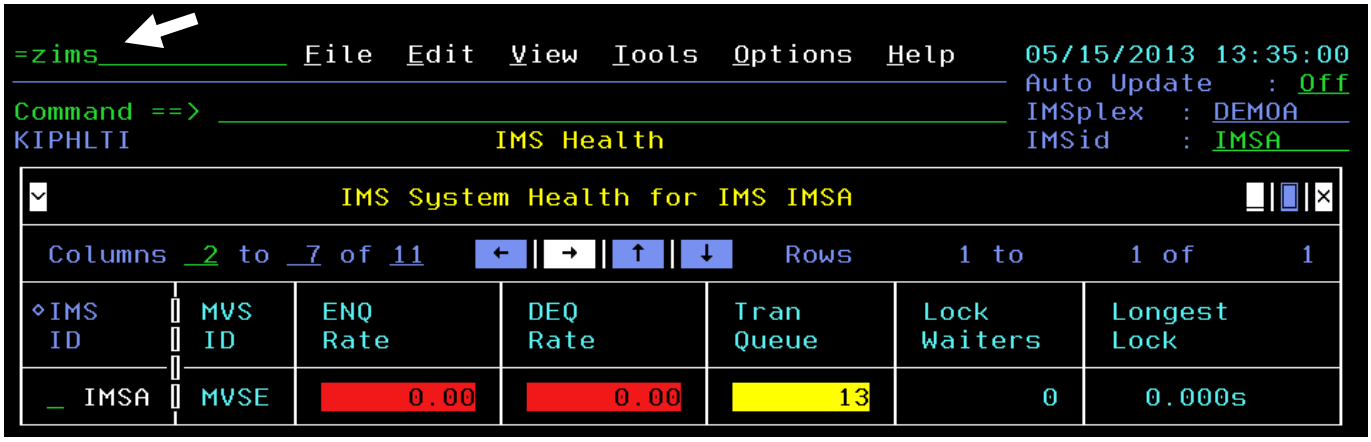


Position the cursor next to IMSID IMSA and **Press Enter**.

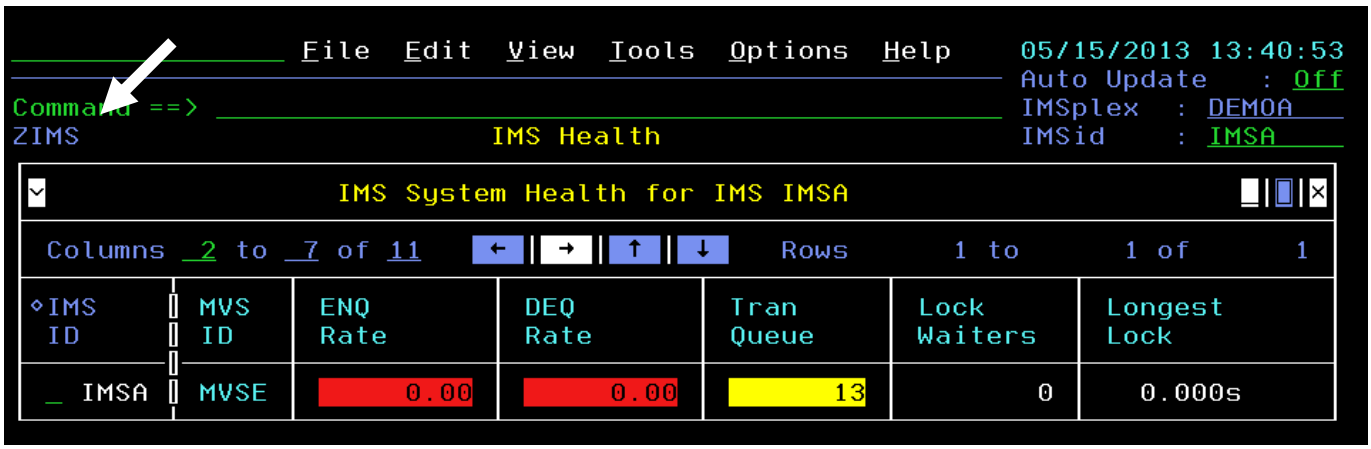


You are now looking at the IMS Health panel, KIPHLTI.

b) **Invoke the field developed panels**

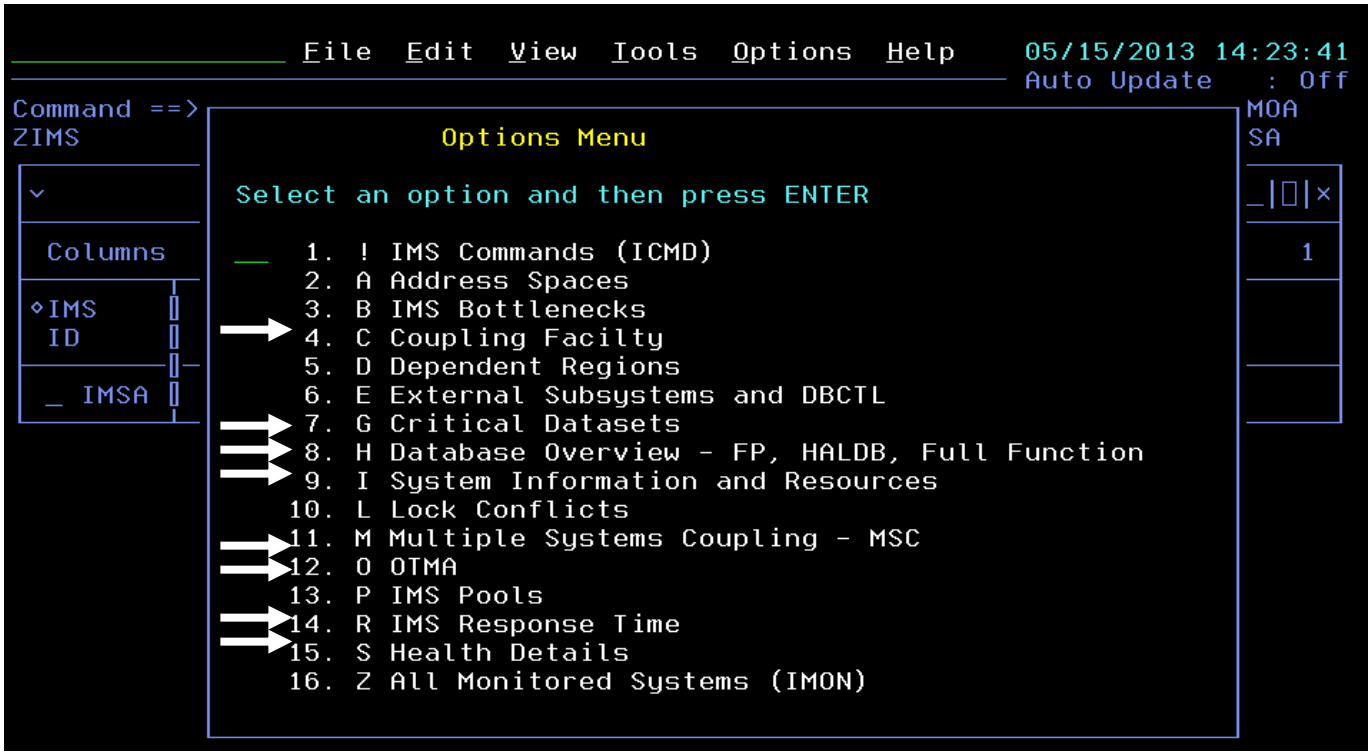


Position the cursor on the toolbar line and **enter =zims** and **Press Enter**.



You are now looking at the ZIMS field developed IMS Health panel (note the panelid is ZIMS)

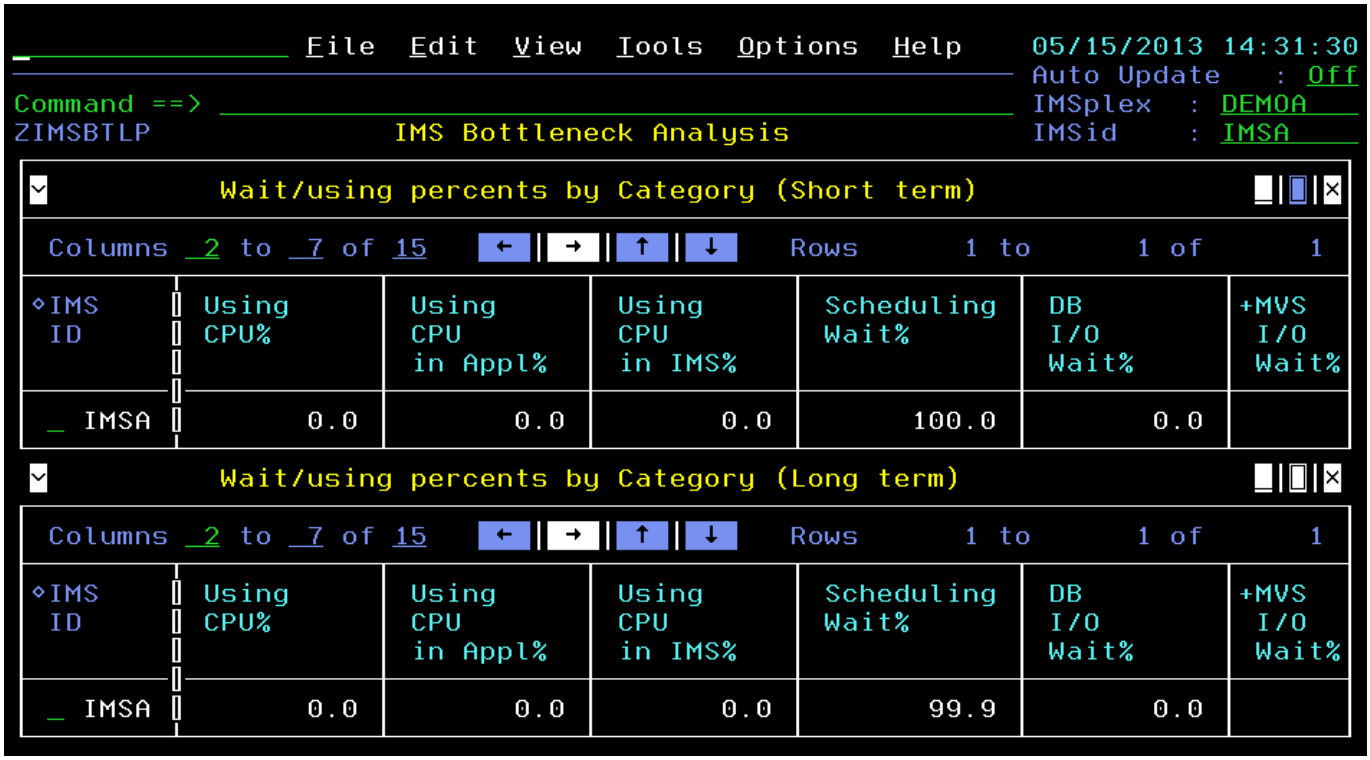
To see the popup of options available from here, **position the cursor** next to the IMSID, **enter** / , and **Press Enter**



You are now looking at the options popup for the field developed OMEGAMON IMS panels. Notice that form here several new options appear, including Option B for Bottleneck analysis, Option E for External subsystems and DBCTL, Option G for Critical datasets, Option H for Database information, Option M for Multiple Systems Coupling, Option O for OTMA, Option P for IMS pools, and Option R for Response Time analysis (RTA).

c) Look at Bottleneck Analysis

Position the cursor in the options popup **enter B** and **Press Enter.**

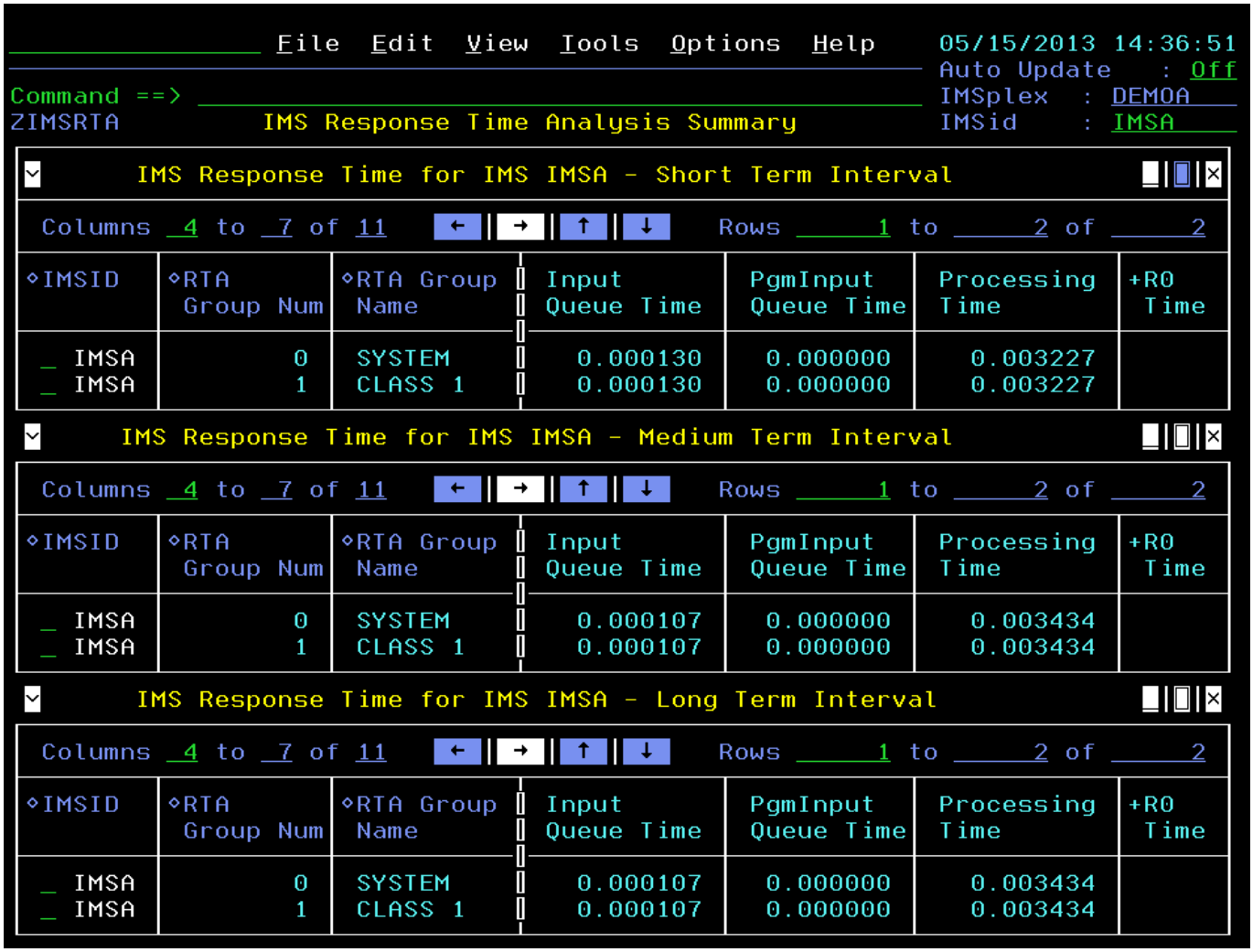


You are now looking at the Bottleneck analysis display for the IMS system. This shows the major wait reasons for the workload flowing through the IMS subsystem. The display shows both short term (default for 5 minutes) and long term (default of 30 minutes) bottleneck data.

d) **Go to Response Time Analysis (RTA) Information**

Let's demonstrate how you can drill down from bottleneck to response time information**.**

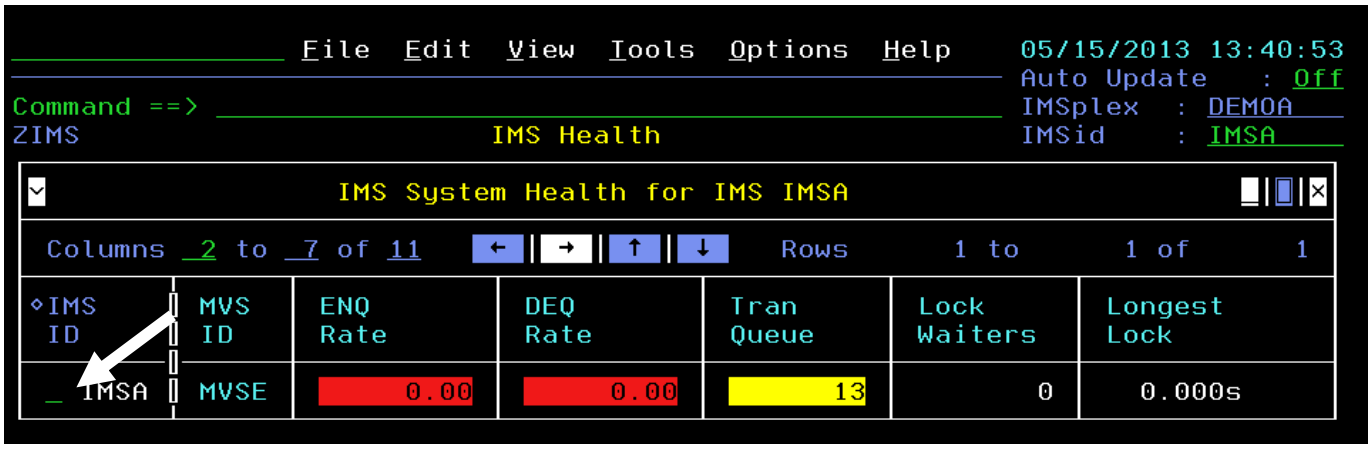
Position the cursor by the IMS ID and **Press Enter.**



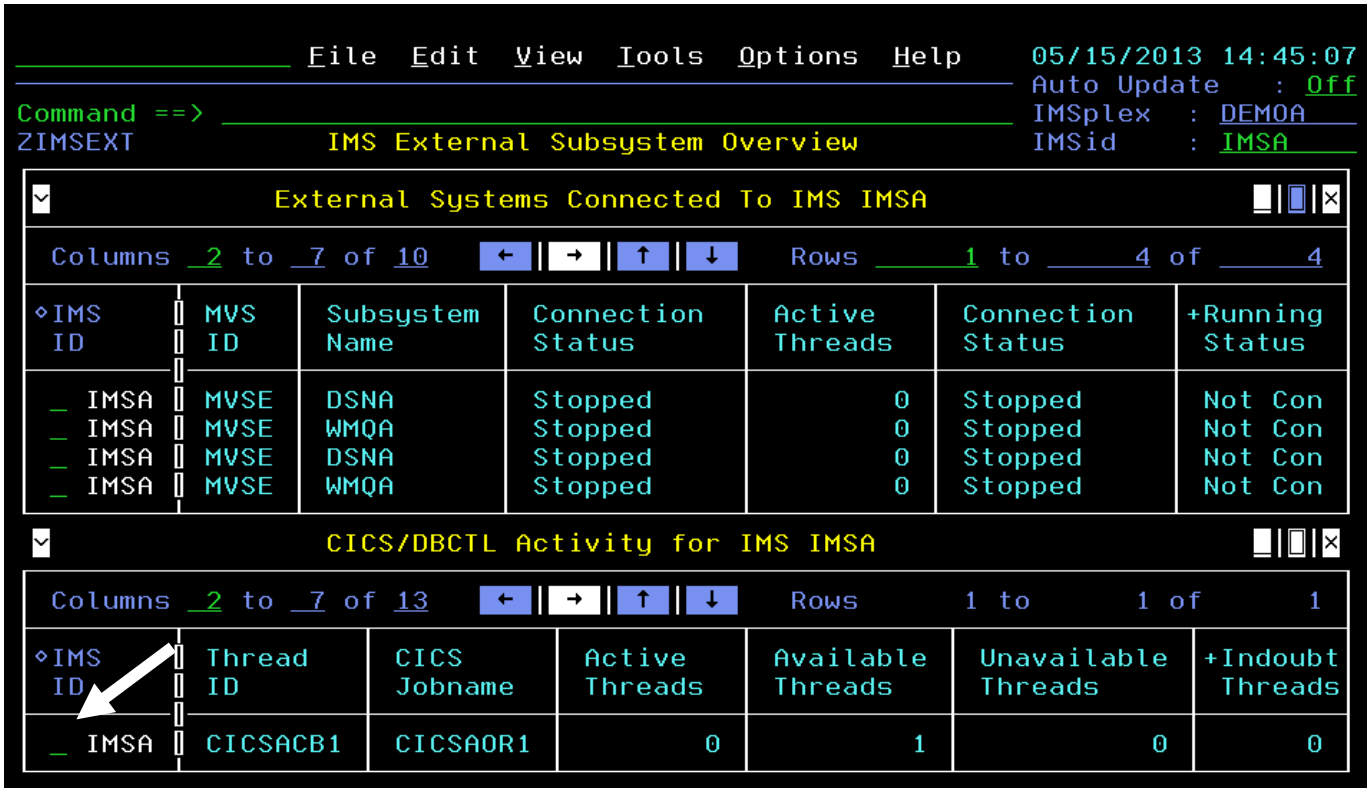
You are now looking at the IMS Response Time Analysis display. In this display you see the IMS transaction response time data broken out by transaction response time group (as defined within OMEGAMON IMS). RTA data shows response time detail including Input Queue time, Output Queue time, and transaction processing time for each RTA group. The panel is also broken into three sections, showing response time information for short term, medium term, and long term intervals.

Press F3 and then **Press F3** again to return to the ZIMS panel.

e) **Look at External Subsystem Information**



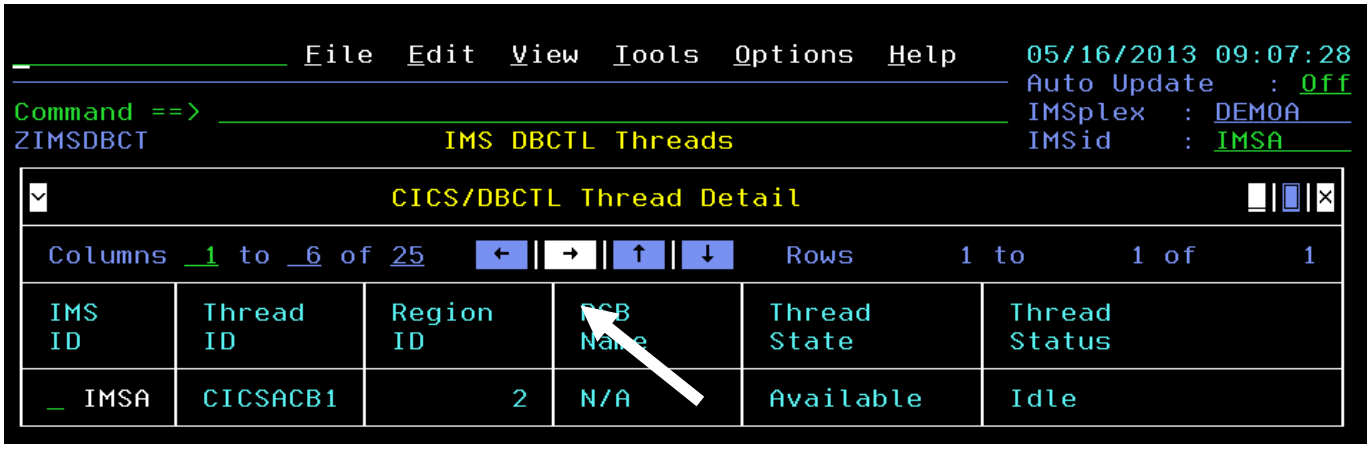
To see the external subsystem information, **position the cursor** next to the IMSID, **enter E** , and **Press Enter**



You are now looking at the IMS External Subsystem Overview display. From here you can see the connection status of IMS to both MQ and DB2. In addition, on the bottom portion of the panel you can see CICS regions connected to IMS via DBCTL.

You also have the option of drilling down for more detail on DBCTL threads.

To see more detail on DBCTL threads, **position the cursor** next to the IMSID and CICS jobname in question, and **Press Enter**

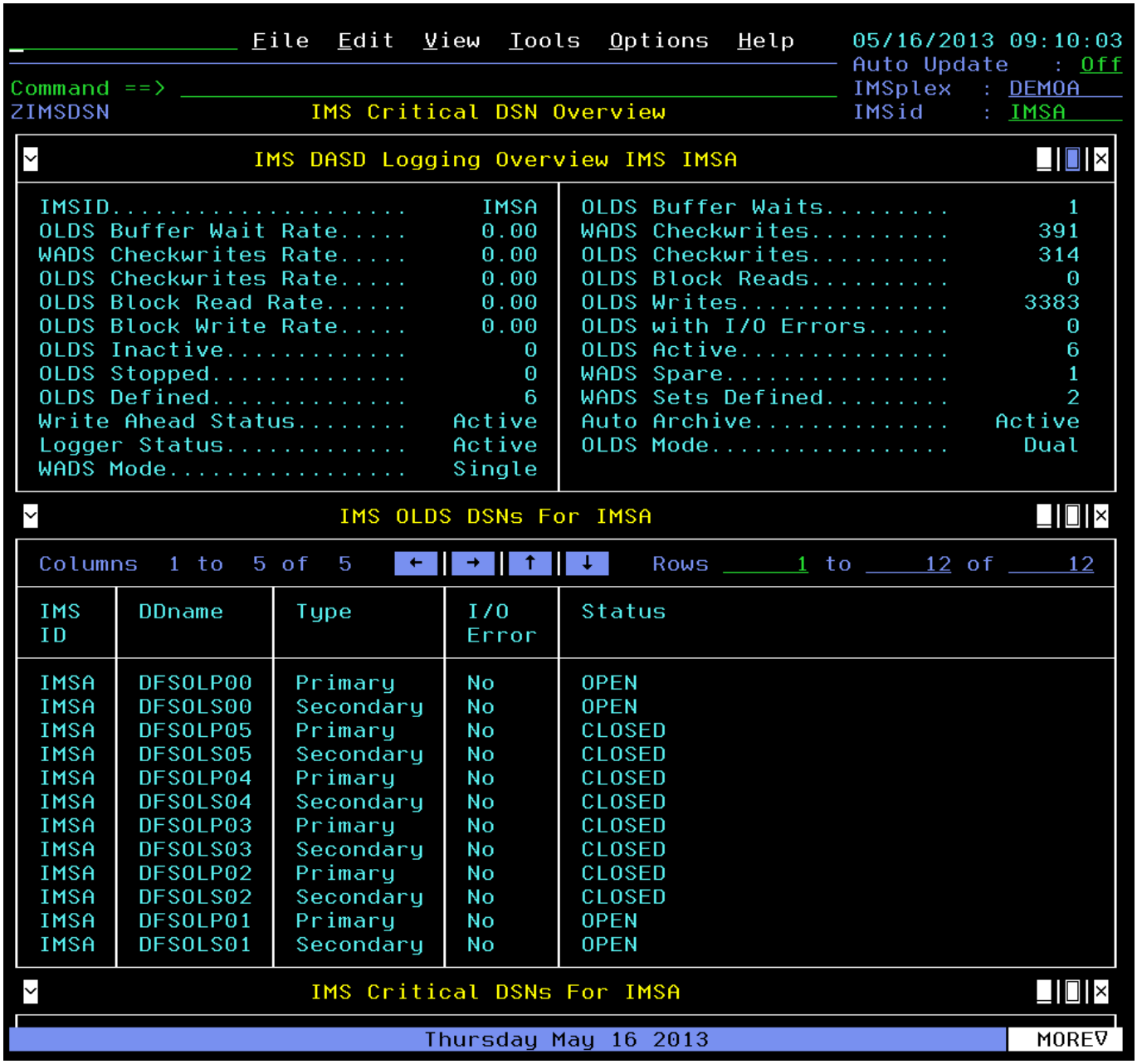


You are now looking at the thread detail panel for threads running in DBCTL. You can scroll the panel to the right to see more detail.

Press F3 twice to return to the ZIMS panel.

f) **Look at Critical IMS datasets**

To see the external subsystem information from the ZIMS panel, **position the cursor** next to the IMSID, **enter G** , and **Press Enter**

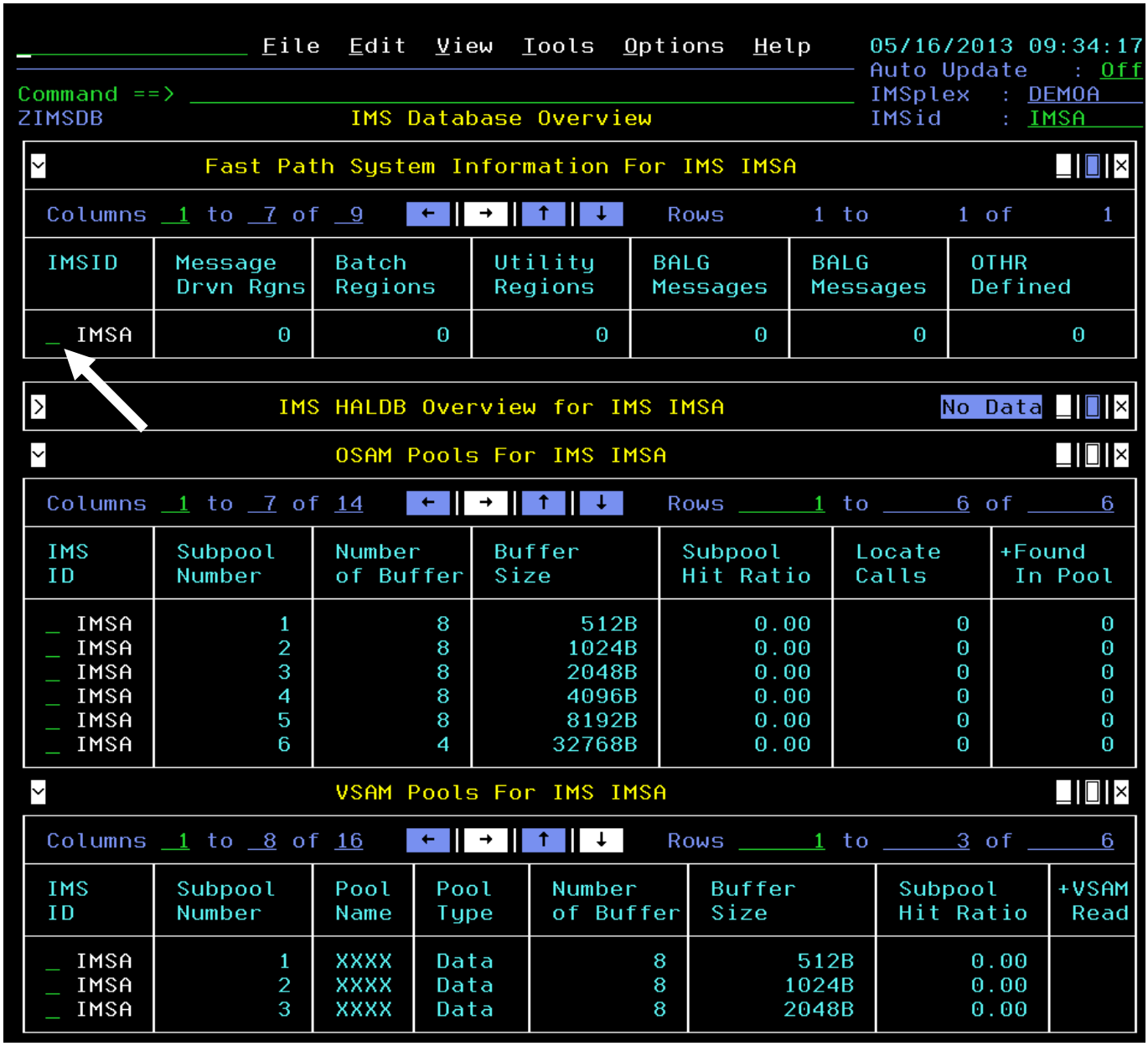


You are now looking at the critical IMS datasets for the IMS subsystem. This includes information on IMS logging (OLDS and WADS), PSBLIB, ACBLIB, Long and short message datasets, RECONS and much more.

Press F3 to return to the ZIMS panel.

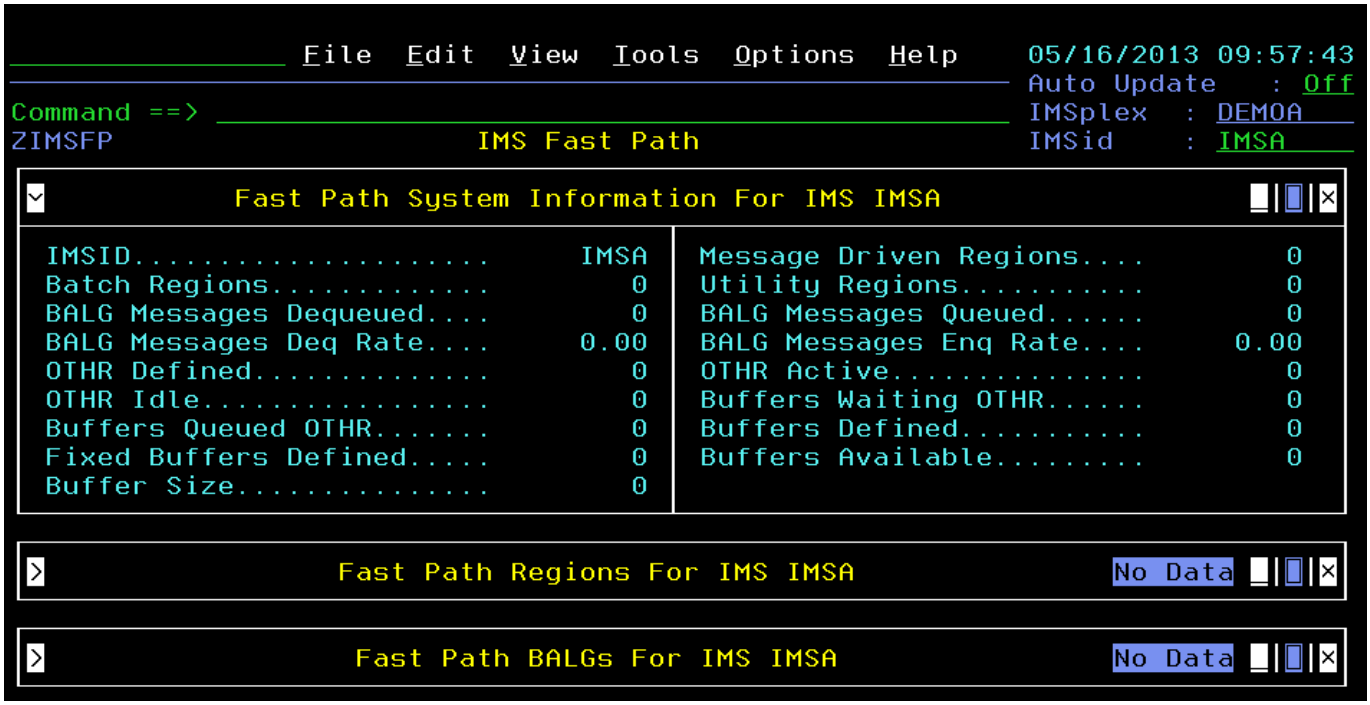
g) **Look at IMS Database information**

To see the external subsystem information from the ZIMS panel, **position the cursor** next to the IMSID, **enter H** , and **Press Enter**



You are now looking at the IMS Database Overview panel. From here you can get information for the various databases enabled and used within the IMS subsystem, including VSAM/OSAM, HALDB, and Fast Path.

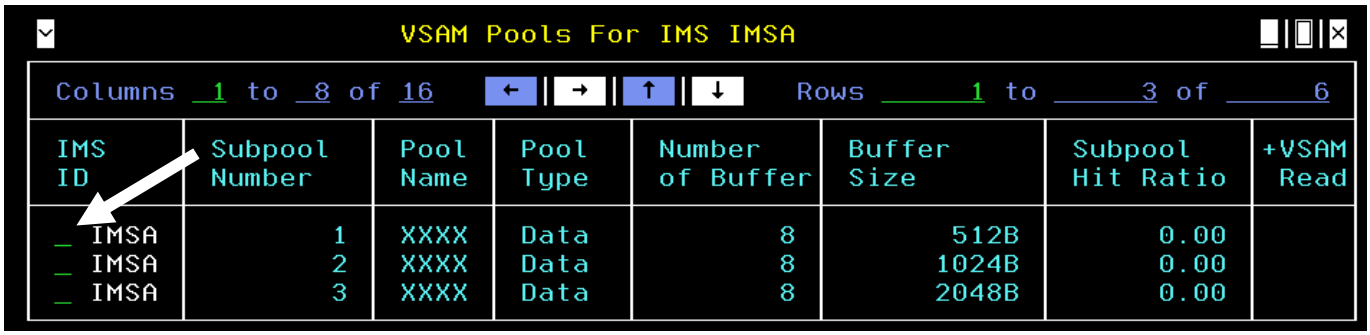
To see more information on Fast Path, **position the cursor** next to the IMSID field in the Fast Path portion of the panel, and **Press Enter**.



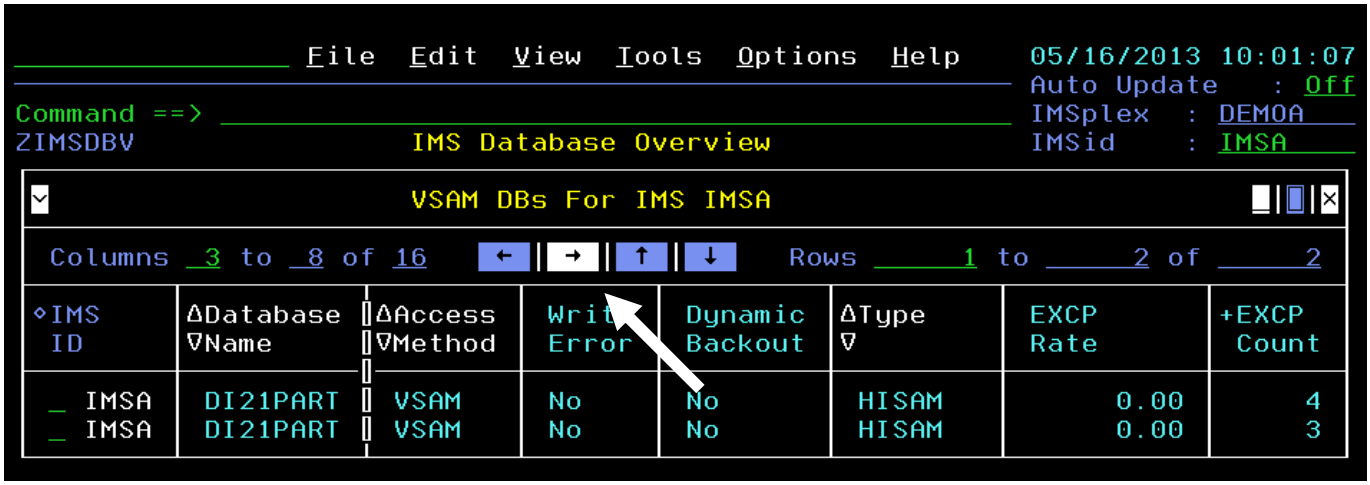
You are now looking at more Fast Path detail information for the IMS subsystem.

Press F3 to return to the Database Overview panel.

From the Database Overview panel there are also drill downs for database detail. To see an example, **position the cursor** next to the IMSID field in the VSAM portion of the panel and **Press Enter**.

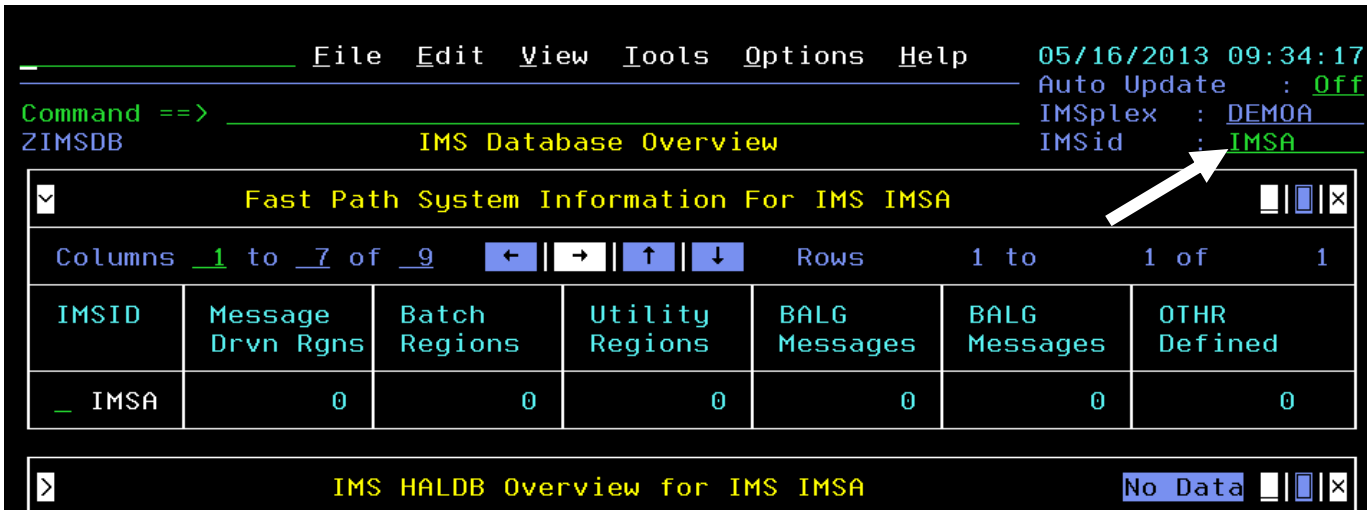


This will allow you to drill down into detail for active VSAM databases in the IMS subsystem.

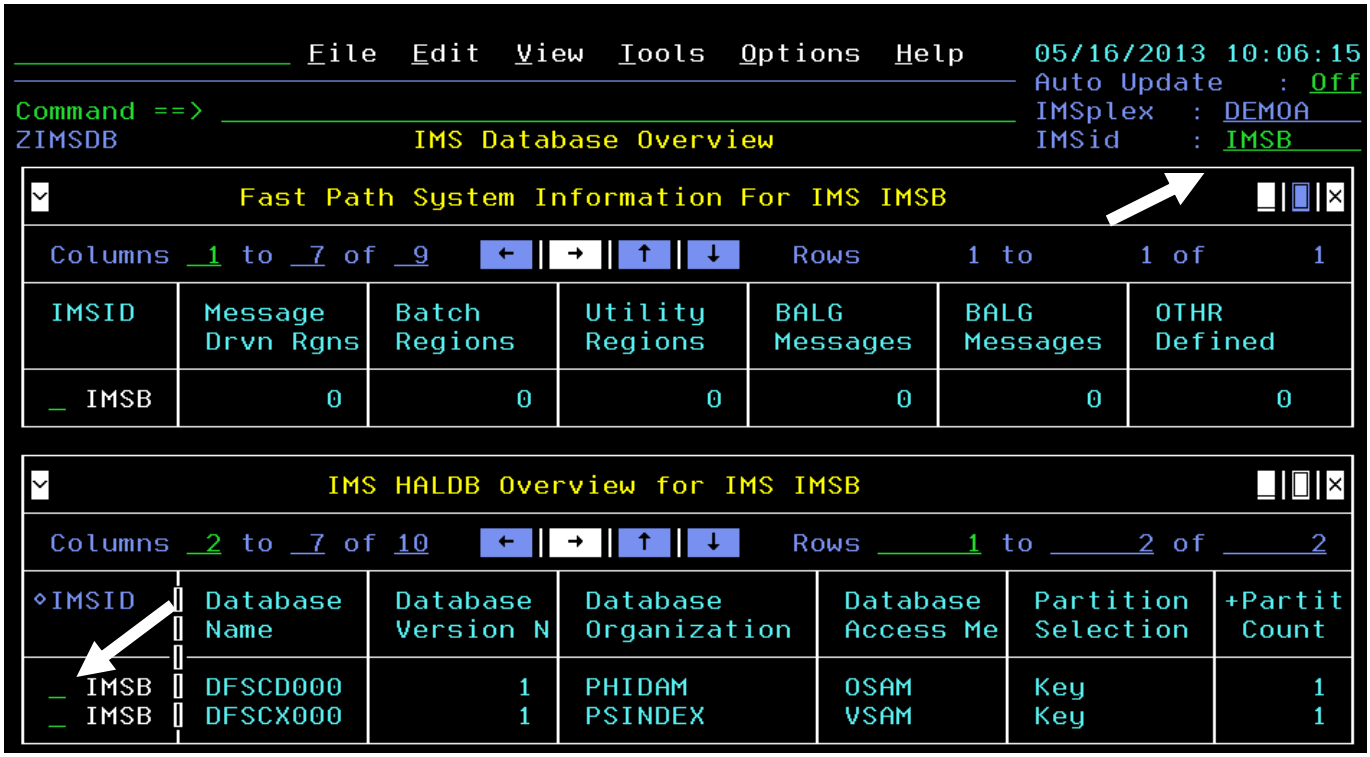


You are now looking at the database detail panel for VSAM databases. You may scroll the panel to see additional information for each of the databases.

Press F3 to return to the Database Overview panel.

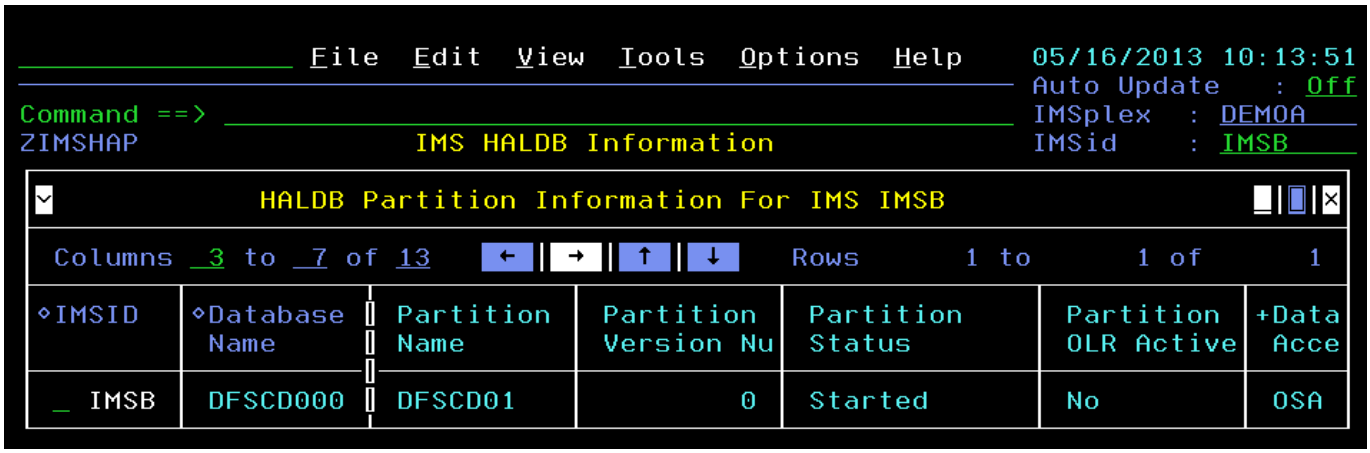


Position the cursor next to the IMSid field in the upper right portion of the panel (the field under IMSplex).
Enter IMSB and **Press Enter**.

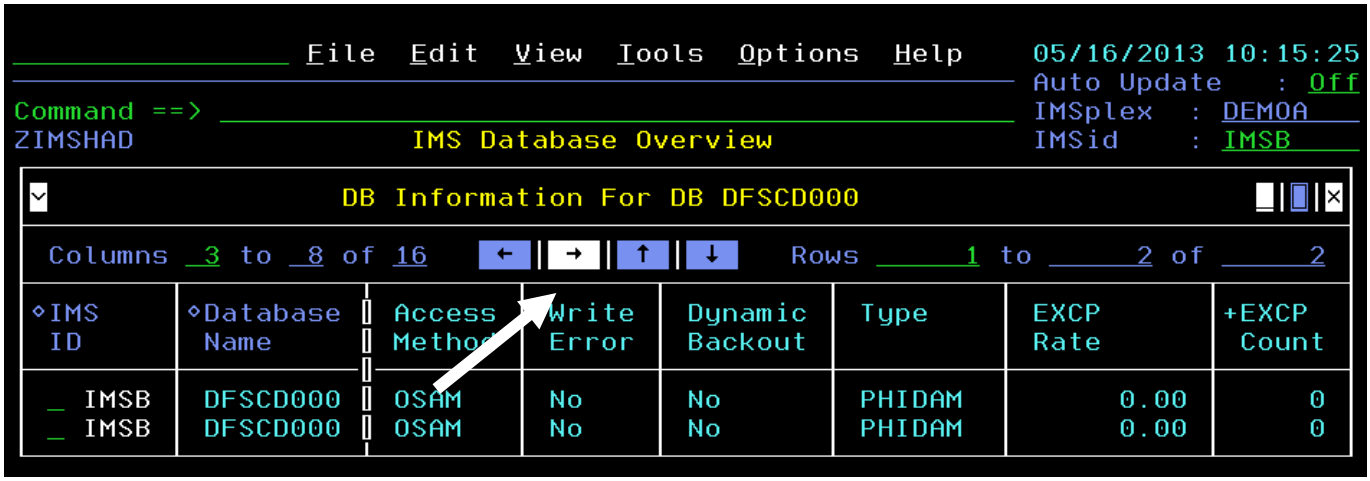


You are now looking at IMS Database Overview for the IMSB subsystem. Notice that HALDB is available in IMSB.

To see more information on HALDB on IMSB, **position the cursor** next to the IMSID in the HALDB portion of the panel, and **Press Enter**.

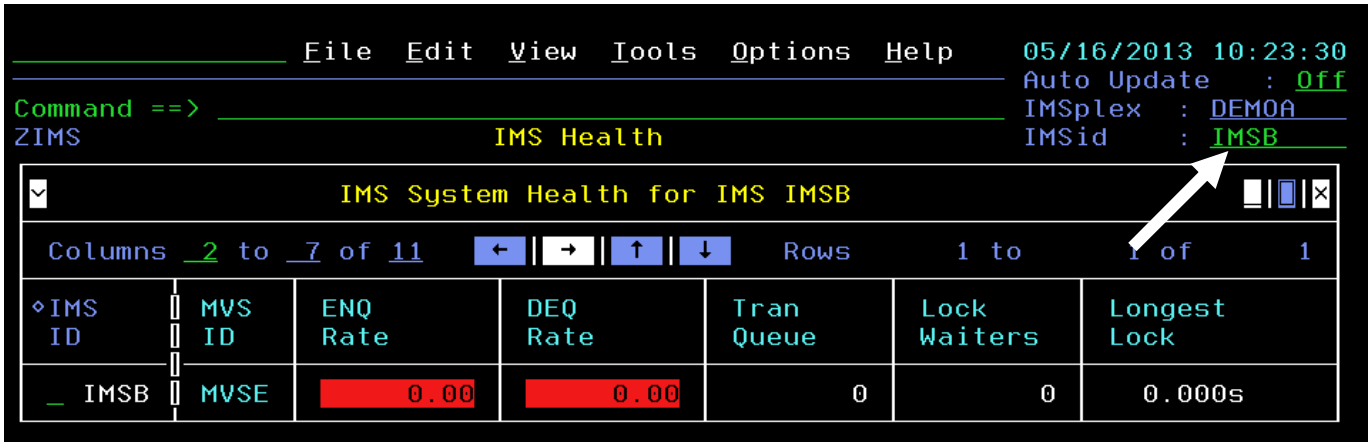


You are now looking at the HALDB partition information. To see more detail on the HALDB databases, **position the cursor** next to the IMSID, and **Press Enter**.

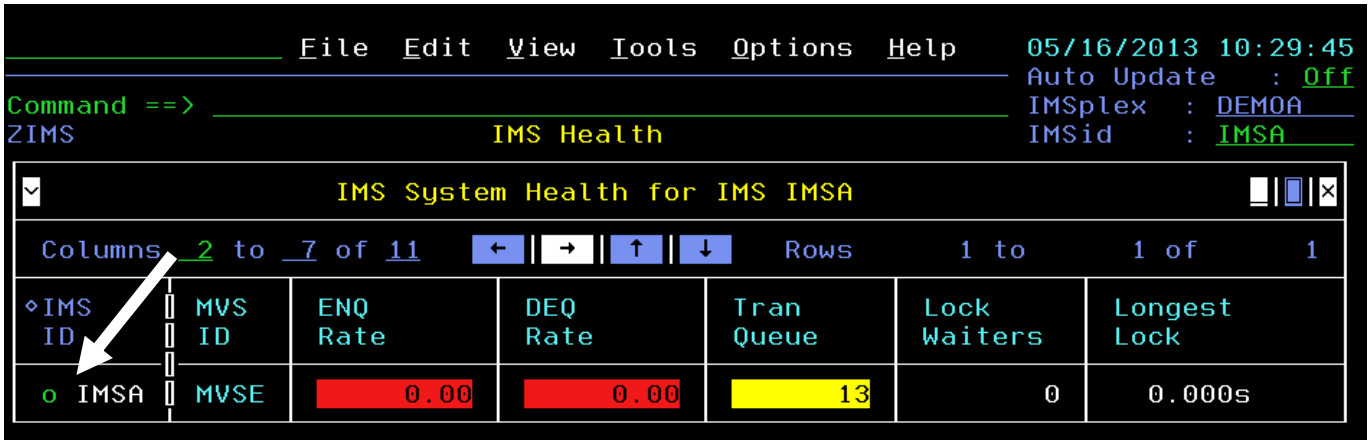


You are now looking at the HALDB database detail. You may scroll this panel to see additional database detail.

Press F3 three times to return to the ZIMS panel.

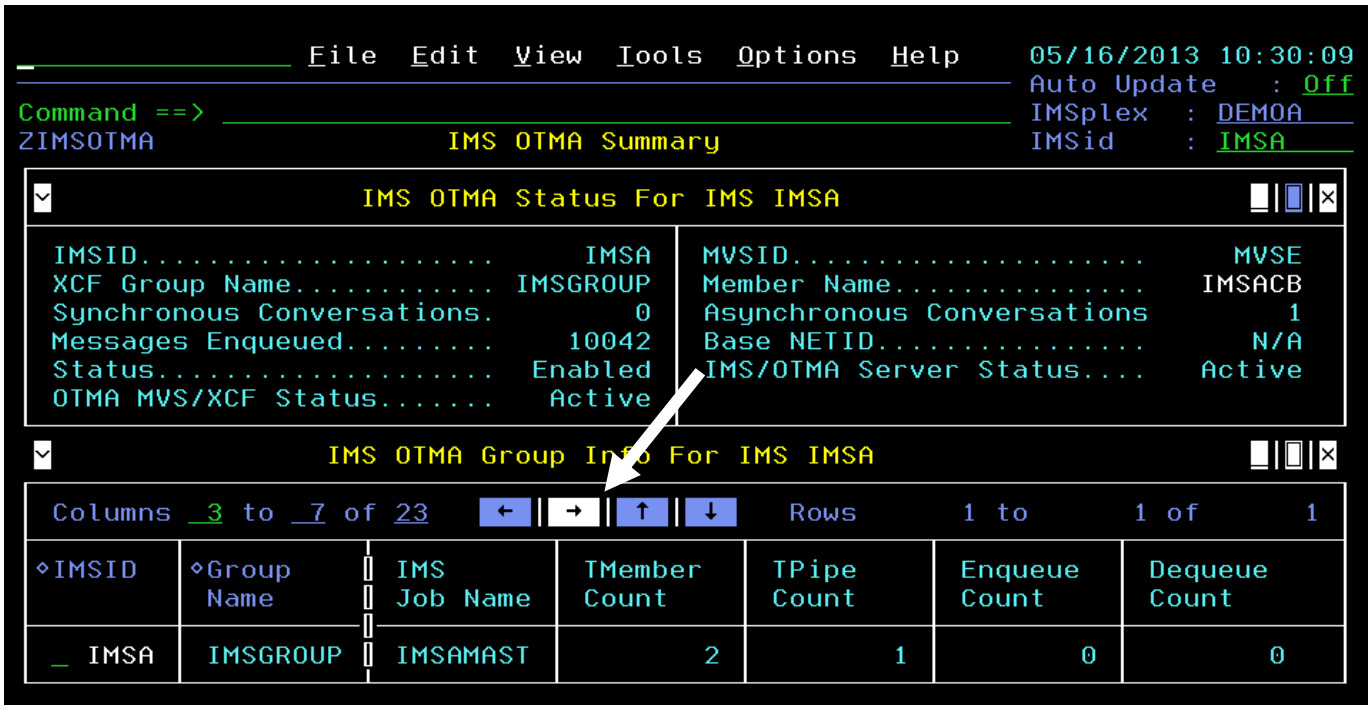


Position the cursor in the IMSid field in the upper right **Enter IMSA** and **Press Enter** to return to the IMSA subsystem.



h) View OTMA information

Now **position the cursor** next to the IMSID, **Enter O** and **Press Enter**.

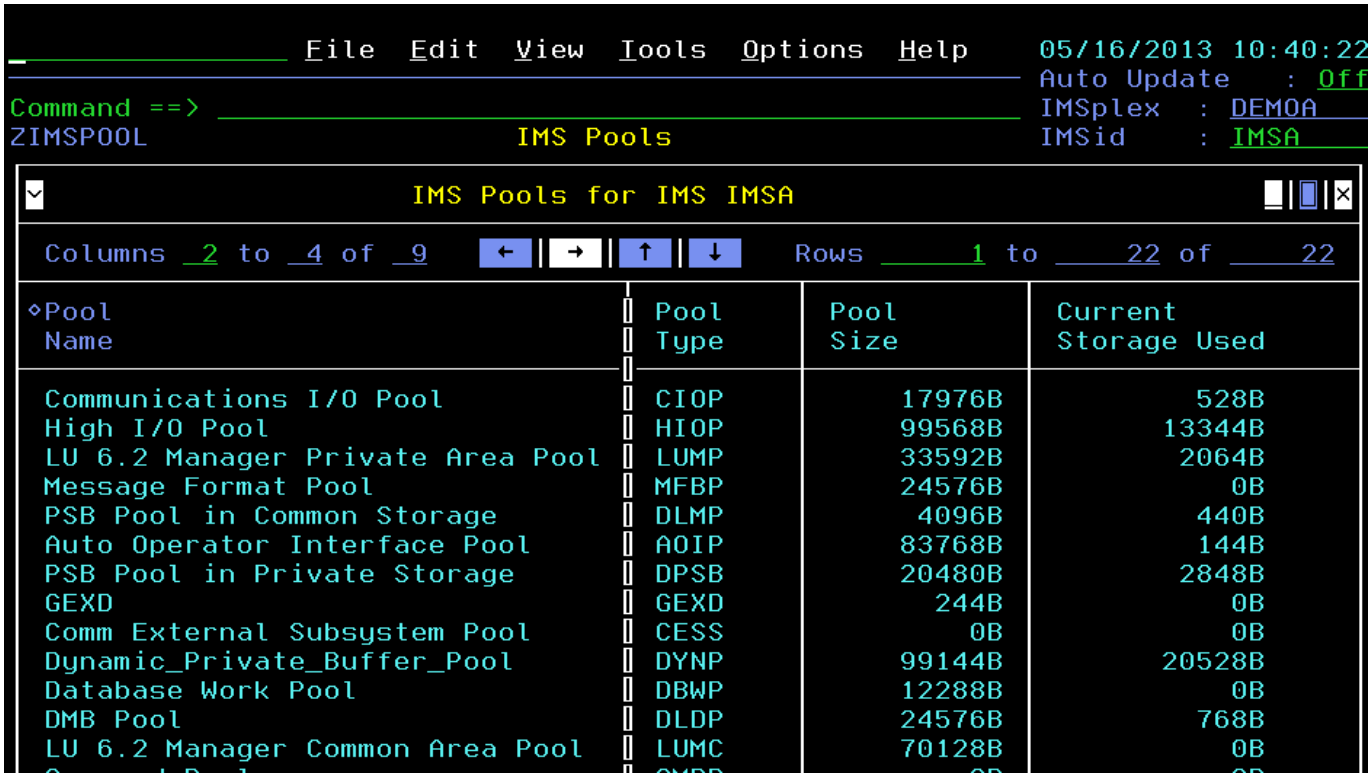


You are now looking at the OTMA information for the IMS subsystem. You may scroll the bottom portion of the panel to see additional detail including TPipe count and enqueue/dequeue information for OTMA processing.

Press F3 to return to the ZIMS panel.

i) View IMS Pools information

On the ZIMS panel, **position the cursor** next to the IMSID, **Enter P**, and **Press Enter.**



You are now looking at the IMS pools panel. This panel shows the critical pools in the IMS subsystem.

Press F3 to return to the ZIMS panel.

This section of the lab is complete. You have now seen the OMEGAMON IMS enhanced 3270 user interface panels.

Lab #2 Monitoring IMS Using Classic Interface

Lab #2 introduces the basics of how to navigate the Classic 3270 interface for OMEGAMON XE for IMS. This lab is performed from the default ‘start’ panel, ZMENU.

Scenario 1 illustrates several of the detailed displays available in OMEGAMON XE for IMS.

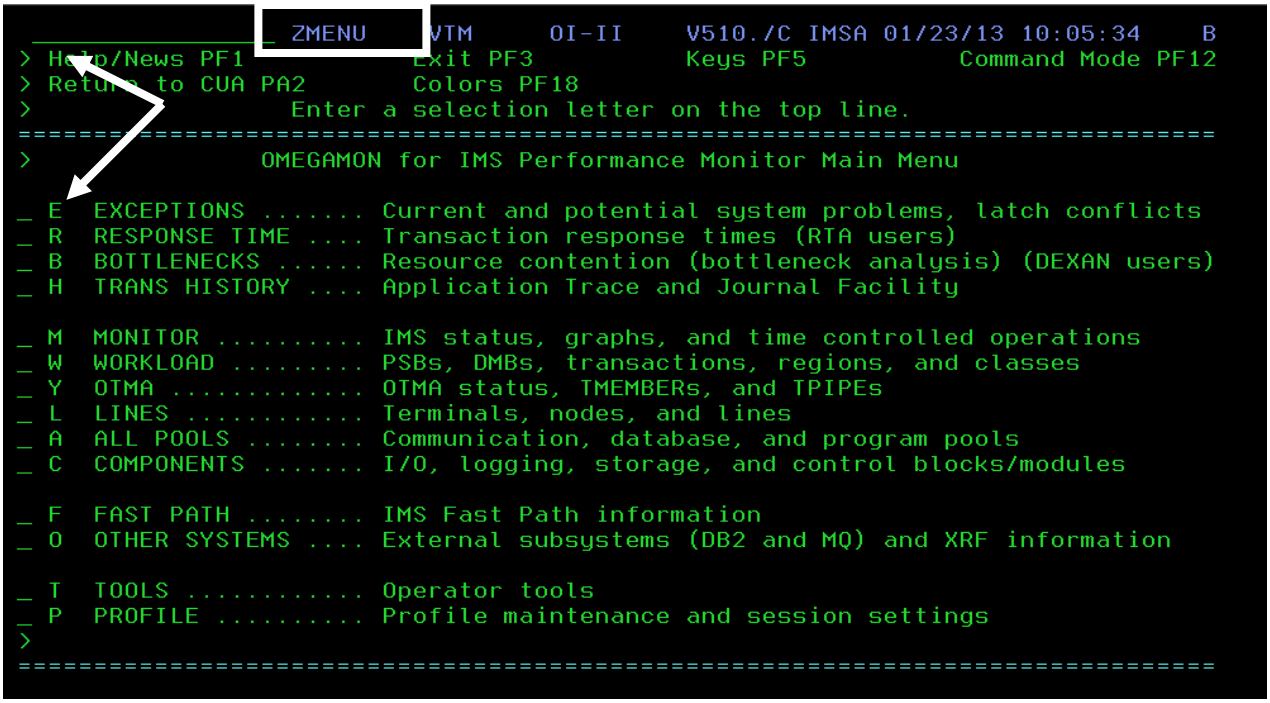
Security Information!
Prior to starting these exercises, please see the instructor for user ID/password and logon instructions.

2.1 View IMS system status information

a) Sign on to the Classic 3270 user interface.

Press **ENTER** and you should see the following OMEGAMON screen:

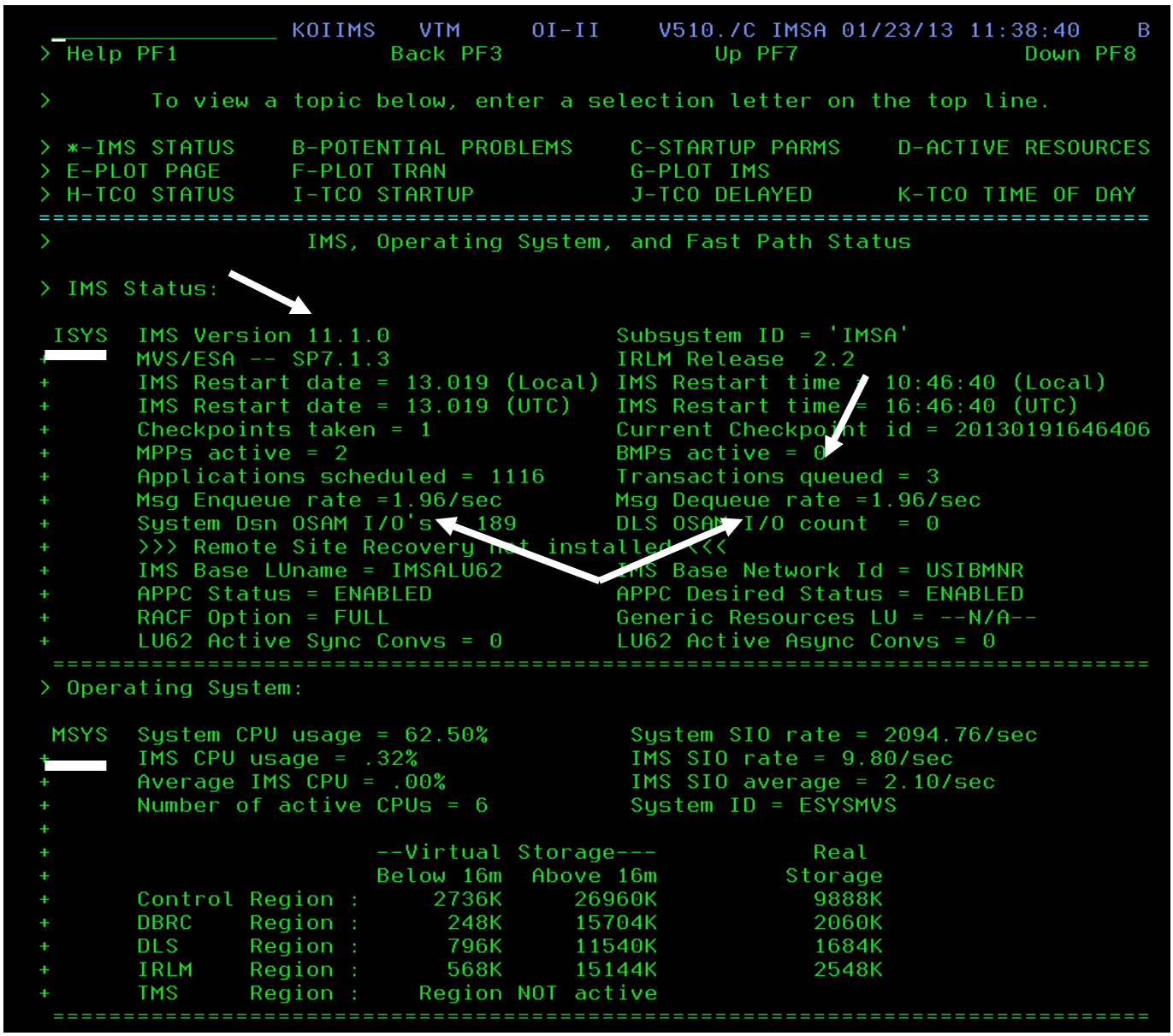
You are now looking at the default initial screen for OMEGAMON IMS Classic Interface, ZMENU. This panel is the main panel for the OMEGAMON IMS Classic interface and provides menu options for all the other various displays within the tool.



To navigate from the main panel you may enter the appropriate letter commands to the top left portion of the panel (to the left of the panel name), or you may select the letter by entering an S next to the panel option and pressing Enter.

b) View the IMS status

Position the cursor on the command line (upper left corner of the panel). Enter **M** and **Press Enter.**



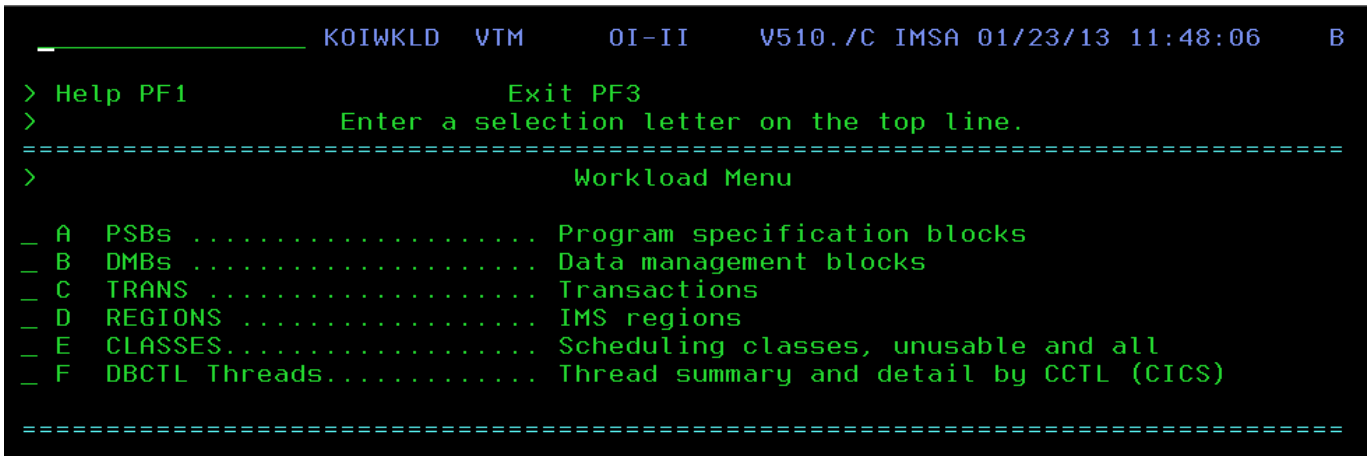
You are now looking at the IMS status display. From here you can see relevant information about the IMS subsystem. From this screen you can see IMS information such as Msg enqueue and dequeue rate, number of transactions queued, IMS version, and number of active IMS regions.

Classic screens (also called screen spaces) consist of what are called major and minor commands. The commands are visible on the left portion of the display. In this example, you see two major commands, ISYS to show IMS systems information, and MSYS to show relevant operating system information.

Press F3 to return to ZMENU.

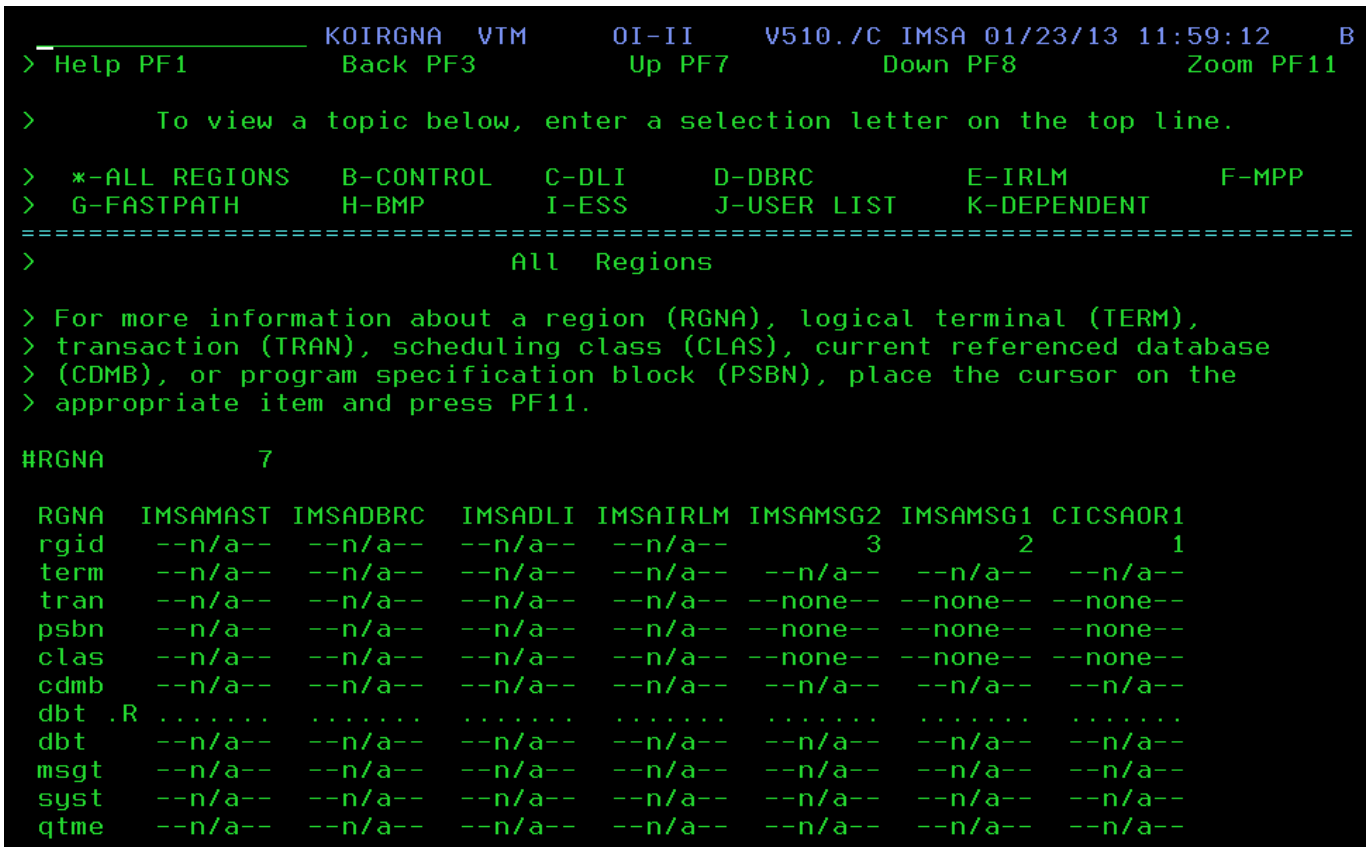
c) View IMS resources and workloads

Position the cursor on the command line (upper left corner of the panel). Enter **W** and **Press Enter.**



You are now looking at the Workload menu. From here you can look at the various resources, such as PSBs, DBs, transactions, and regions that make up a typical IMS subsystem.

Position the cursor on the command line (upper left corner of the panel). Enter **D** and **Press Enter.**



You are now looking at the IMS regions display (KOIRGNA). From here you may display various views of the regions that make up the IMS subsystem.

Looking at the screen space you see that the screen is composed of a major command, RGNA, and a set of what are called minor commands that are listed underneath the RGNA major command. For example, underneath the RGNA major command you see the rgid minor command for region id, tran for transaction in the region, psbn for PSB in the region, and more. You will note that while major commands are in uppercase, as in the RGNA major command example, and the minor commands are in lowercase, such as with the psbn command.

Position the cursor on the command line (upper left corner of the panel). Enter **K** and **Press Enter.**

```
 _________________ KOIDEP   VTM     OI-II    V510./C IMSA 01/23/13 12:05:15    B
> Help PF1          Back PF3          Up PF7          Down PF8          Zoom PF11

>       To view a topic below, enter a selection letter on the top line.

>  A-ALL REGIONS   B-CONTROL   C-DLI     D-DBRC         E-IRLM         F-MPP
>  G-FASTPATH      H-BMP       I-ESS     J-USER LIST    *-DEPENDENT
================================================================================
>                            All Dependent Regions

> For more information about a region (RGND), logical terminal (TERM),
> transaction (TRAN), scheduling class (CLAS), DMB (CDMB), or PSB (PSBN), place
> the cursor on the appropriate item and press PF11.

 RGND  IMSAMSG2 IMSAMSG1 CICSAOR1
 rgid         3        2        1
 term   --n/a--  --n/a--  --n/a--
 tran  --none-- --none-- --none--
 psbn  --none-- --none-- --none--
 clas  --none-- --none-- --none--
 dbt .R .......  .......  .......
 dbt    --n/a--  --n/a--  --n/a--
 msgt   --n/a--  --n/a--  --n/a--
 syst   --n/a--  --n/a--  --n/a--
 qtme   --n/a--  --n/a--  --n/a--
 cdmb   --n/a--  --n/a--  --n/a--

 stat      Idle     Idle     Idle
 xsst   --n/a--  --n/a-- --none--
 xsid  --none-- --none--  Not-Con
 lkwt   --n/a--  --n/a--  --n/a--
 qtme   --n/a--  --n/a--  --n/a--
 wait   5:49 MN  5:46 MN    3 SEC
 ocup  --init-- --init--  --n/a--
 plim

 scls01       1        1  --n/a--
 scls02--none-- --none--  --n/a--
 scls03--none-- --none--  --n/a--
 scls04--none-- --none--  --n/a--
```

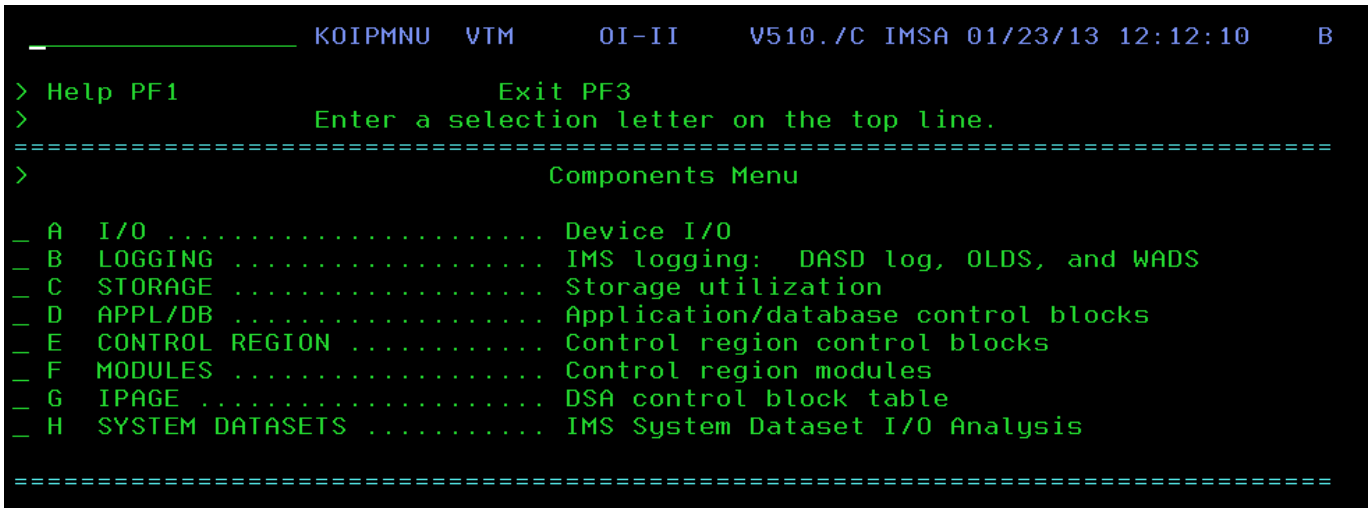
You are now looking at the region display just showing dependent regions.

You may Press enter multiple times to watch the screen refresh, and if possible catch a transaction as it flows through the region.

Once finished, **Press F3** and then **Press F3** one more time to return to the ZMENU.

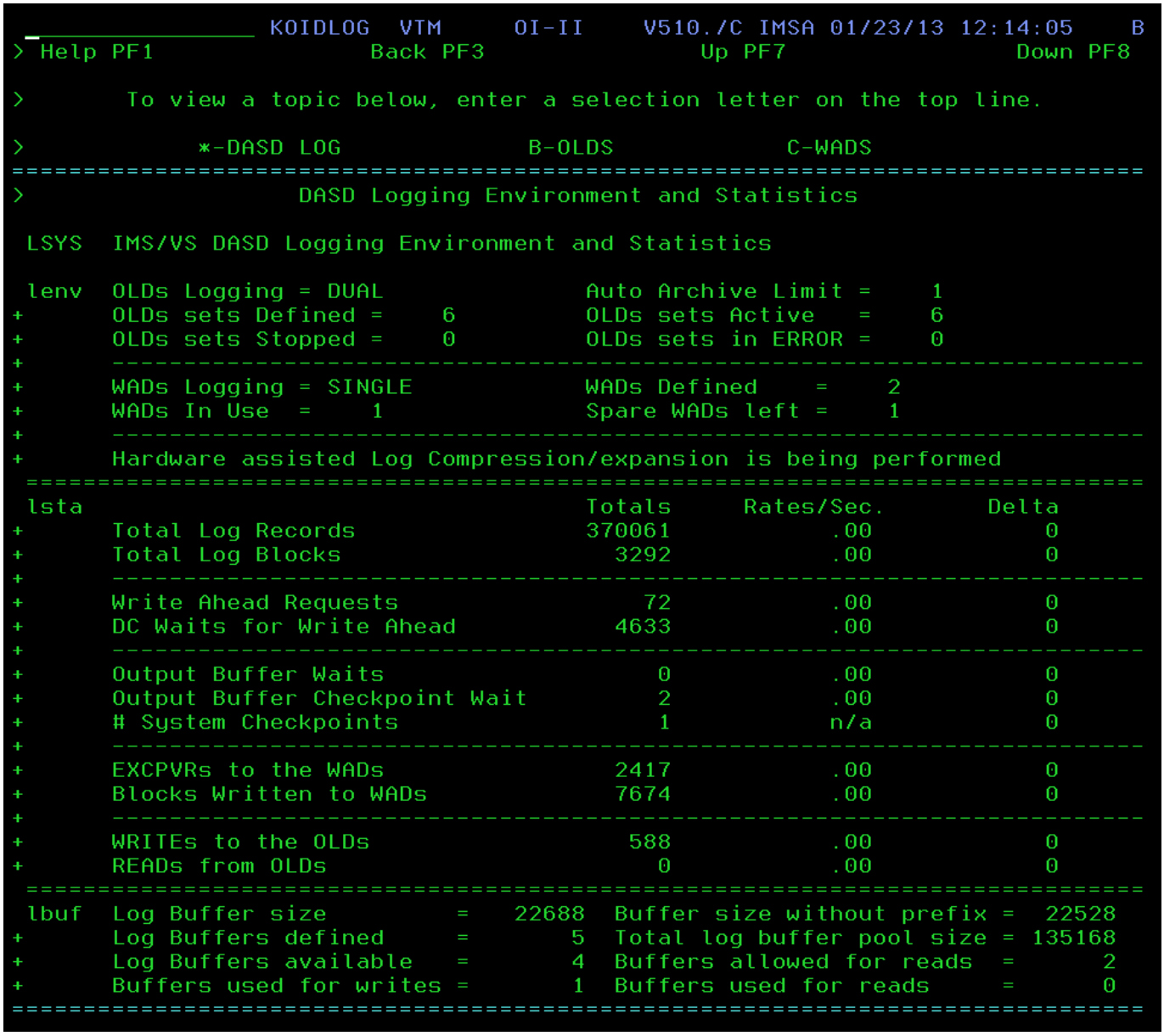
From the main ZMENU panel let's now look at an example of IMS components.

Position the cursor on the command line (upper left corner of the panel). Enter **C** and **Press Enter.**



You are now looking at the Components menu. From here you can look at subsystem I/O, logging, and key IMS system datasets.

Position the cursor on the command line (upper left corner of the panel). Enter **B** and **Press Enter.**



You are now looking IMS logging display. From here you can see IMS log status, number of OLDS defined, and the status of log archiving in the IMS subsystem. Note that the screen is composed of the LSYS major and three minor commands, lenv, lsta, and lbuf.

Try pressing Enter a few times to see the information increment.

Press F3 and then **Press F3** one more time to return to the ZMENU.

This concludes Scenario 1 of the OMEGAMON IMS Classic interface lab.

2.2 Response time and Bottleneck analysis

Scenario 2 continues to explore the Classic 3270 interface details. This lab will explore how OMEGAMON for IMS Classic interface displays transaction response time and performs bottleneck analysis of IMS workloads.

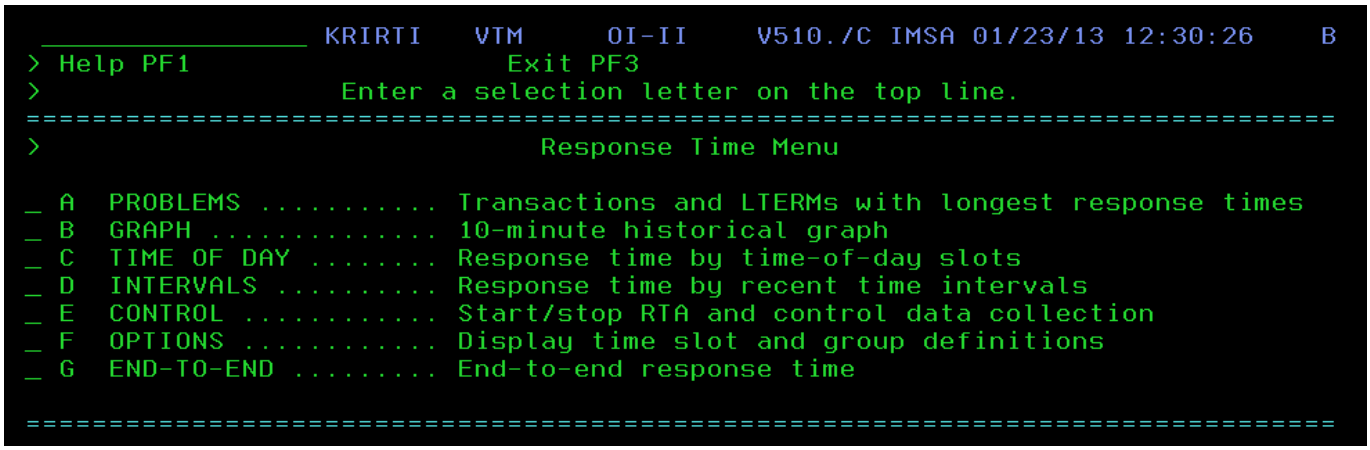
View IMS Response time

In this Scenario, you will view information on IMS transaction response time.

The OMEGAMON IMS Response time analysis (RTA) component tracks transaction response time as the transactions flow through the IMS subsystem. RTA groups and analyzes the response time information by groups, and also breaks down the response time data into sub-components (inqueue time, processing time, outqueue time).

a) From the ZMENU main menu drill down to see response time information

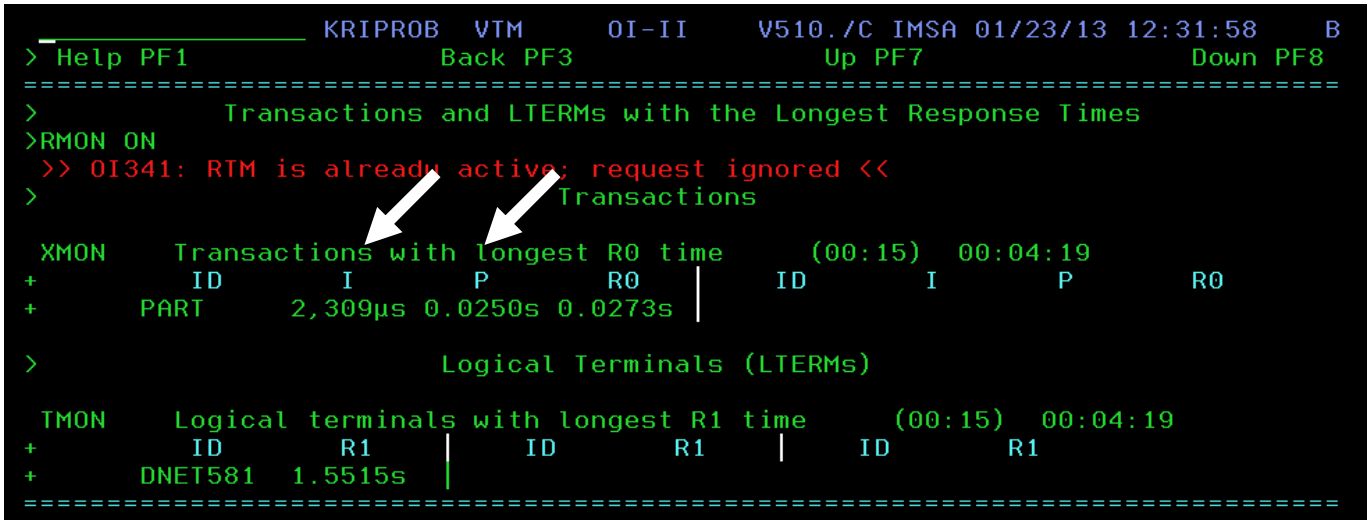
Position the cursor on the command line (upper left corner of the panel). Enter **R** and **Press Enter.**



You are now looking at the response time menu (panel KRIRTI). From here you can look at IMS transaction response time in a variety of different views.

b) View longest running transactions

Position the cursor on the command line (upper left corner of the panel). Enter **A** and **Press Enter.**

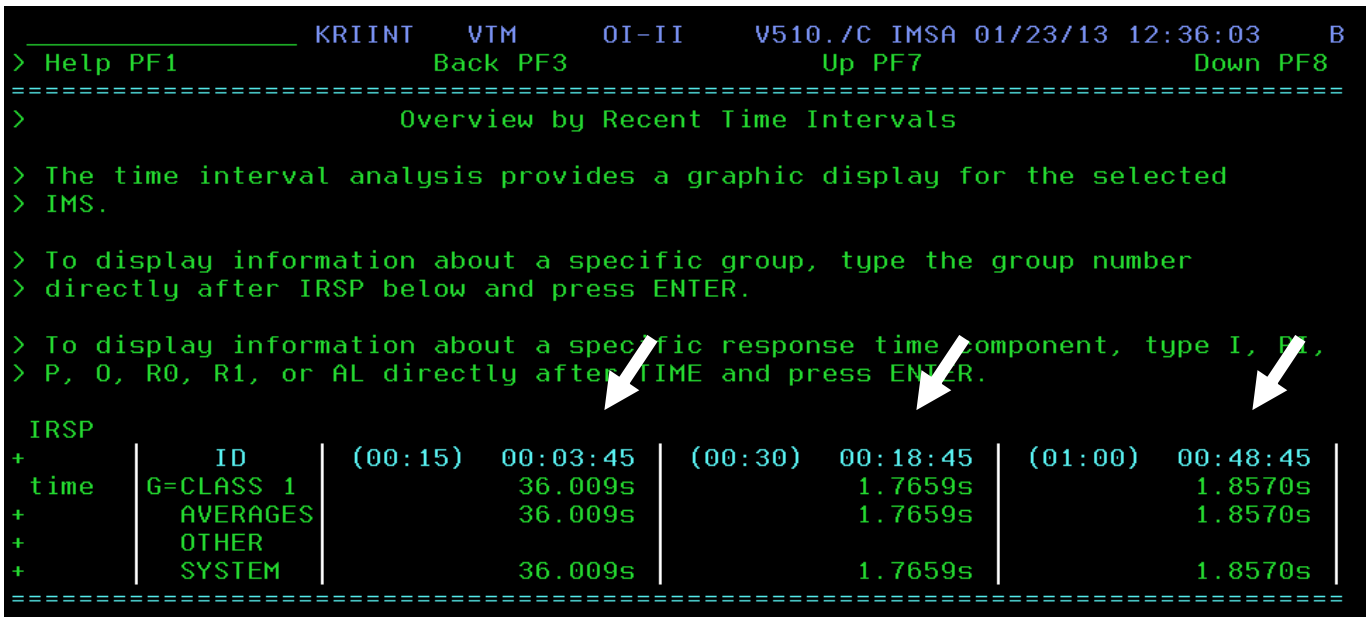


You are now looking at a display which shows the transactions and terminals with the highest transaction response time. In this example you see that the PART transaction has the highest response time in the IMS subsystem. You also see the break down of IMS transaction respose time into “I” for Input queue time and “P” for processing time. “R0” time represents the sum of I and P time.

From here **Press F3** once to return to the KRIRTI menu.

c) View Response time interval information

Position the cursor on the command line (upper left corner of the panel). Enter **D** and **Press Enter.**



You are now looking at the IMS response time interval display. From here you can see IMS response time broken down by group (in this example a group of transactions running in Class 1), and then by interval (a 15 minute interval, a 30 minute interval, and a one hour interval). The

transaction groupings are user definable, and the time intervals may be customized. By looking at time intervals it becomes easier to identify spikes and outliers in transaction processing.

Press F3 and then **Press F3** one more time to return to the ZMENU.

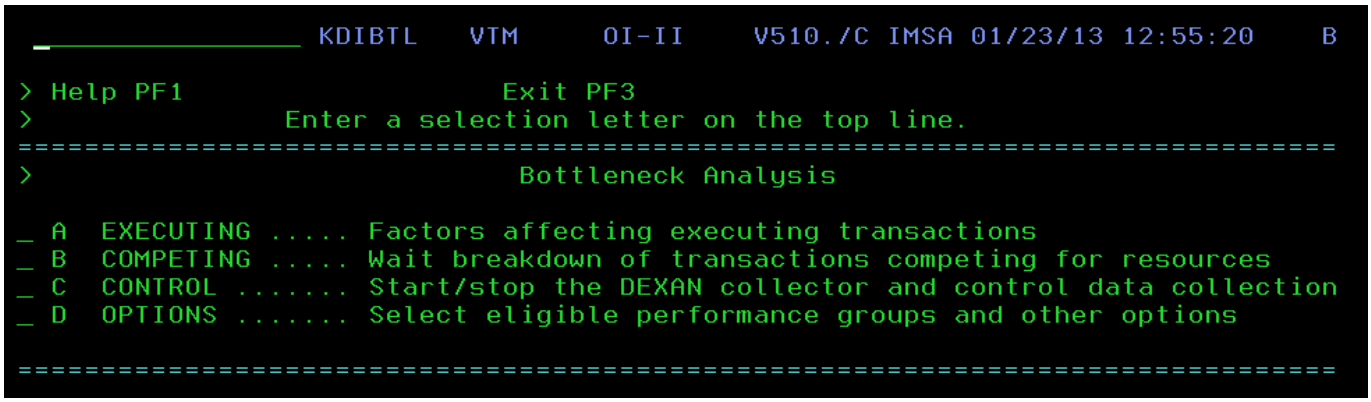
View IMS Bottleneck analysis

In this portion of the scenario you will be able to see how to identify potential bottlenecks in IMS processing.

Bottleneck analysis is analytic component of OMEGAMON IMS that looks at the IMS workload running in the IMS subsystem, and breaks down that workload by component. Bottleneck analysis will show if the IMS workload is waiting and the percentage of time it is waiting for a given resource type. Note, Bottleneck analysis works on the same grouping mechanism as RTA.

a) From the ZMENU main menu drill down to see Bottleneck analysis information

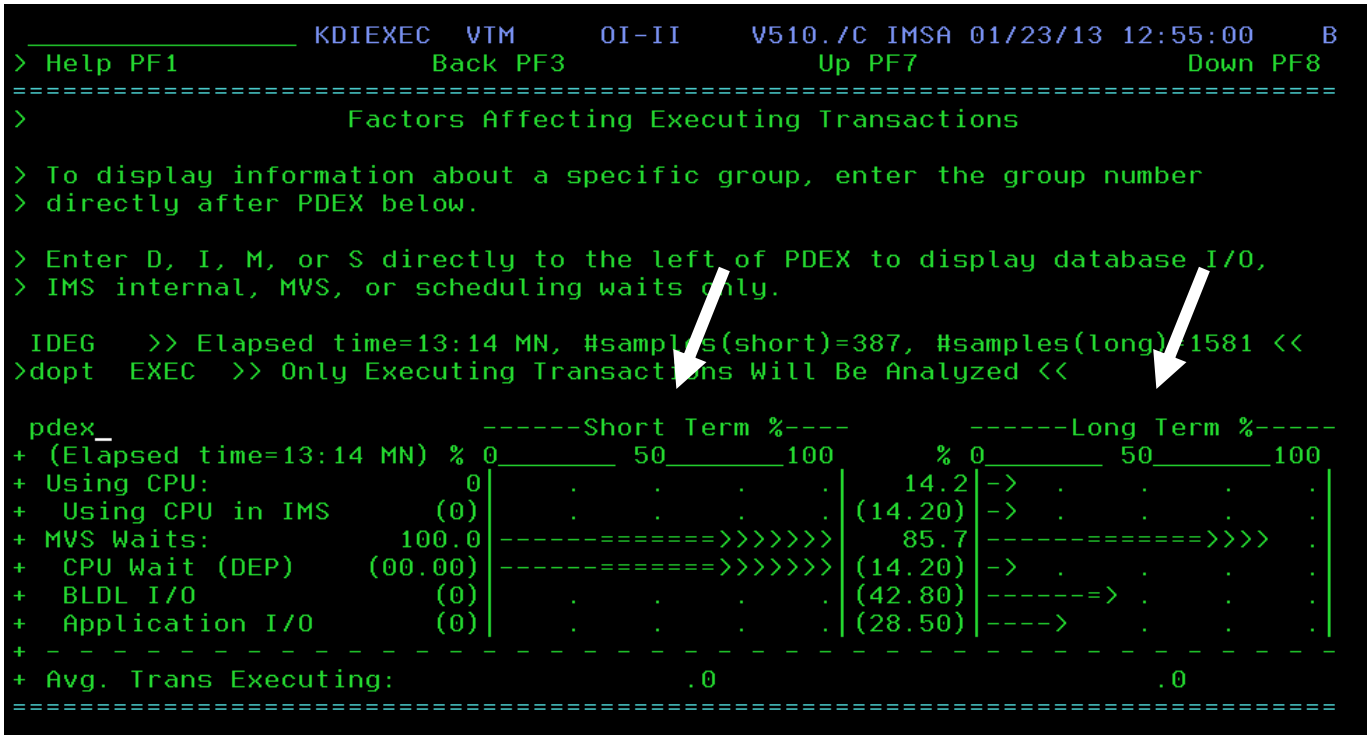
From the ZMENU main panel**,** **Position the cursor** on the command line (upper left corner of the panel). Enter **B** and **Press Enter.**



You are now looking at the Bottleneck analysis selection panel. From here you may look at either executing (work actively running) workload or competing (work that is either running or waiting to run) workload. In this example we will look at executing workload.

b) View Bottleneck analysis of excuting IMS workload

Position the cursor on the command line (upper left corner of the panel). Enter **A** and **Press Enter.**



You are now looking at the Bottleneck analysis executing workload display (IDEG major command and pdex minor command). This display shows an analysis of the workload running in the IMS subsystem, and as in the example above will show the major workload wait reasons by percentage.

NOTE – Depending upon what is happening on the overall system you may or may not see information similar to the above example.

The above example screen shot shows the major wait reasons for the IMS workload for both the short term (5 minute) and long term (30 minute) interval. Here you can see that in the short term the main wait reason has been for CPU cycles for the dependent (meaning the message processing) region. In the longer term the workload is waiting for I/O along with CPU waits. Each of these waits is broken down by percentage of the overall wait time. Once you know where a workload is waiting you may have an insight into where you need to tune.

Press F3 and then **Press F3** one more time to return to the ZMENU.

This concludes Scenario 2 of the OMEGAMON IMS lab.

2.3 Analysis of queued transactions

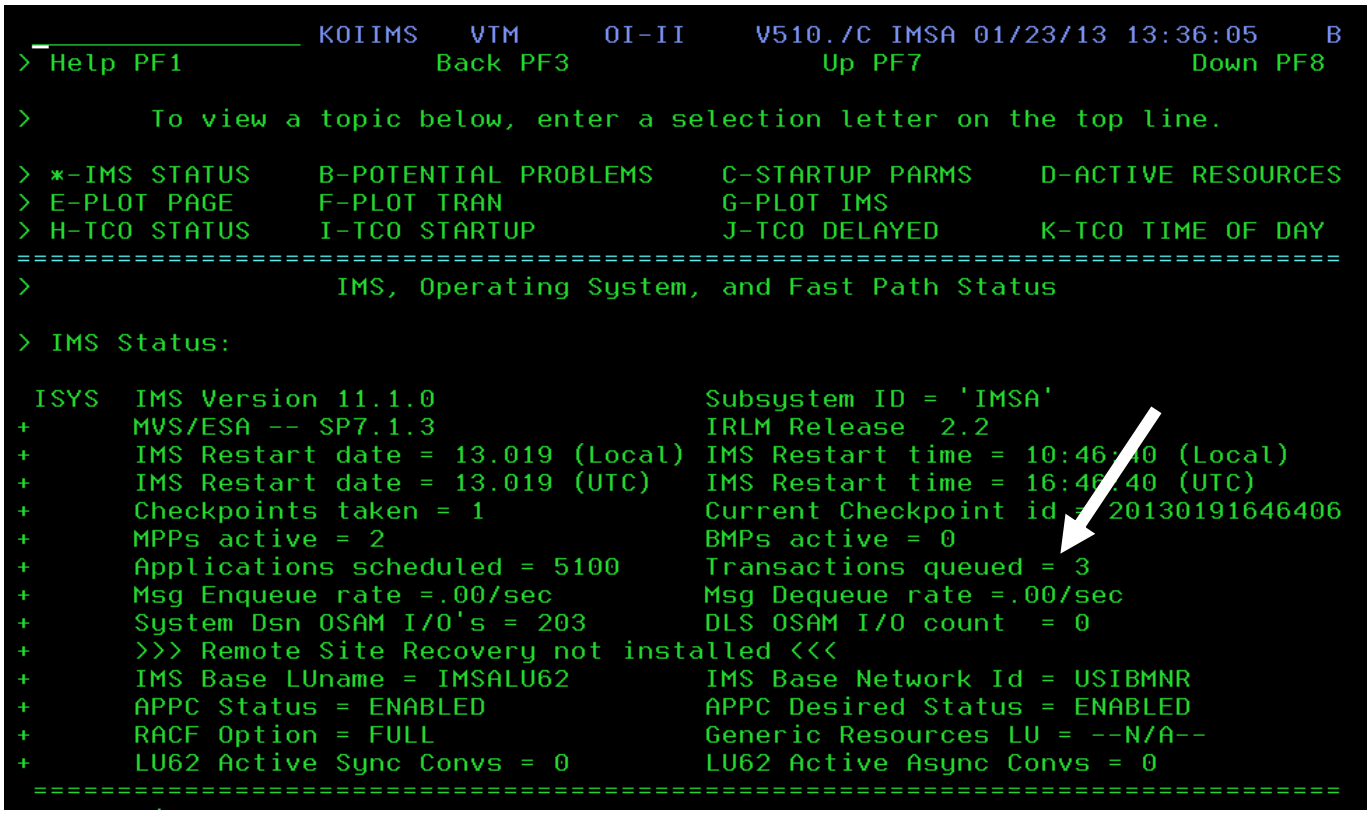
Scenario 3 continues to explore the Classic 3270 interface details. This lab will explore how OMEGAMON for IMS allows the user to identify, display and analyze queued transactions.

Identification Of Queued Transactions

In this scenario you will see how to quickly identify transaction queue activity in an IMS subsystem.

a) From the ZMENU main menu drill down to see IMS status information

Position the cursor on the command line (upper left corner of the panel). Enter **M** and **Press Enter.**

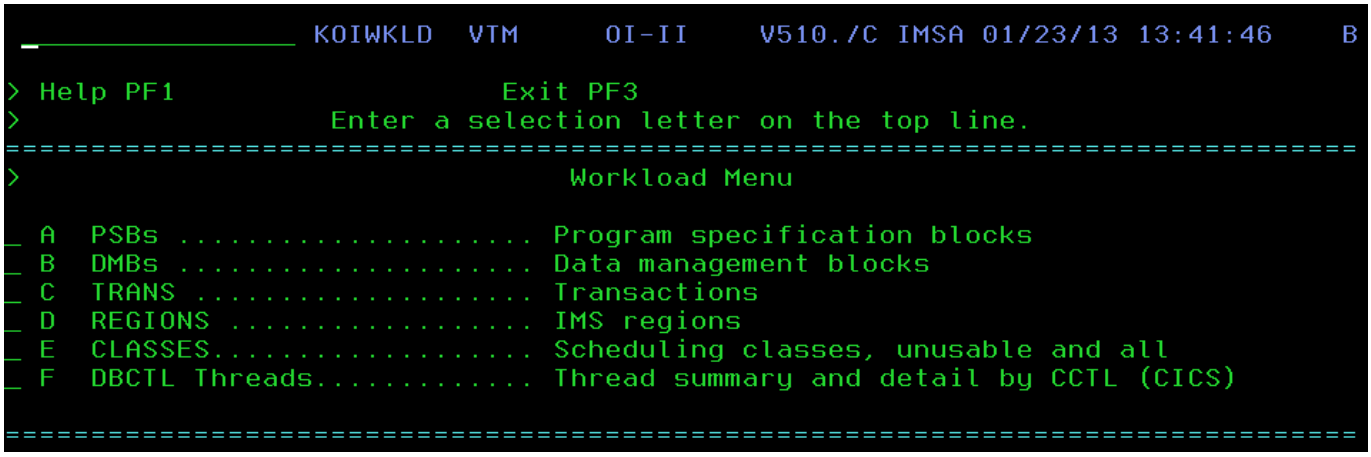


You are now looking at the IMS Status display. You were looking at this display earlier in the lab. From here you can see if IMS transactions are queued. Look in the middle of the ISYS command output where the screen says “Transactions queued”. In the above example note that transactions are currently queued on the system.

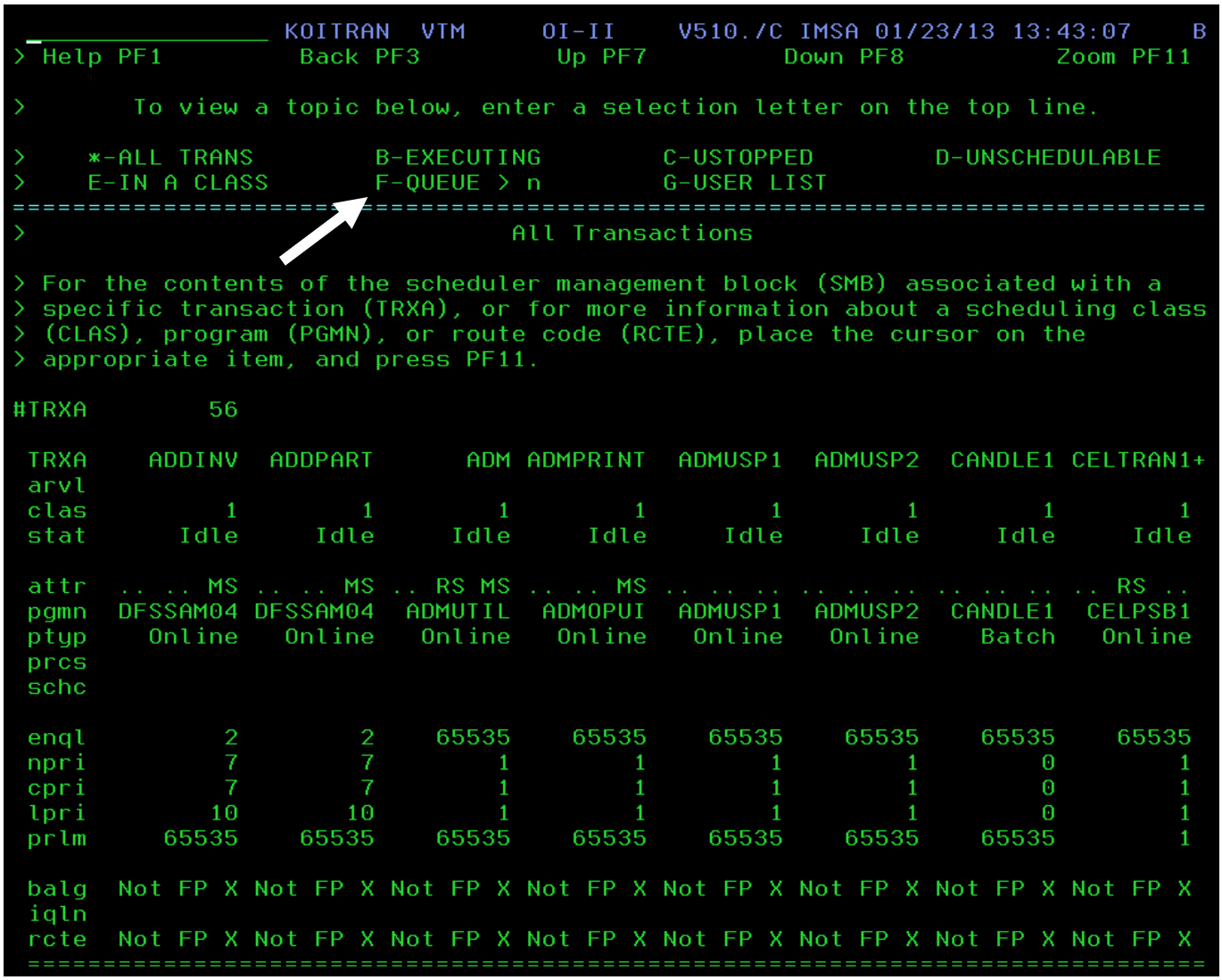
Now that you have determined that transactions are queued on the subsystem, **Press F3** to return to the ZMENU main menu.

b) Determine what transactions are queued

Position the cursor on the command line (upper left corner of the panel). Enter **W** and **Press Enter.**



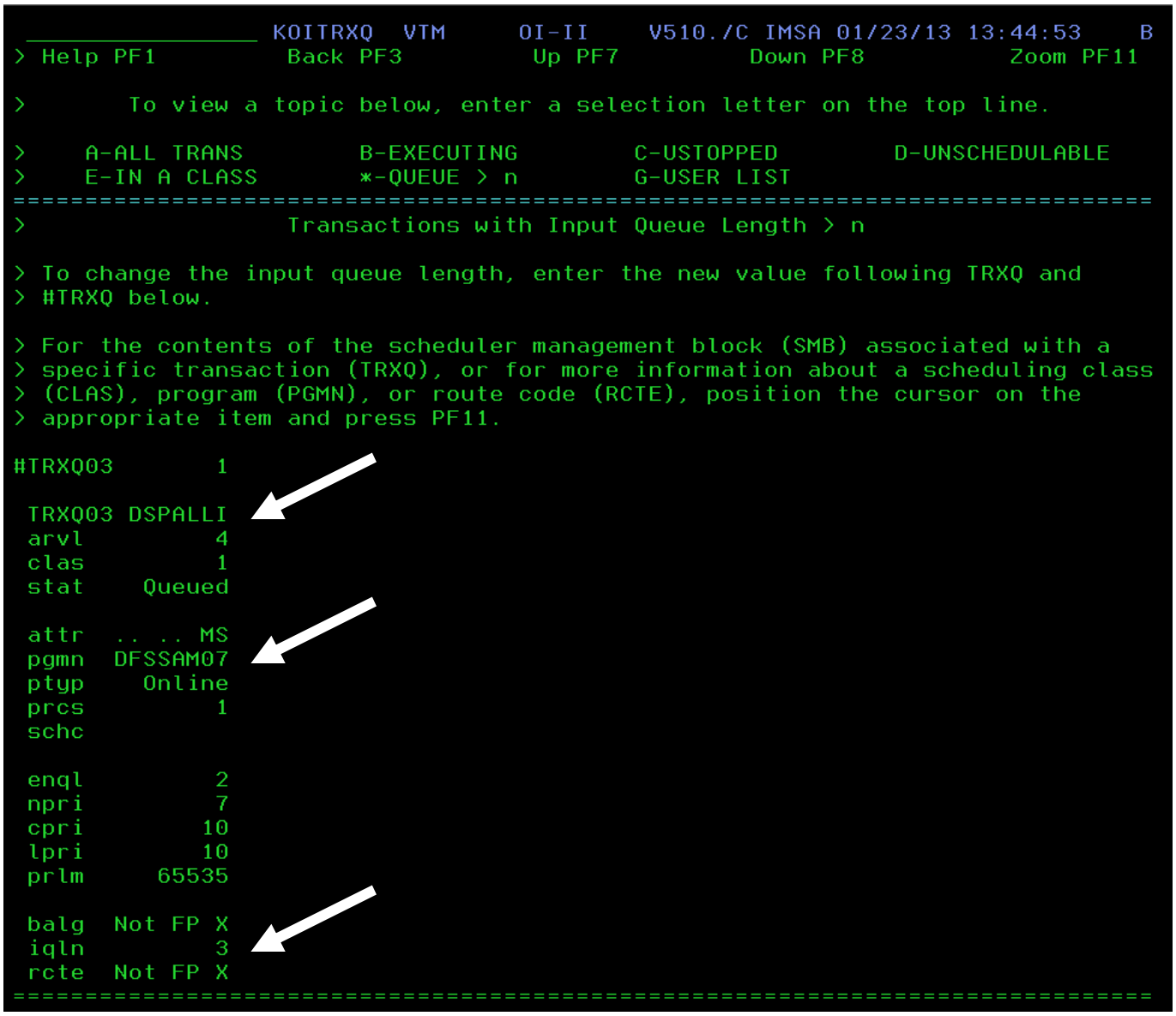
From the Workload Menu **position the cursor** on the command line (upper left corner of the panel). Enter **C** and **Press Enter.**



You are now looking at transaction display. From here there are various letter commands to view transactions by status (such as transactions executing, transactions stopped, or transactions queued).

c) See what transactions are queued

To see transactions that are queued, **position the cursor** on the command line (upper left corner of the panel). Enter **F** and **Press Enter.**

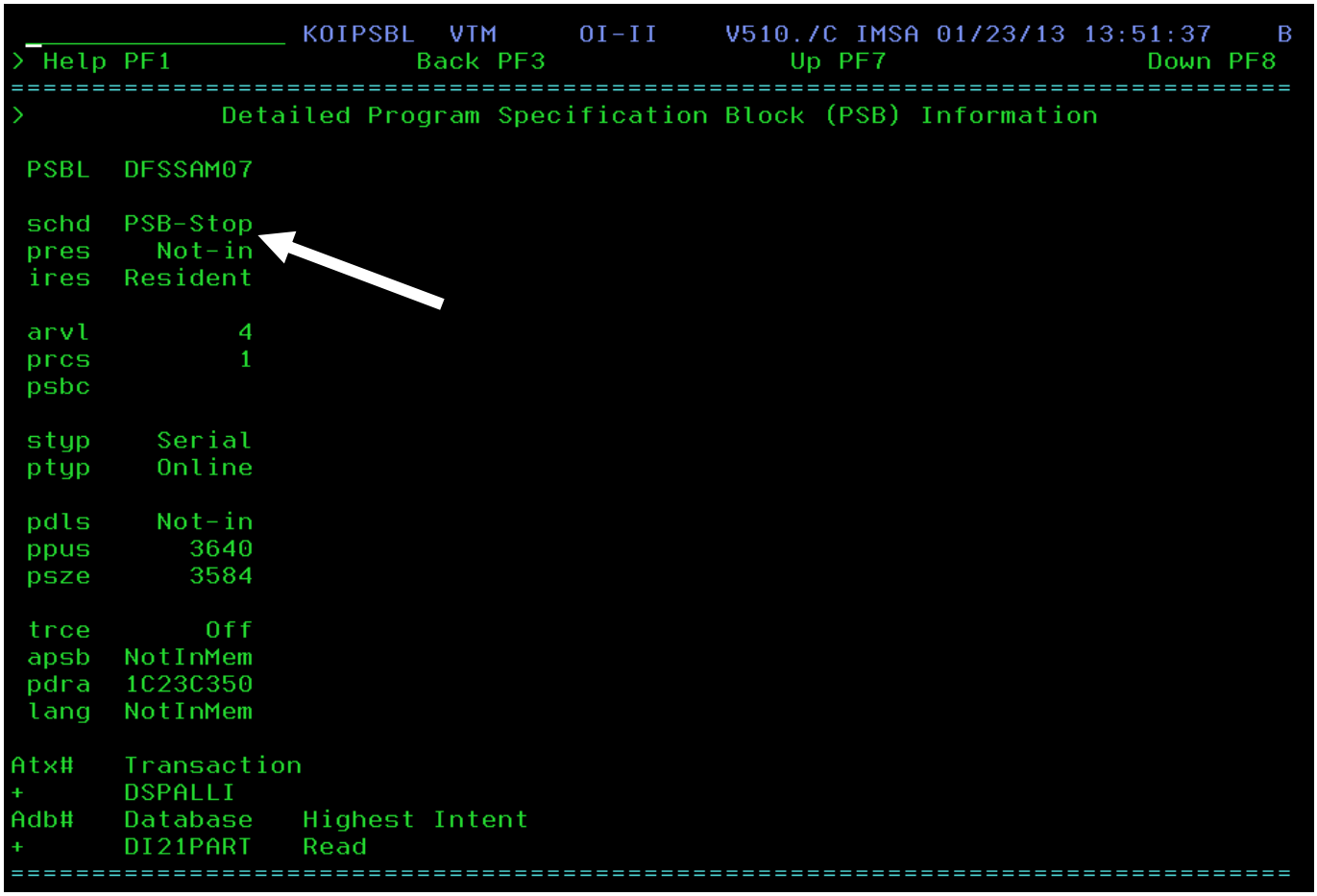


You are now looking at the display that shows each transaction that is queued in the IMS subsystem. In the above example we see one queued transaction (DSPALLI), and we see that there is a queue depth of 3 (look next to the iqln minor command). We also see that the program for this transaction is DFSSAM07.

d) Drill down to see program status for the transaction

From this display you may use an F11 drill down for additional information. For example, to see program information, **position the cursor** directly on the program name (in this example DFSSAM07) and **Press F11.**

Note – when doing F11 drill downs the postion of the cursor is very important.



You are now seeing the status of the program that pairs with the queued transaction, DSPALLI. In the above example we see that the program is in a PSB-Stop status.

To address the issue you could issue IMS commands to start the PSB. Note – for security reasons we will not be issuing commands in this lab.

Press F3, **Press F3** again, then **Press F3** one more time to return to the ZMENU main panel.

You have now completed Scenario 3 of the OMEGAMON IMS module.

2.4 How to view IMS application trace information

Scenario 4 continues to explore the Classic interface details. One of the powerful features of the Classic interface is the OMEGAMON IMS application trace facility. The OMEGAMON IMS application trace facility is able to capture traces of IMS application executions, and retain this detailed information fo later analysis. The application trace includes details on application elapsed and CPU time, IMS DL/I call, and if relevant DB2 and MQ call details.

This scenario will explore how to navigate within OMEGAMON to use the application trace function.

Look at OMEGAMON IMS trace information

a) From the ZMENU main panel drill down to see Application trace information

Position the cursor on the command line (upper left corner of the panel). Enter **H** and **Press Enter.**

```
 _________________ KOINTAT  VTM     OI-II    V510./C IMSA 01/23/13 13:58:30    B
> Help PF1                Back PF3
>
>                 Enter a selection letter on the top line
================================================================================
>                         TRANSACTION HISTORY MENU

_ A  APPLICATION TRACE. . . Control and display application traces
_ B  JOURNAL FACILITY . . . View/Start 64-bit Journal Facility

================================================================================
```

From this panel you can either navigate to the trace or view the journal logging faciity. The journal logging facility (JLF) is a data capture facility used by the trace to capture and store trace information. JLF will not be covered in this lab exercise, but feel free to explore it if you wish.

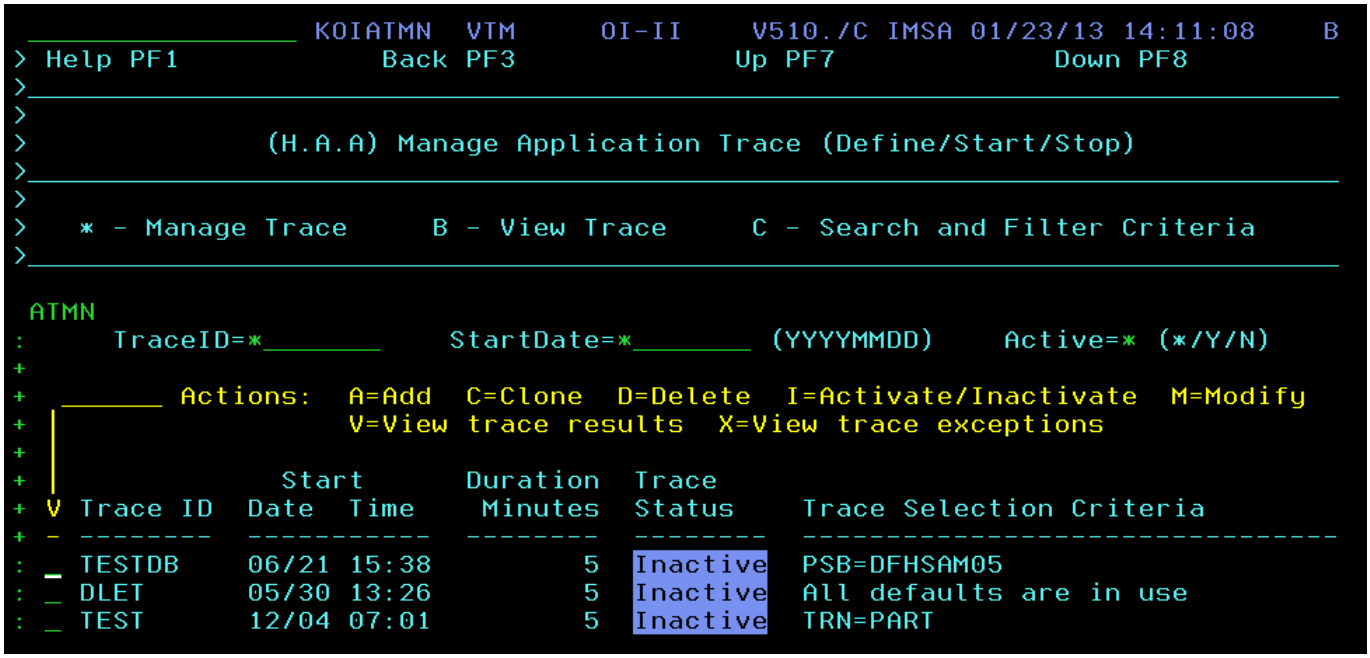
To see the application trace main panel, **position the cursor** on the command line (upper left corner of the panel). Enter **A** and **Press Enter.**

```
 _________________ KOIATF   VTM     OI-II    V510./C IMSA 01/23/13 14:04:52    B
> Help PF1                Back PF3
>
>                 Enter a selection letter on the top line
================================================================================
>                      APPLICATION TRACE FACILITY MENU
> ADMINISTRATION:
_ A  MANAGE TRACES. . . . . Manage application trace requests

> TRACE RESULTS:
_ B  VIEW . . . . . . . . . View trace details by Group
_ C  GROUP/FILTER . . . . . Specify Group/Filter criteria

> TRACE EXCEPTION RESULTS:
_ D  VIEW . . . . . . . . . View trace exceptions
_ E  GROUP/FILTER . . . . . Specify Group/Filter criteria

> JOURNAL FACILITY STATUS:
_ F  I2ATF. . . . . . . . . View Trace Journal Status
_ G  I2ATX. . . . . . . . . View Trace Exception Journal Status

================================================================================
```

You are now looking at the Application Trace Facility (KOIATF) main panel. From here you may go to various panels to manage (stop or start) or view application traces. Note that you have the ability to trace and to also specify exception based traces (only trace applications that meet certain criteria).

b) View application trace status

From the KOIATF panel, **position the cursor** on the command line (upper left corner of the panel). Enter **A** and **Press Enter.**



You are now looking at the panel used to define, start, and stop IMS application traces. You will not be actively running traces in this lab, but you will be able to see and analyze trace output.

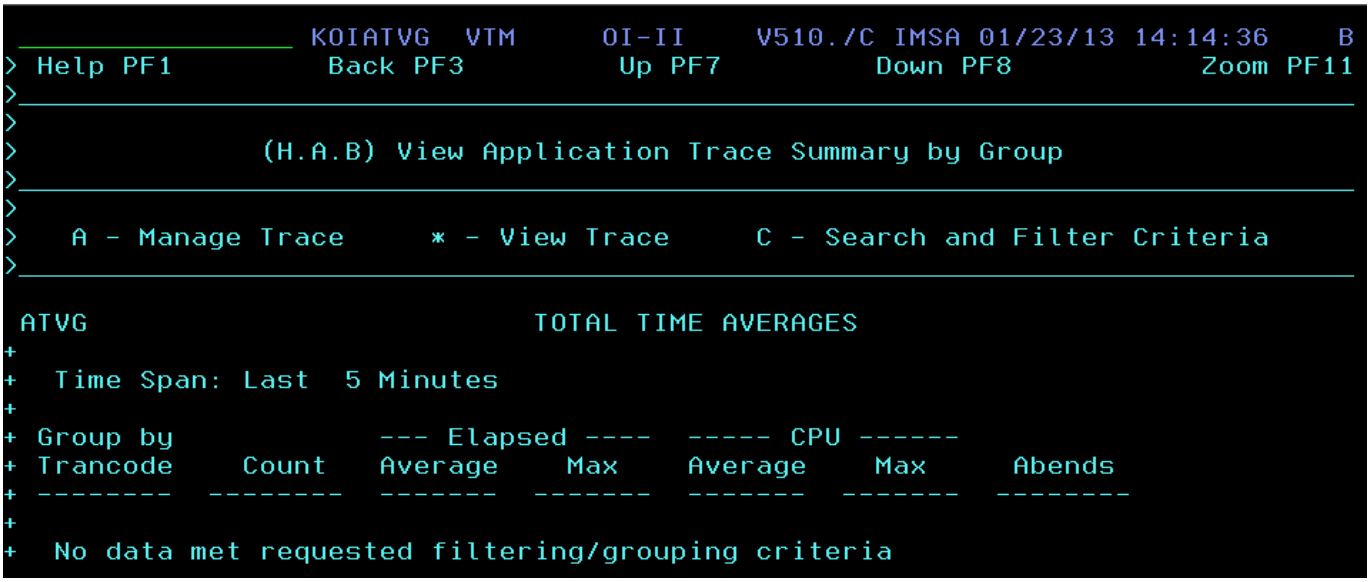
From this panel you can add a definition for a new set of trace settings. Once defined, a new trace will be recalled by OMEGAMON each time you logon. You can specify traces based upon a set of criteria, including elapsed time, CPU time, transaction code, program and much more.

Press F3 to return to panel KOIATF.

c) View trace information

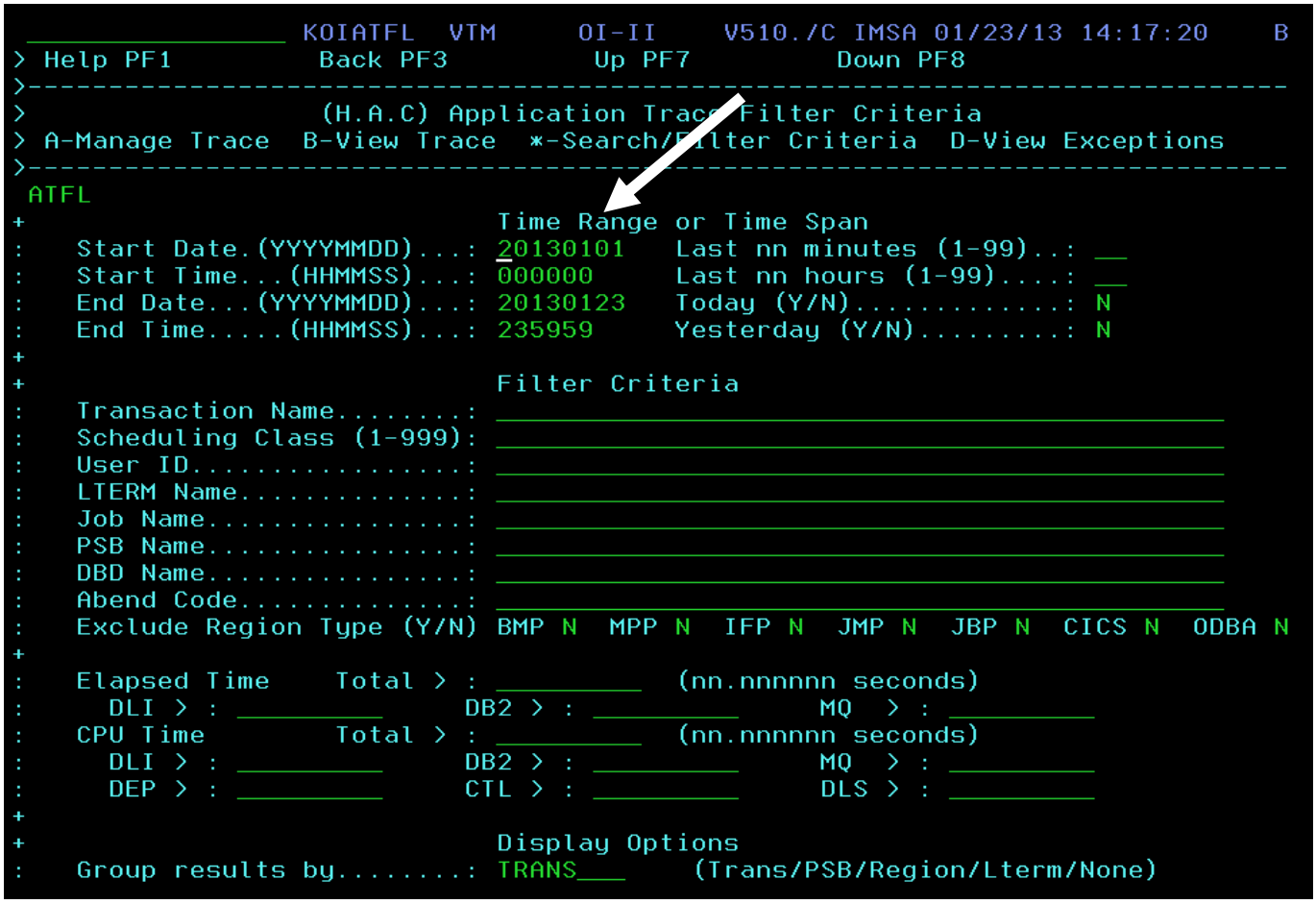
Once a trace is captured it will be retained within the journal logging facility (JLF). To see trace data within the JLF you may perform the following procedure.

Position the cursor on the command line (upper left corner of the panel). Enter **B** and **Press Enter.**



You will probably not see any trace information initially. To see trace information you will want to specify the trace search and filter cirteria. That is where you would specify such information as the date/time criteria for the desired trace data.

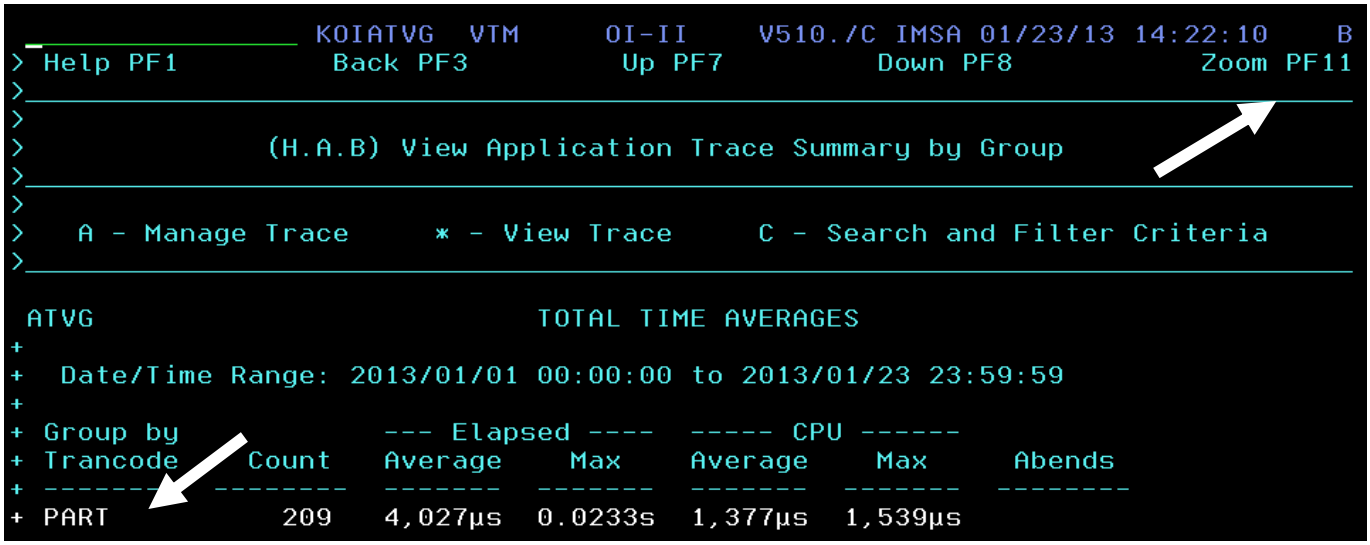
Position the cursor on the command line (upper left corner of the panel). Enter **C** and **Press Enter.**



You are now looking at the filter criteria display. You can use this panel to filter and view trace data by a variety of criteria (such as tran code, job name, CPU or elapsed time greater than ‘n’, and date/time).

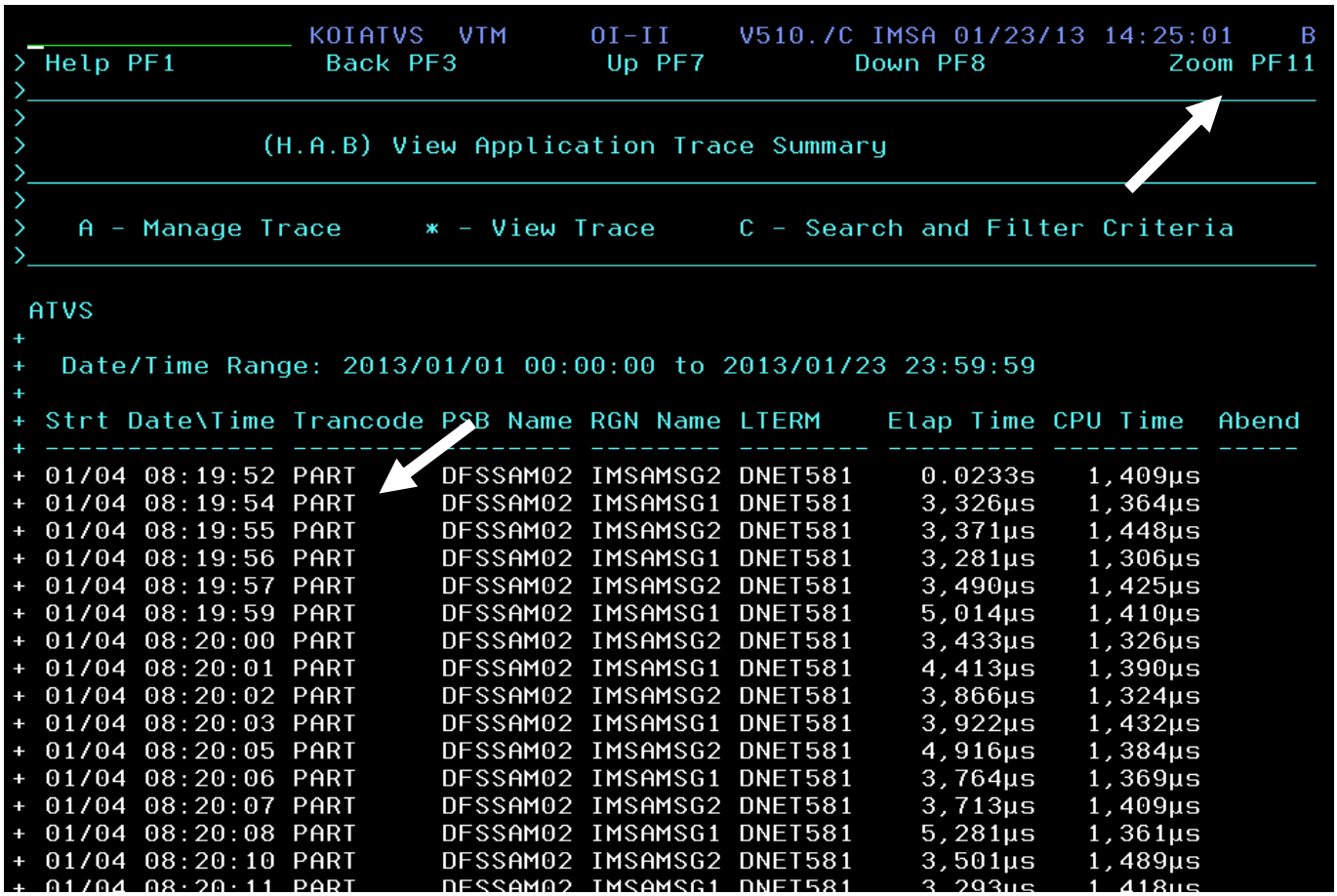
Position the cursor in the Start date field**, enter 20130101** and **Press Enter**. This will allow the facility to pull up prior trace information.

Position the cursor on the command line (upper left corner of the panel). Enter **B** and **Press Enter.**



You should now see transactions listed that have been traced and meet the search criteria. In the above example you see that 209 PART transactions meet the search criteria and have been traced.

To see details on the transactions, **position the cursor** on the transaction code and **press F11**.



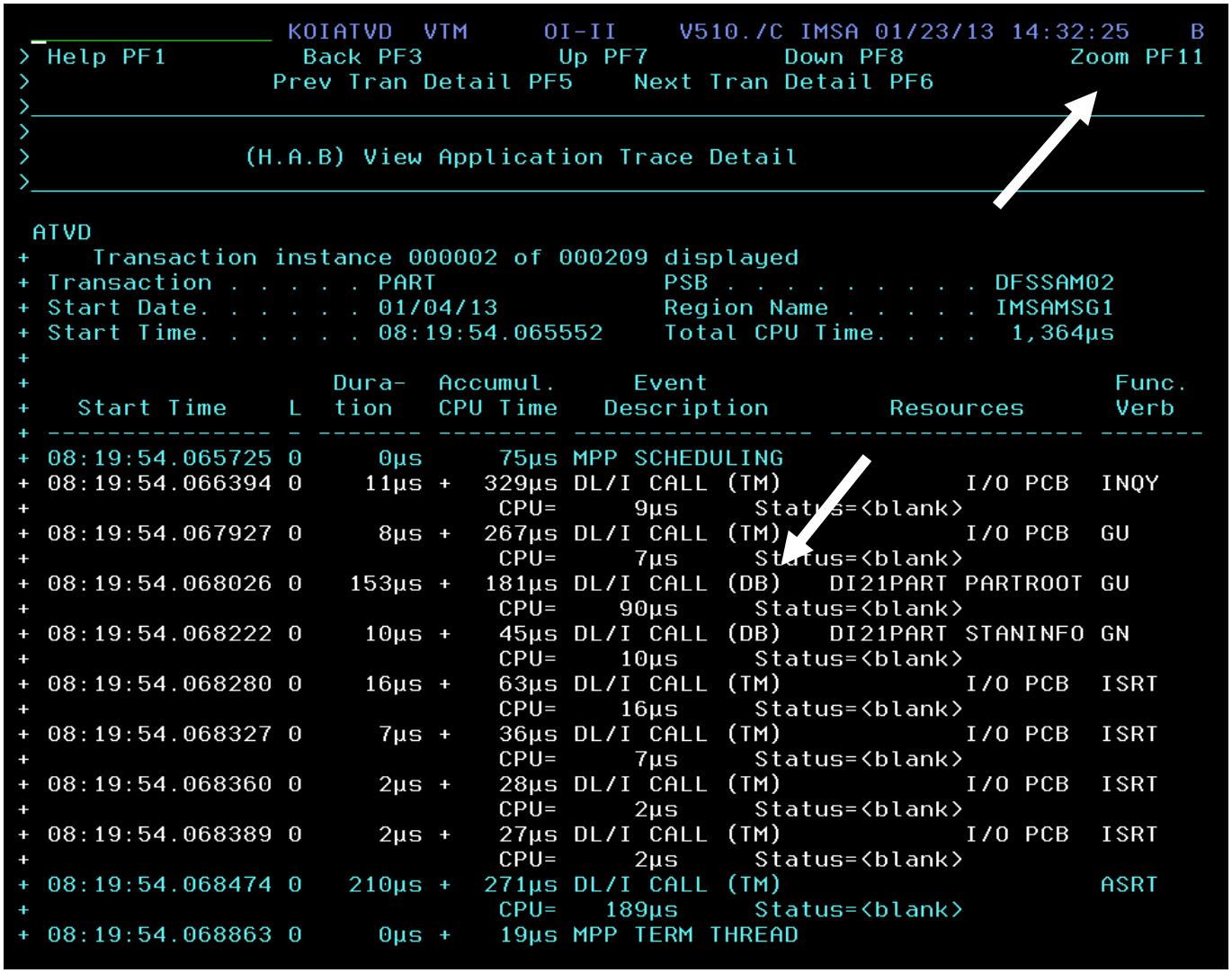
You are now looking at the transaction that were traced by the Application Trace facility. Each line represents an individual execution of the transaction (in this example the PART transaction). From here you can drill down to see detail on a specific transaction.

For transaction detail, **position the cursor** on a specific transaction and **press F11**.

```
                 KOIATVW  VTM     OI-II    V510./C IMSA 01/23/13 14:28:25    B
> Help PF1          Back PF3         Up PF7         Down PF8          Zoom PF11
>                Prev Tran Detail PF5    Next Tran Detail PF6
>_____________________________________________________________________________
>
>              (H.A.B) View Application Trace Overview
>_____________________________________________________________________________

 ATVW
+    Transaction instance 000002 of 000209 displayed
+ Transaction . . . . . PART              PSB . . . . . . . . . DFSSAM02
+ Logical Terminal. . . DNET581           Transaction Class . . 001
+ Region Type . . . . . MPP               Message Source. . . . TERM
+ Region Number . . . . 3                 Primed Message. . . . YES
+ Job Name. . . . . . . IMSAMSG1          Quick Schedule. . . . NO
+ Step Name . . . . . . REGION            Current SPA Size. . . N/A
+ UserID. . . . . . . . DNET581           Abend Code. . . . . .
+ Start Date. . . . . . 01/04/13          CPU Time in DEP . . .  1,364µs
+ Start Time. . . . . . 08:19:54.065552      CPU Time in DL/I. .    332µs
+ End Time. . . . . . . 08:19:54.068879      CPU Time in DB2 . .      0µs
+ Elapsed Time in DL/I.    419µs             CPU Time in MQ. . .      0µs
+ Elapsed Time in DB2 .      0µs           CPU Time in CTL . . .      0µs
+ Elapsed Time in MQ. .      0µs           CPU Time in DLS . . .      0µs
+ Elapsed Time Total. .  3,326µs           CPU Time Total. . . .  1,364µs
+
+                                        Total            Average
+  Event      Type         Count        Duration         Duration
+  -----      --------     --------   --------------   --------------
+  DLI TM     INQY              1            11µs             11µs
+  DLI TM     GU                1             8µs              8µs
+  DLI DB     GU                1           153µs            153µs
+  DLI DB     GN                1            10µs             10µs
+  DLI TM     ISRT              4            28µs              7µs
+  DLI TM     ASRT              1           210µs            210µs
```

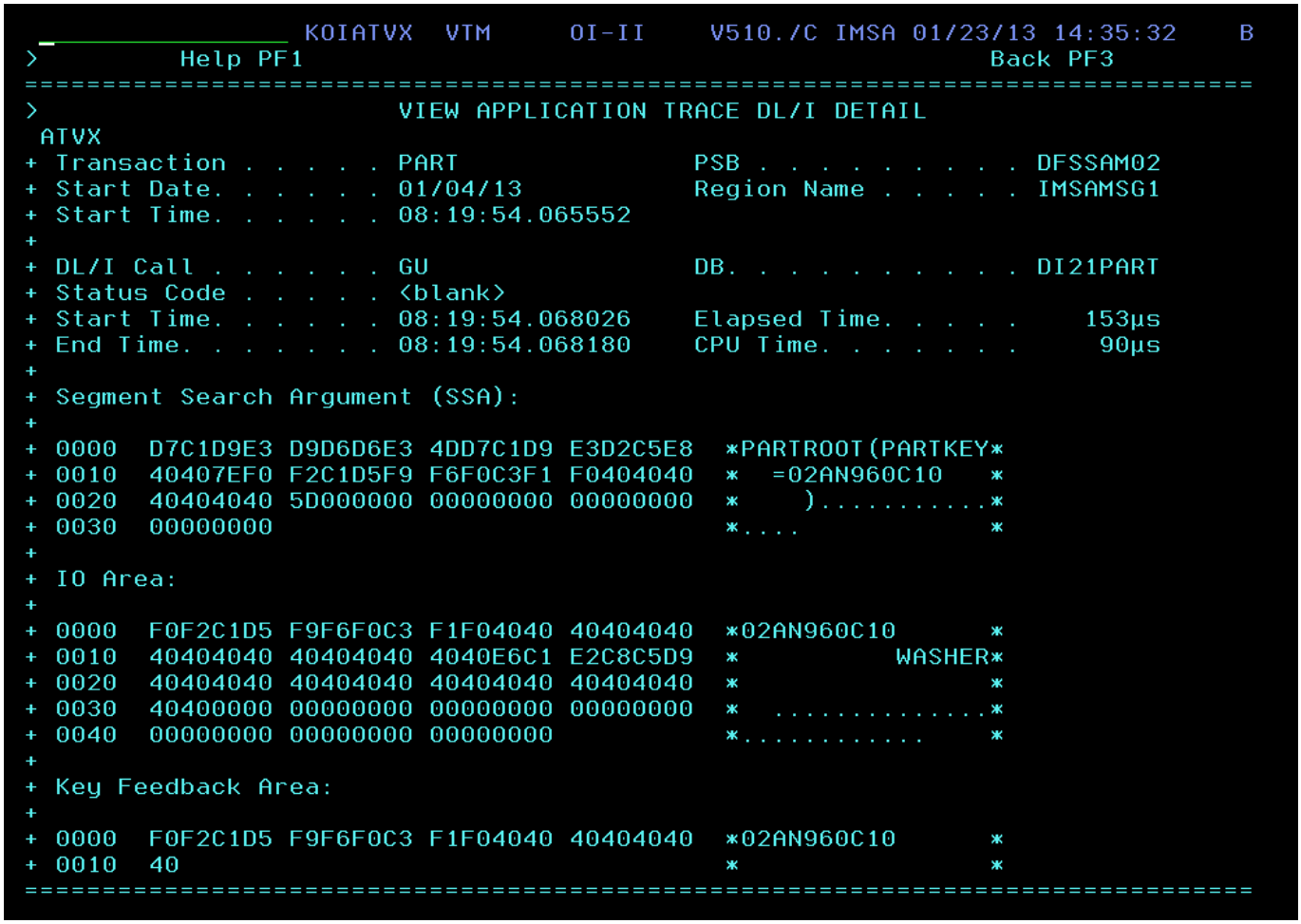
You are now looking at the trace overview detail for a specific transaction execution. From here you can see elapsed time and CPU time details for the transaction. You also see the number of calls invoked by the application by type, and the elapsed times of those calls.

To see more DL/I call detail, **position the cursor** on the call type and **press F11**.



You are now looking at the trace call detail overview display. From here you can see the calls in sequence, and see the timings of the various calls. This example show just DL/I calls, but if this application had done DB2 or MQ calls, these calls would appear as well.

To see more detail on a specific call, **position the cursor** on the call and **press F11.**



You are now looking at the call detail for a specific IMS call in the IMS transaction trace. From here you can see SSA information, the key feedback area, and the call IO area.

This concludes the final scenario of the OMEGAMON IMS Classic interface lab.

Congratulations! You have completed the OMEGAMON IMS Classic interface lab.

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Date of Revision	Number	Completed by	Revision Log
9/10/2014	V16.0	Ed Woods	Principal author Lab design and lab document creation Combined e3270 and classic into one doc
9/19/2014	V510	Lih Wang	Edits for Enterprise2014 conference lab session

NOTES

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