Discovering OMEGAMON

Volume 1

Enhanced 3270 User Interface

e3270ui Introduction, OMEGAMON z/OS V5.3, and OMEGAMON CICS V5.3

IBM

Contents

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 OMEGAMON Enhanced 3270 User Interface Introduction

Introduction

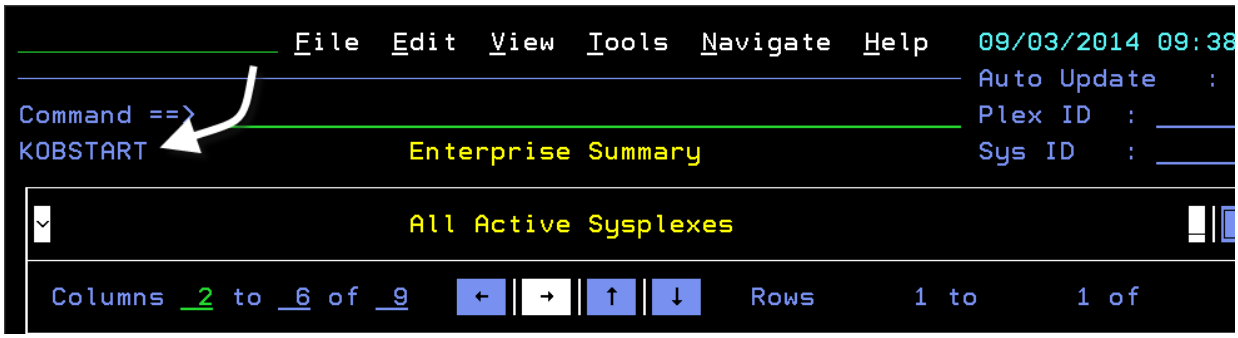
This lab exercise will demonstrate how to navigate and use some of the primary features of the OMEGAMON XE V5.x enhanced 3270 user interface. In this lab exercise, the user will perform a series of scenarios focused on the following:

- How to navigate the e3270 User Interface
- How to get online help
- How to perform drill down analysis

1.1 Logon to e3270ui

a) Follow the logon instructions provided by the lab instructors.

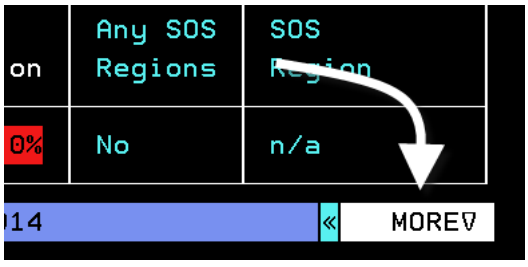
b) You should begin all lab exercises at the KOBSTART panel (see below). The panelid will appear on the upper left corner of the display.



1.2 Navigation and Scrolling

You are looking at the start panel for the e3270 ui (panelid KOBSTART). This panel contains overview information for the various agents, such as CICS, z/OS, DB2, and MQ that appear within the enhanced 3270ui. From here you may scroll, filter, or drill down for additional information. There are several methods for drill down and analysis that will be demonstrated as part of this lab exercise.

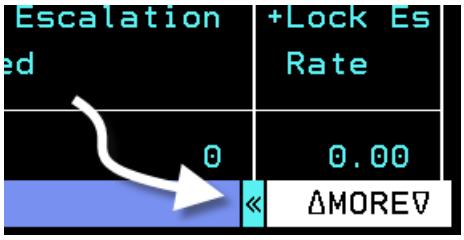
a) From the KOBSTART panel you may notice a symbol in the lower right corner that indicates MORE. This means that you may scroll the panel to see additional information.



Note - The KOBSTART panel shows information from multiple agents

To see information from the various agents (z/OS, CICS, IMS, DB2, Networks, Messaging, and Storage) available within the enhanced 3270ui you may need to scroll the KOBSTART panel

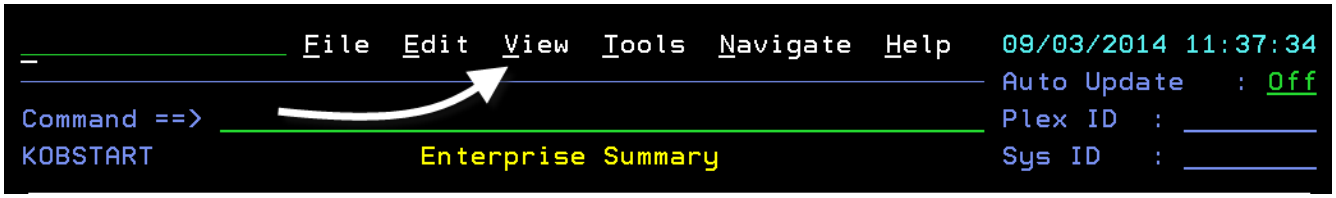
b) **Press F8** to scroll the KOBSTART panel. You will now see information from the additional OMEGAMON agents that are available at the KOBSTART panel.



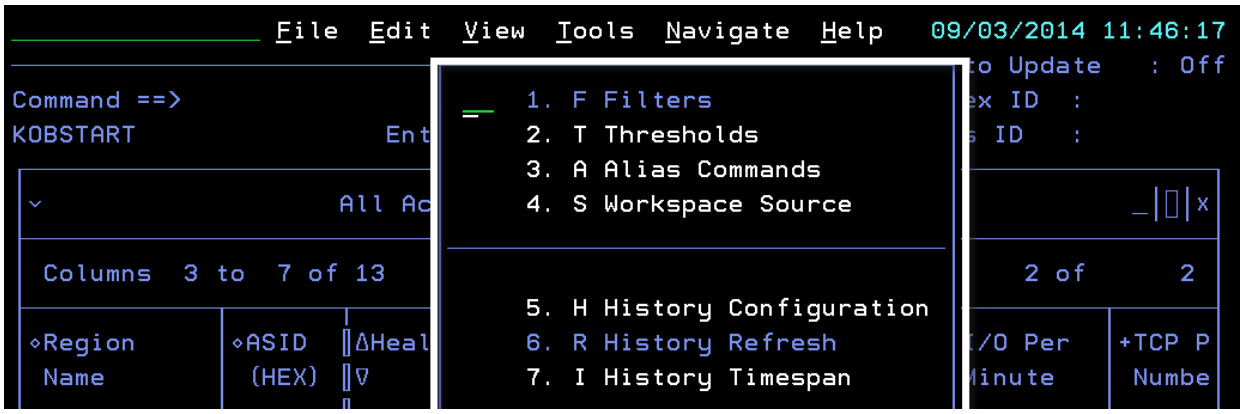
Also, notice that the MORE indicator on the lower right portion of the panel may now show both an up and down arrow indicating how you may scroll the panel.

c) When you are finished reviewing the contents of the KOBSTART panel, **Press F7** to return to the top of KOBSTART.

Next, look at the tool bar at the top of the e3270ui.



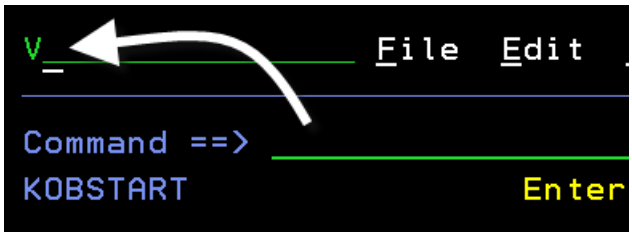
d) If you **tab to VIEW** and **Press Enter** you will see the following drop down menu.



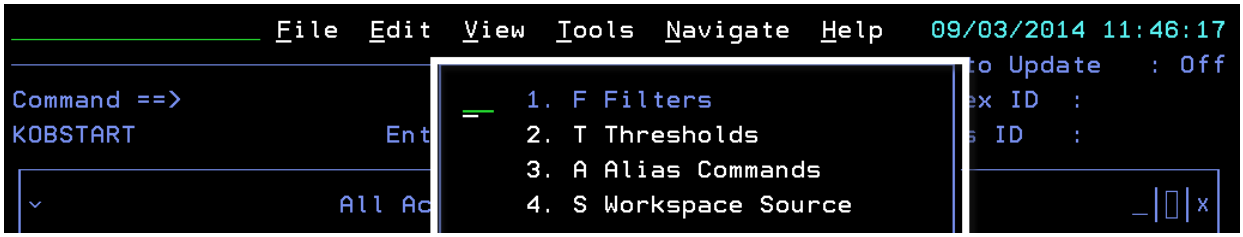
e) There are multiple options on this drop down. Some of the more interesting options include option S to see the actual source code for the panel, option T to see the threshold members that control high-lighting on the panel, and option H that controls the history collection options.

Press F3 to remove the drop down menu.

f) Now, in the underscore area in the upper left, **enter V** and then **Press Enter**.

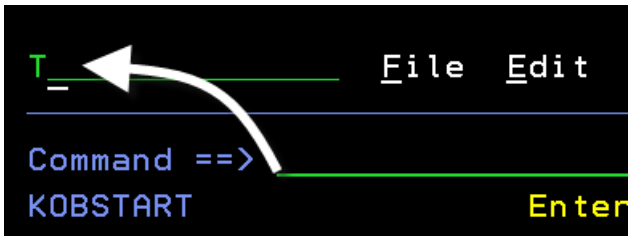


Notice the same result (you will again get the View drop down).



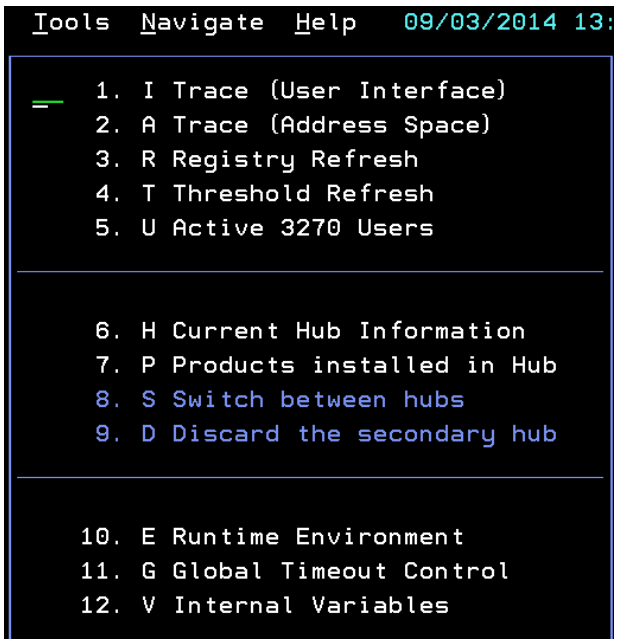
Now that you have seen both ways to access drop down menus, **Press F3** to remove the drop down menu.

g) Next, view the Tools option on the tool bar. In the underscore area **enter T** and **Press Enter.**



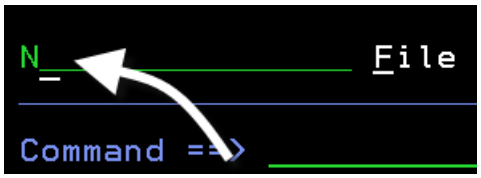
You are now looking at the Tools drop down menu.

The Tools drop down menu provides several options to view the monitoring configuration and monitoring options.

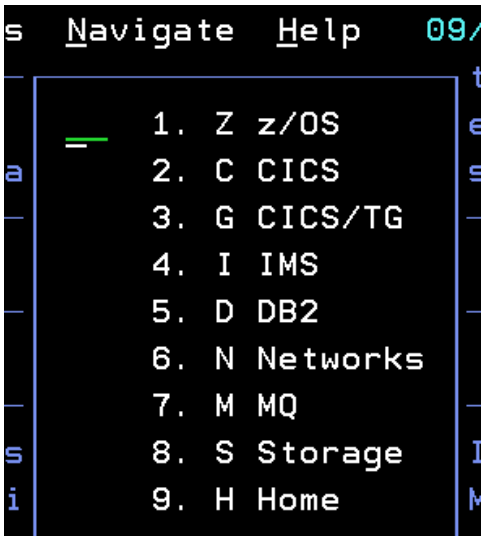


Press F3 to remove the drop down menu.

h) In the underscore area **enter N** and **Press Enter**

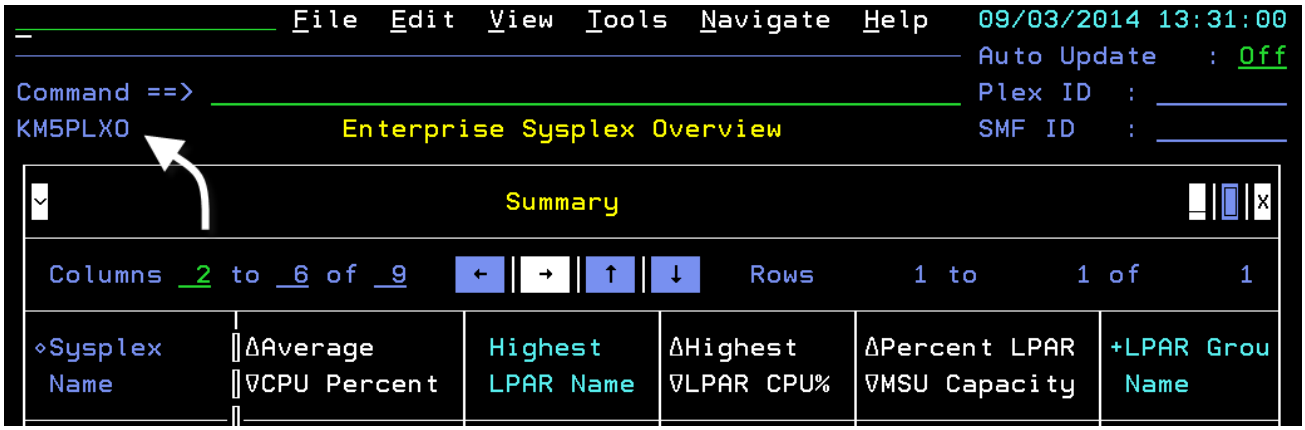


You are now looking at the navigation drop down menu. The navigation drop down menu provides you a convenient method to navigate between the various installed OMEGAMON monitoring tools.



i) In the underscore area **enter Z** (for z/OS) and **Press Enter**

You are now looking at the KM5PLXO panel for OMEGAMON z/OS.



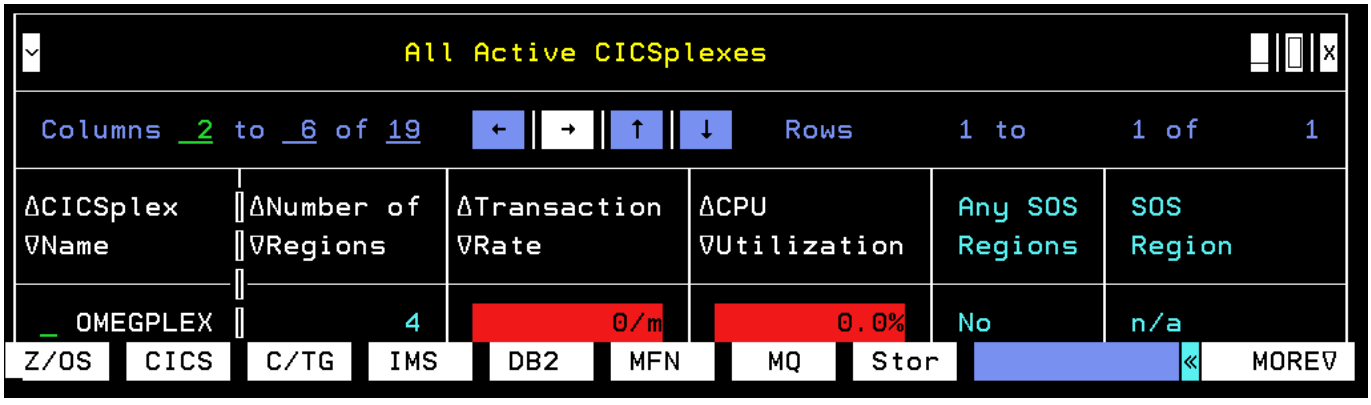
j) To navigate back to KOBSTART, in the underscore area **enter N.H** and **Press Enter**

You should now be back to the KOBSTART panel. If you wish, you may try using the navigate tool bar option to go to other monitoring panels. When finished, please return to KOBSTART.

There are additional techniques to navigate through the interface.

k) From the KOBSTART panel **Press F9**

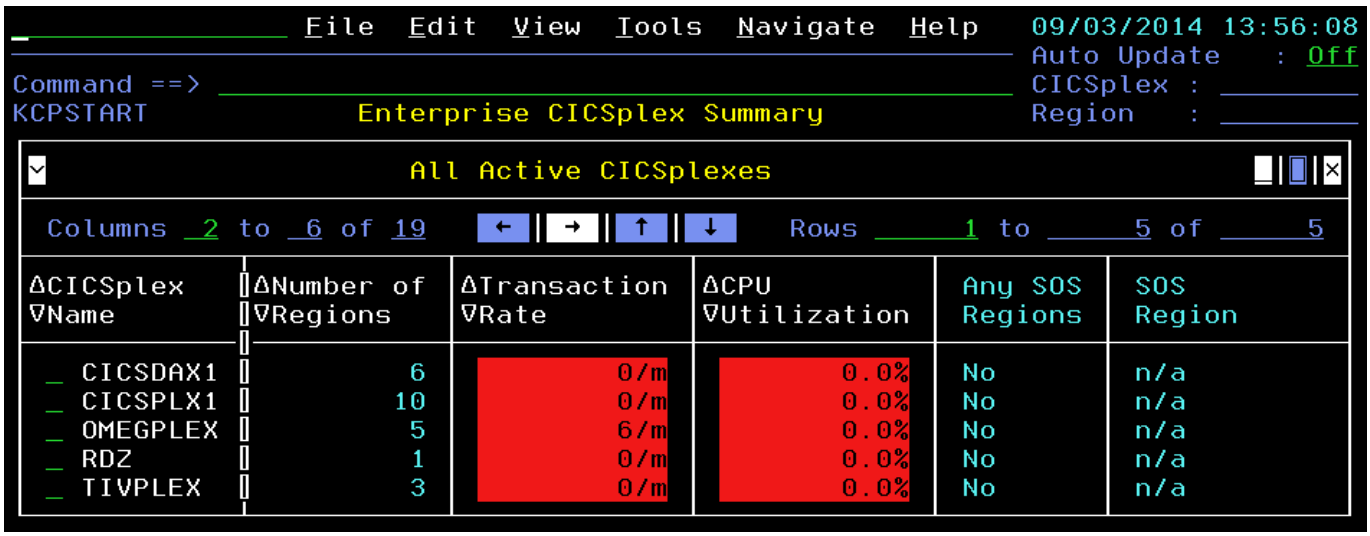
You should see navigation buttons appear on the bottom of the panel.



You may use these buttons to navigate to the various monitoring components in the tool.

l) **Position the cursor** on the CICS button and **Press Enter**.

You should be looking at the KCPSTART panel for OMEGAMON CICS.



m) **Press F3** to return to KOBSTART.

There is another technique to navigate to various monitoring displays within the e3270ui.

n) **Position the cursor** on the command line **Enter =kcpstart** and **Press Enter**

You will be looking at the KCPSTART panel again.

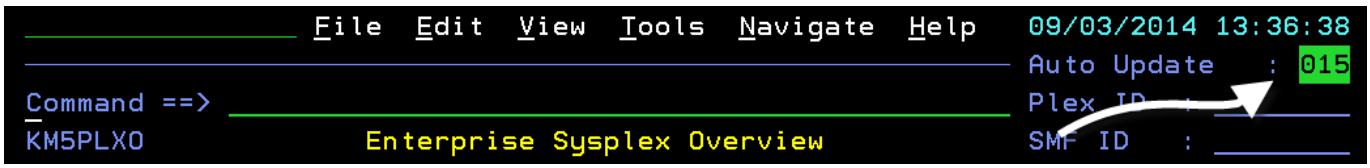
o) **Press F3** to return to KOBSTART.

1.2.1 Turn On/Off Auto-Update Mode

OMEGAMON enhanced 3270 ui supports the auto update function. Auto update will refresh the screen contents automatically based upon the specified time interval.

a) On the right portion of the tool bar you will see the Auto Update field. By default auto update is set to OFF.

b) Overtype the Auto Update field, **enter 15** and **Press Enter.** This will set the auto update interval to refresh the display every 15 seconds.

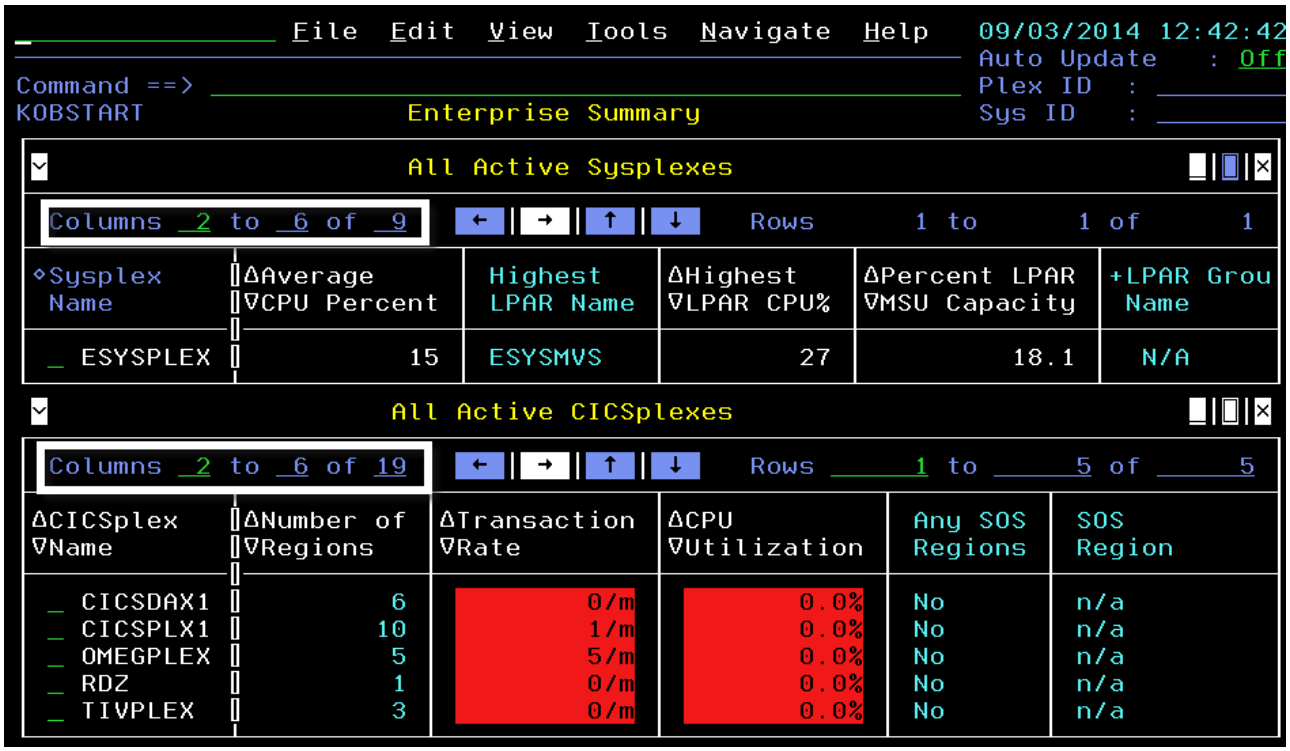


c) Wait for the interval you specified, and you should see the screen automatically update. (Once you've seen the auto update function work, it is suggested you **set Auto Update back to the OFF setting**).

1.2.2 Additional Control and Navigation options

You may scroll the contents of the panels from side to side to view more detail.

a) From the KOBSTART panel, **Press F11**. F11 is the shift right function key, and will shift the contents of the panel accordingly (notice the example below which is 24 X 80).

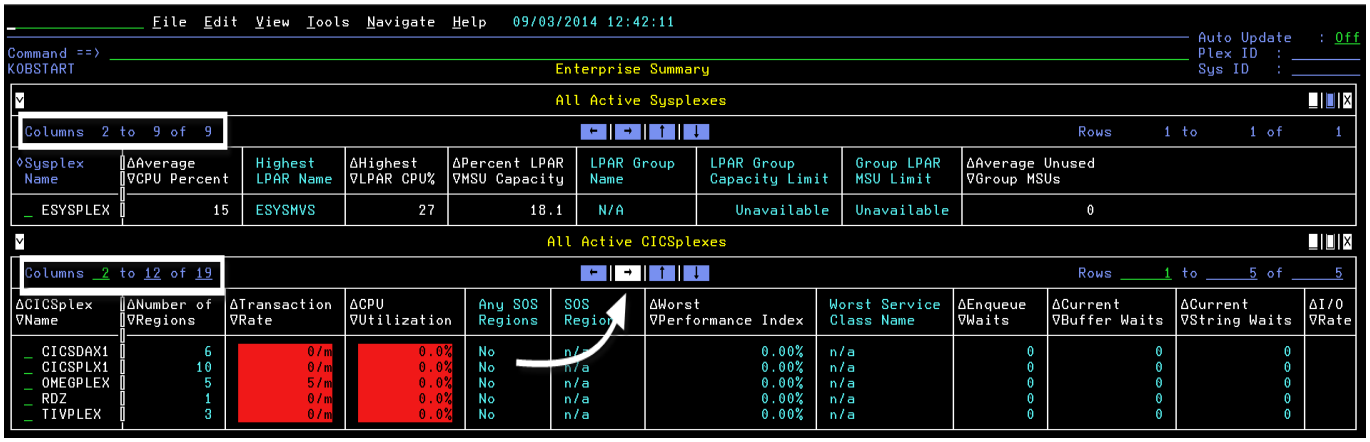


The e3270ui supports different screen widths

E3270ui may support various screen sizes and widths, including 80 character width up to 160 characters. Depending on the option chosen at logon (OMEGAMON versus OMEGAMON Widescreen), your selection will control the size of the screen displayed.

b) Notice the panel may scroll differently if you logged on with a wider format of panel (OMEGAMON Widescreen).

The following example shows KOBSTART with a wider (160 character width) session. If you look carefully, in the wide screen example below the z/OS information will not need to scroll since all z/OS relevant the information is already on the screen, but the CICS data will scroll (note how the arrows are highlighted).

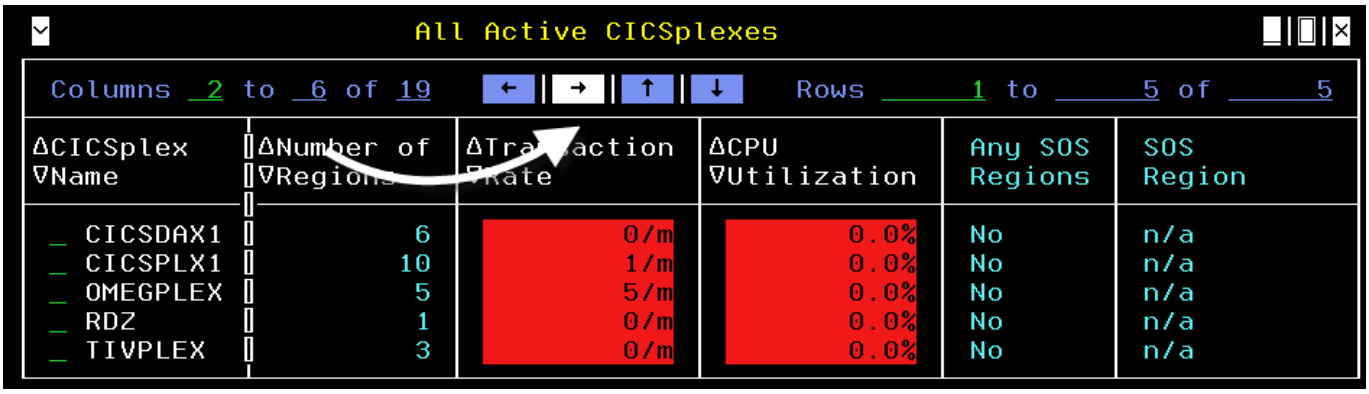


c) **Press F10** to shift the data back.

Notice again how the data will shift and the arrows will change depending upon your screen size.

The arrows on the panel also control panel scroll functions.

d) **Position the cursor on the arrow** pointing right in the CICSplexes portion of the menu, and **Press Enter**.



Notice how the CICS portion of the panel will shift.

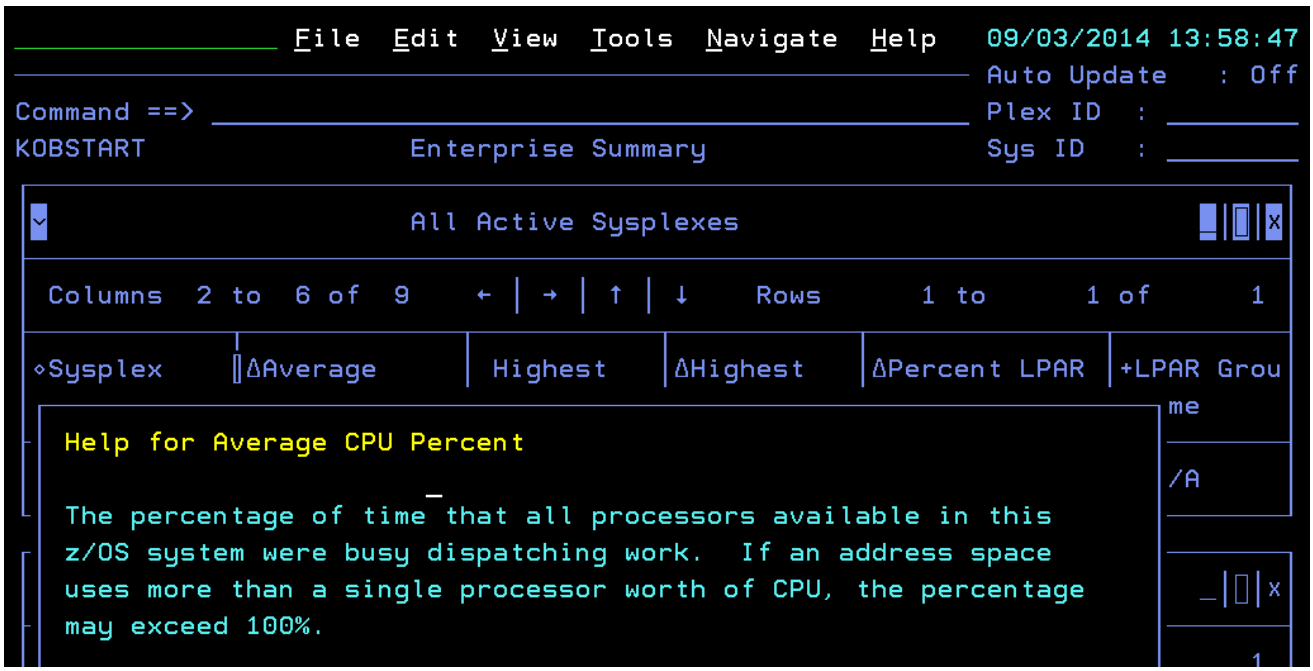
e) Once you've seen how the arrow function supports the side to side scrolling features, **Press F10** to scroll the entire KOBSTART panel back to the left.

1.3 Getting Help

There is extensive field level help contained within the e3270ui. To get help for a given field, position the cursor on the field and press F1 for help.

a) From the KOBSTART panel, **position the cursor** on the 'Average CPU Percent" field, and **Press F1**.

You are now looking at the help text explaining the Average CPU Percent field and how it is calculated.

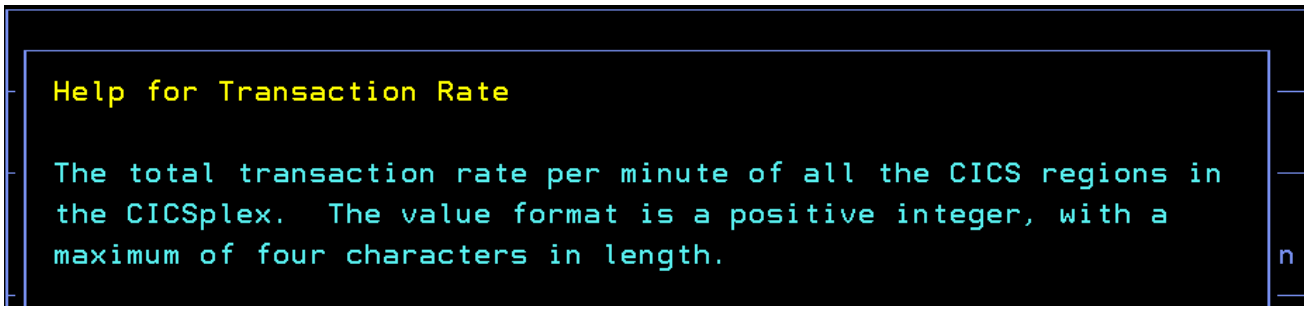


b) **Press F3** to make the help popup go away.

The same technique works to get help for CICS information on the KOBSTART panel.

c) For example, **position the cursor** on the "Transaction rate" field and **Press F1**

A help popup will appear for the Transaction rate field.



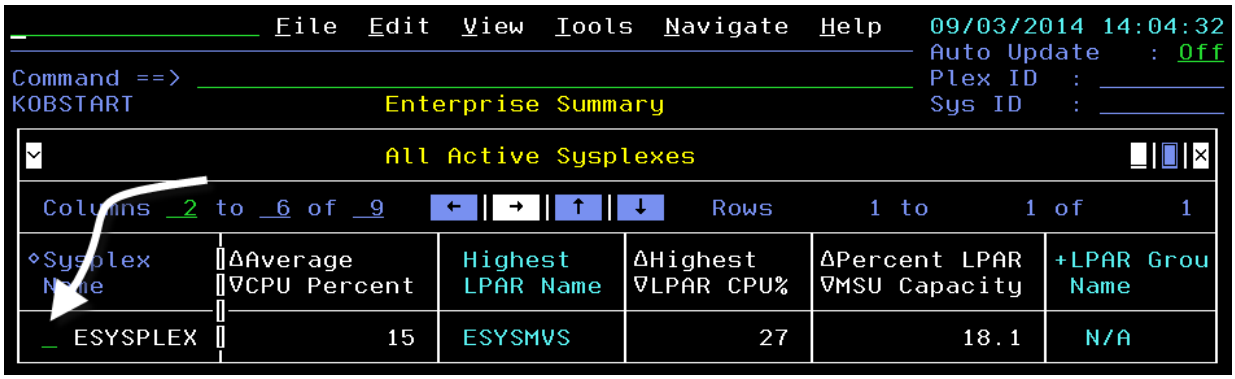
d) Again **Press F3** to make the help popup go away.

1.4 Zoom and Drill Down Navigation

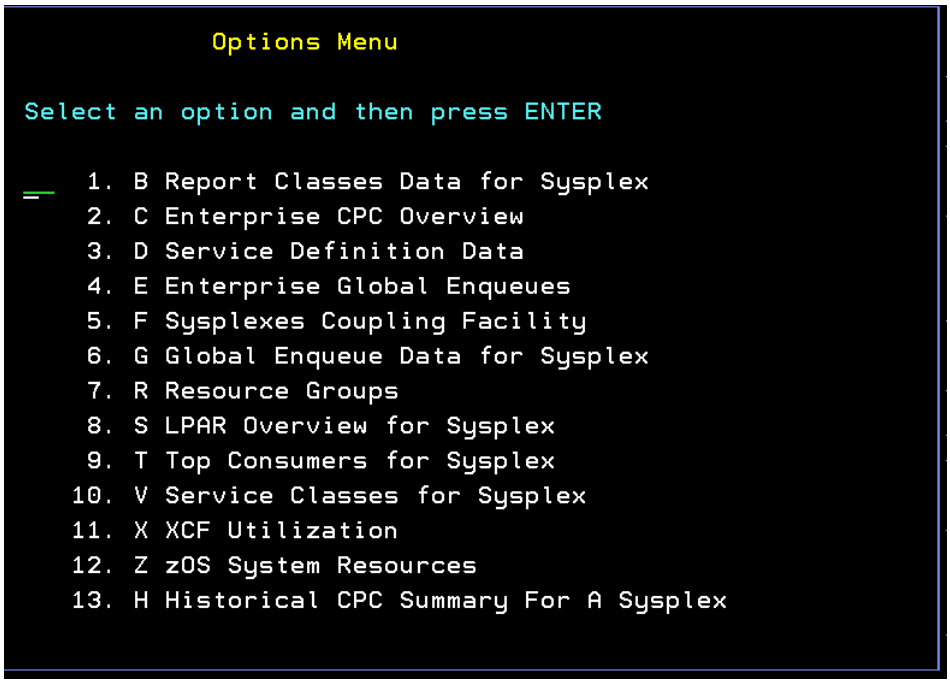
There a variety of ways minimize, maximize, zoom in and drill down using the enhanced 3270ui. This portion of the lab will demonstrate the most useful techniques.

The / character is used extensively throughout the enhanced 3270 ui for navigation.

a) **Position the cursor** next to the Sysplex name, enter a / and **Press Enter**.

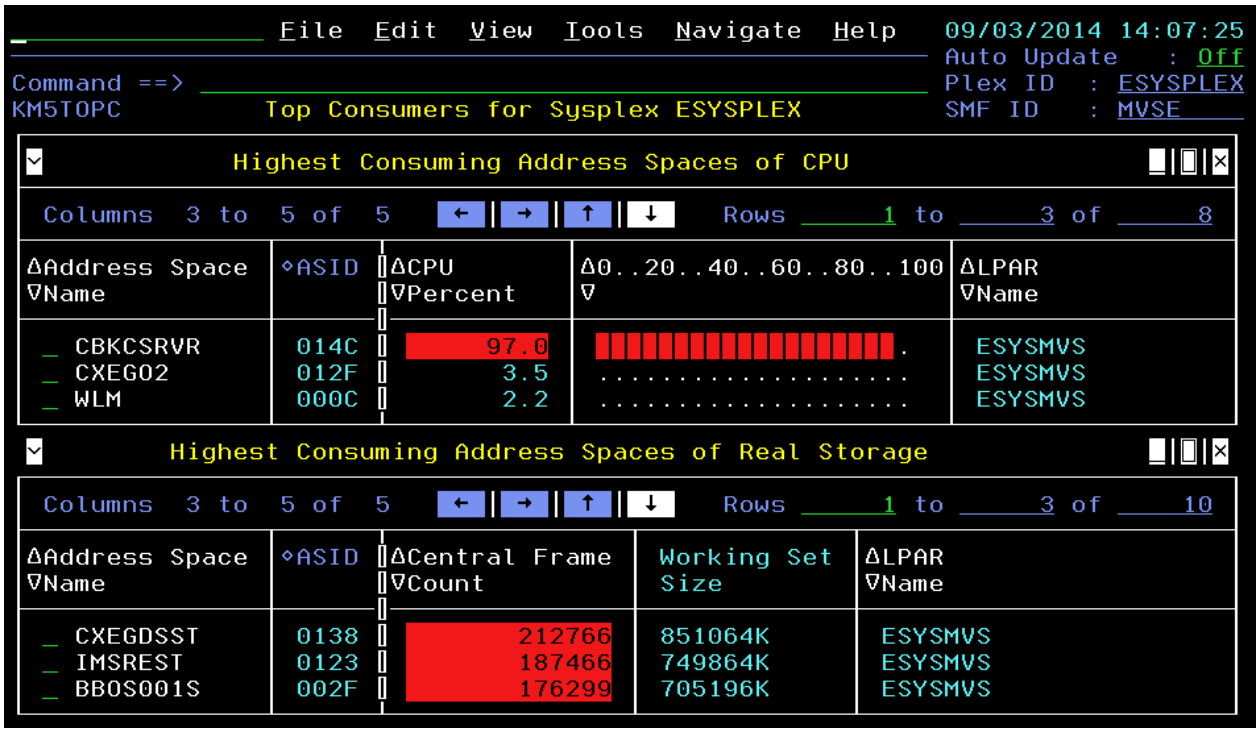


b) You will get a popup that shows a variety of selection options for more detail.



You can enter any of the letter commands or numbers to get additional detail.

c) Select option **T** for the Top Consumers, and **Press Enter**.



You are now looking at the Top Consumers panel for the Sysplex. This panel will show information for resource utilization across the Sysplex. Notice that there are several portions of the panel.

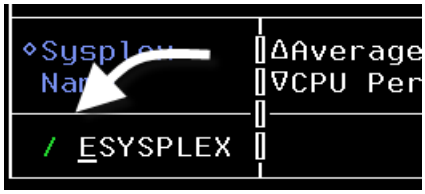
Notice that in the lower right corner that there is the word MORE. As with the KOBSTART example, MORE indicates that if you scroll the panel there is more information to display.

d) Try pressing F8 and F7 to scroll and see the contents of the KM5TPOC panel

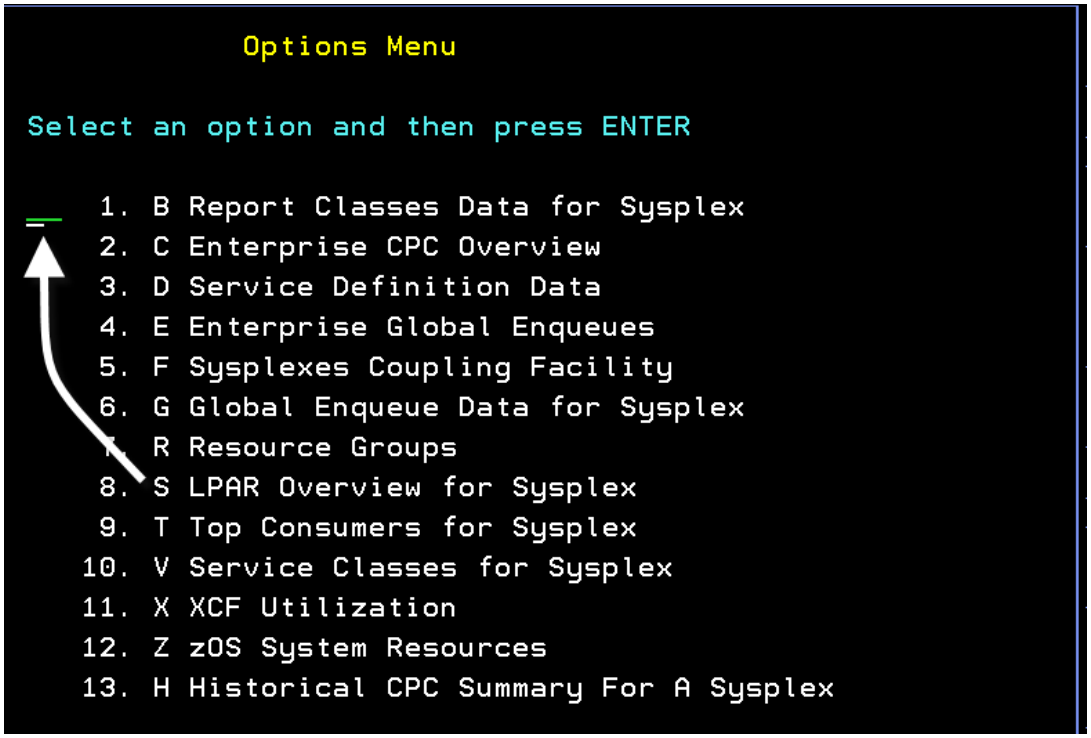
When finished reviewing KM5TOPC **Press F3** to return to KOBSTART.

There are different ways to **drill down** to get detail from the KOBSTART main panel. The following examples will demonstrate.

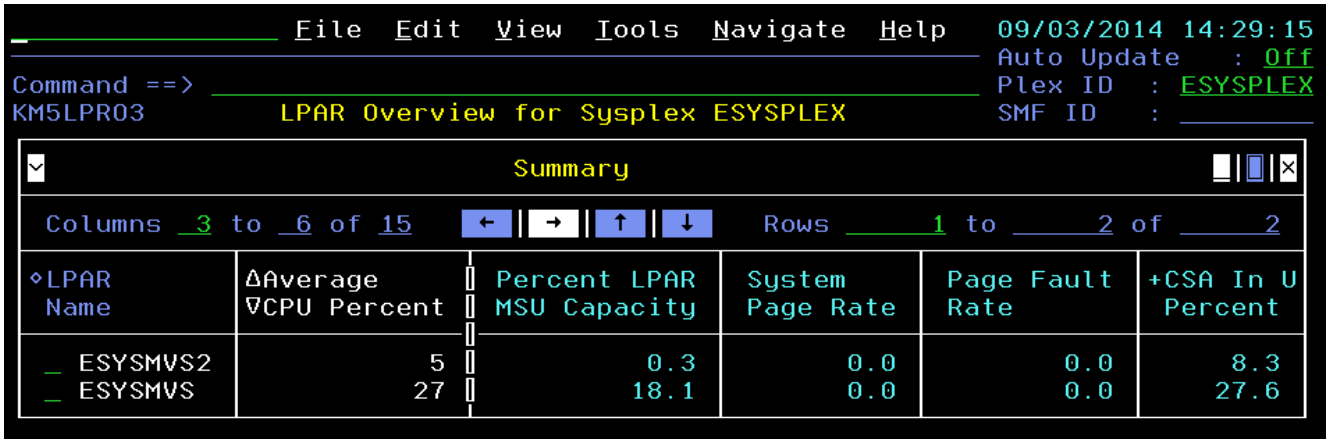
e) **Position the cursor** next to the Sysplex name, **enter** / and **Press Enter**



You will again get the navigation popup shown previously.



f) In this example select option **S** for the LPAR Overview for Sysplex, and **Press Enter**.



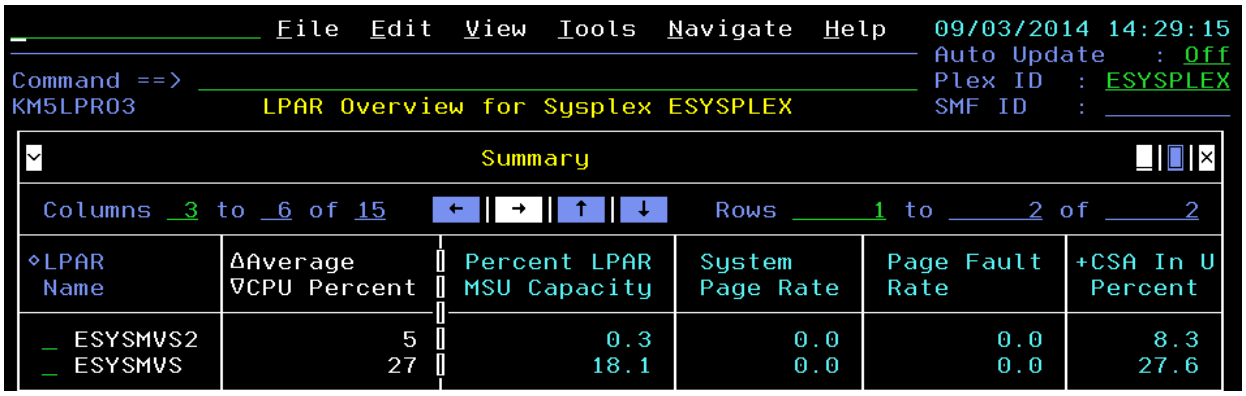
You have now drilled into the OMEGAMON LPAR Overview screen. This panel will show the various LPARs in the current Sysplex. Notice how you may use the shift options demonstrated earlier to see additional information about the LPAR.

Once finished, you can **Press F3** to go back to the KOBSTART panel.

There are implicit drill down navigation options. The following steps will demonstrate.

g) Instead of entering the / command, **position the cursor** next to the Sysplex name and **Press Enter**.

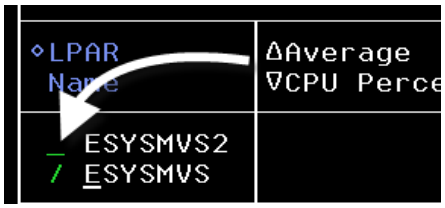
You will end up navigating to the same LPAR Overview display, as shown previously.



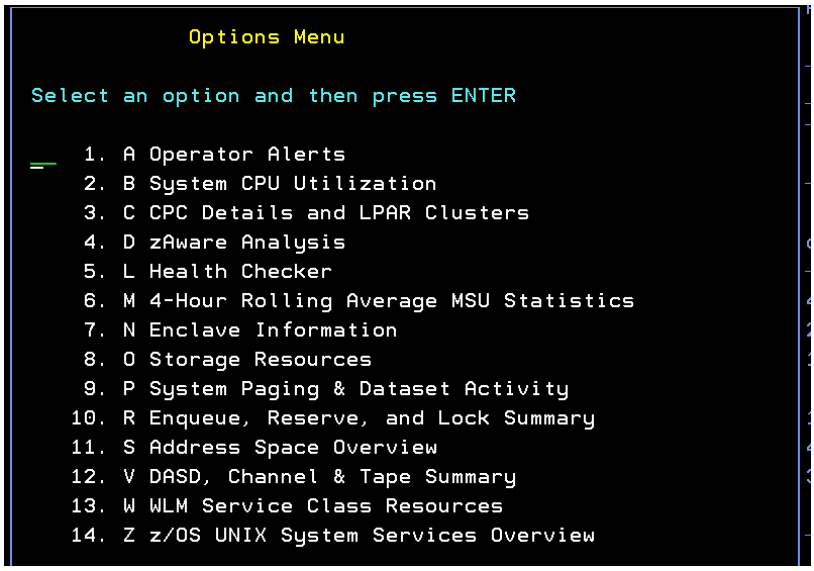
What this demonstrates is that, by default, the selection will implicitly be whatever the S option is in the popup. In this example, that takes us to the LPAR overview screen.

As in KOBSTART, from the LPAR overview display you may use the / navigation technique to drill down for more information.

h) P**osition the cursor** to the left of one of the LPARs **enter** / and **Press Enter**



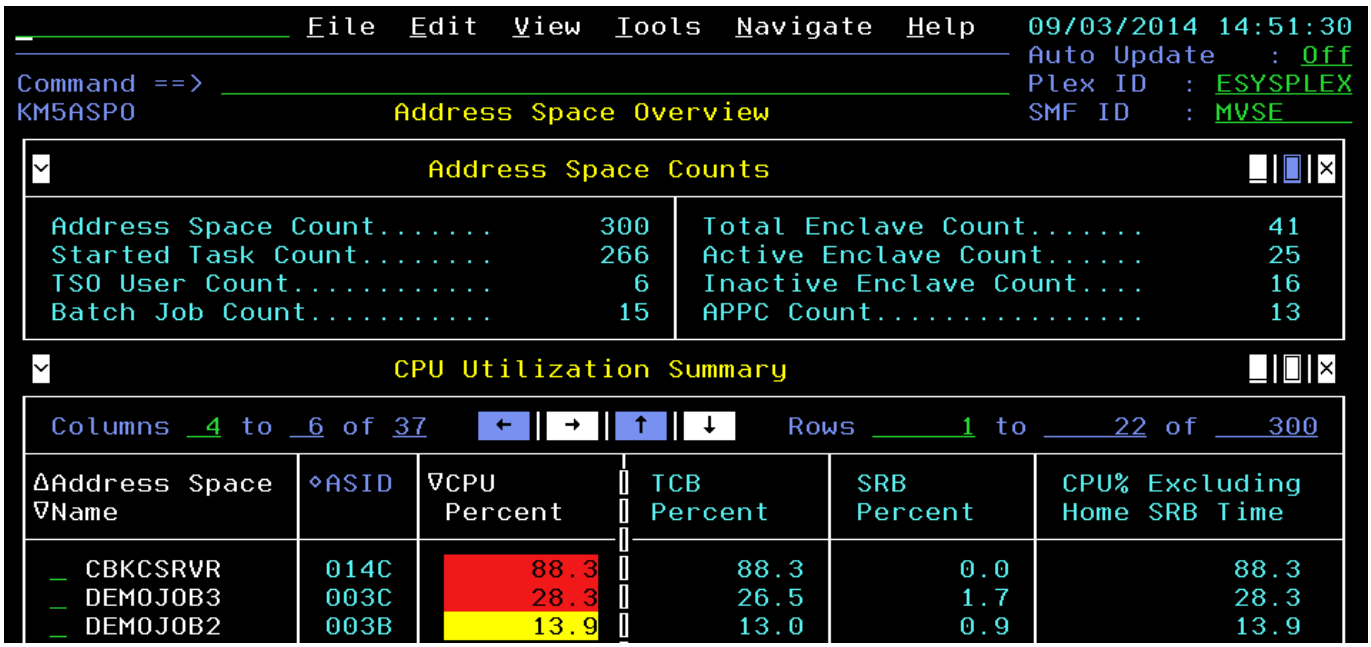
You are now looking at the drill down popup menu from the LPAR overview display.



Notice how you will have different options from what may appear on other popup menus. This demonstrates that the / command and the options menus are context sensitive.

i) Select option **S** and **Press Enter** to go to the Address Space Overview screen (KM5ASPO)

You are now looking at the Address Space overview display for the LPAR. This panel lists all the address spaces currently executing on the z/OS LPAR.

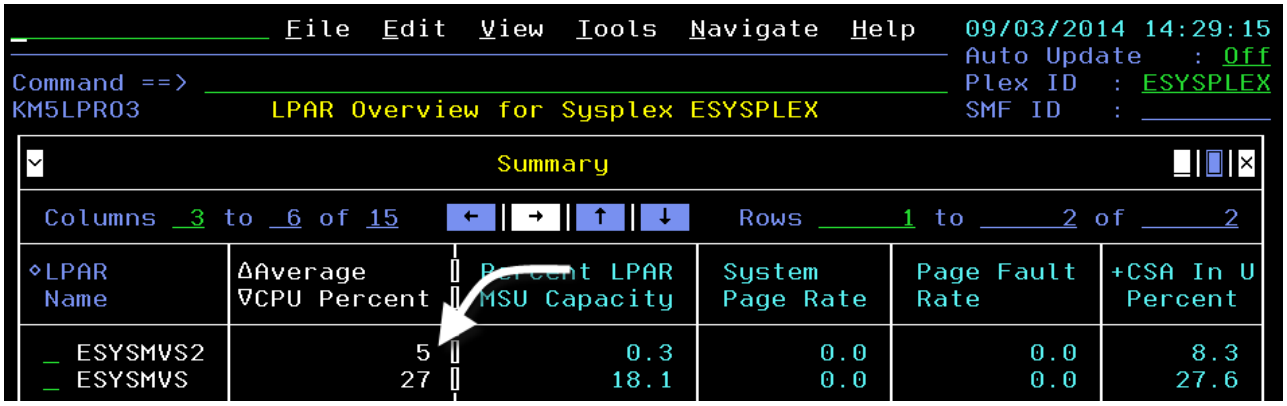


Remember, by default you will always get the S option from a navigation popup when you position the cursor and press enter.

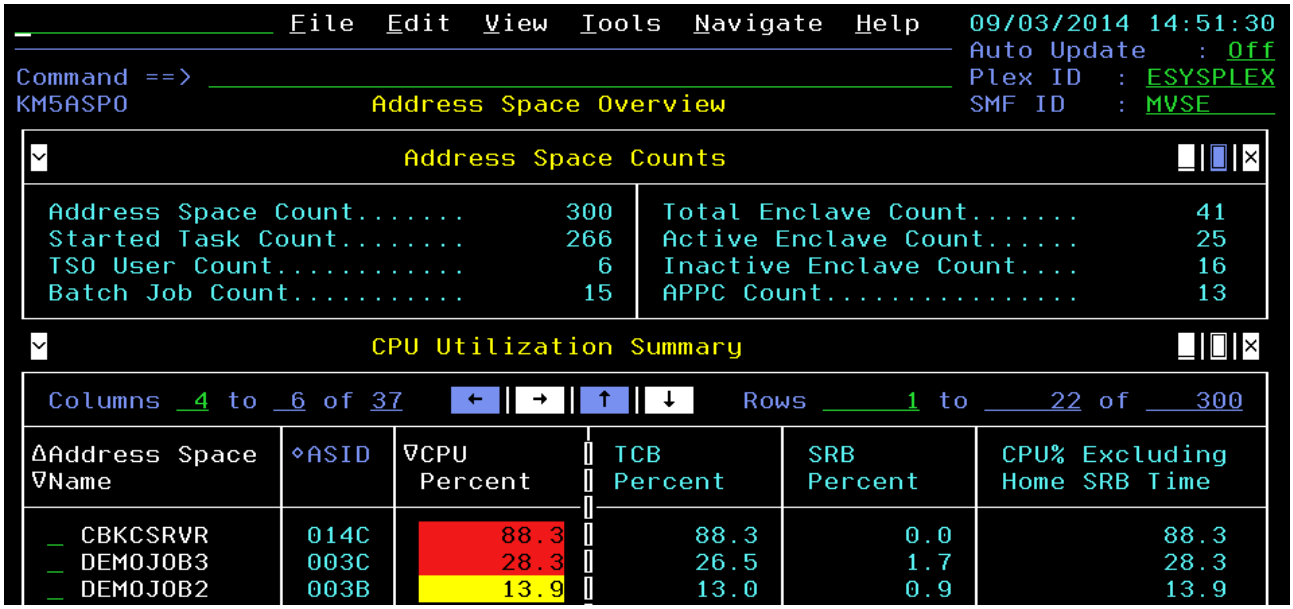
j) **Press F3** and go back to the LPAR Overview screen.

There is another way to drill down for detail that is very useful to know. From any panel where you have white text in the data fields, you can position the cursor on the text and press enter, and you will drill down into the underlying detail display.

k) **Position the cursor** on the Average CPU percent field and **Press Enter.**



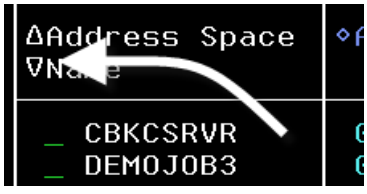
You will once again be on the Address Space Overview panel.



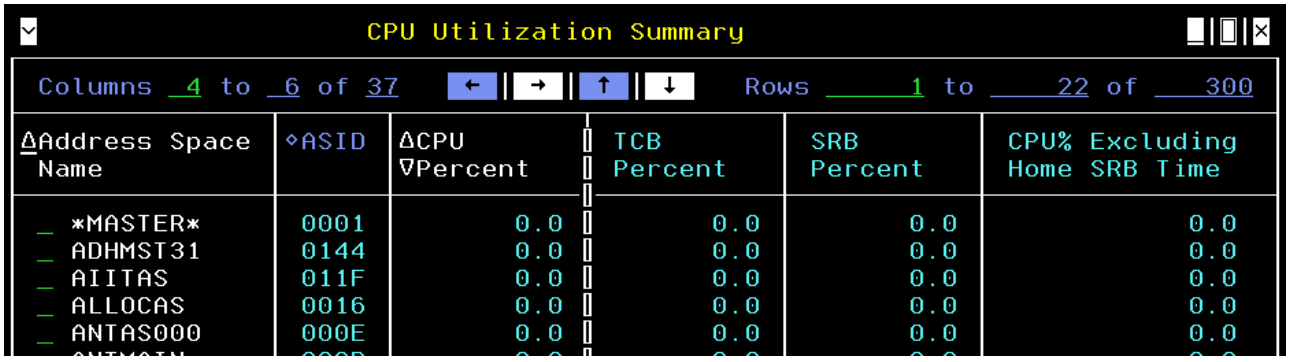
1.5 SORTing

Now that we are on the KM5ASPO Address Space Overview panel, it's a good time to demonstrate the sorting capabilities of the OMEGAMON enhanced 3270 ui.

a) **Position the cursor** on the arrow characters over Address Space Name, and then **Press Enter**



You will now see the Address Space information sorted by address space name.



b) You can sort the panel either ascending or descending. While leaving the cursor on the arrow field **Press Enter** again to see the sort sequence change.

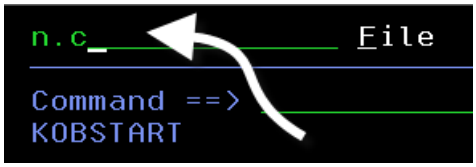
Notice that you also have the ability to use the same technique to sort by the CPU Percent field. You will see this type of sort option appear on other panels.

c) Once finished**,** **Press F3** until you get back to the KOBSTART panel.

1.6 Filtering e3270ui panels

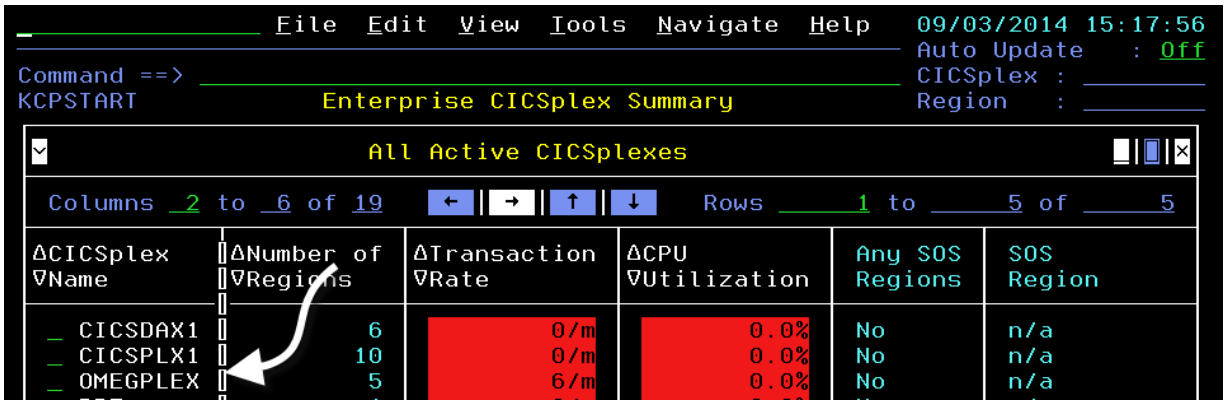
Filtering is available on many panels in the e3270ui. The following steps will demonstrate how filtering operates in the e3270 user interface.

a) From the KOBSTART panel, **enter n.c** and **Press Enter.**

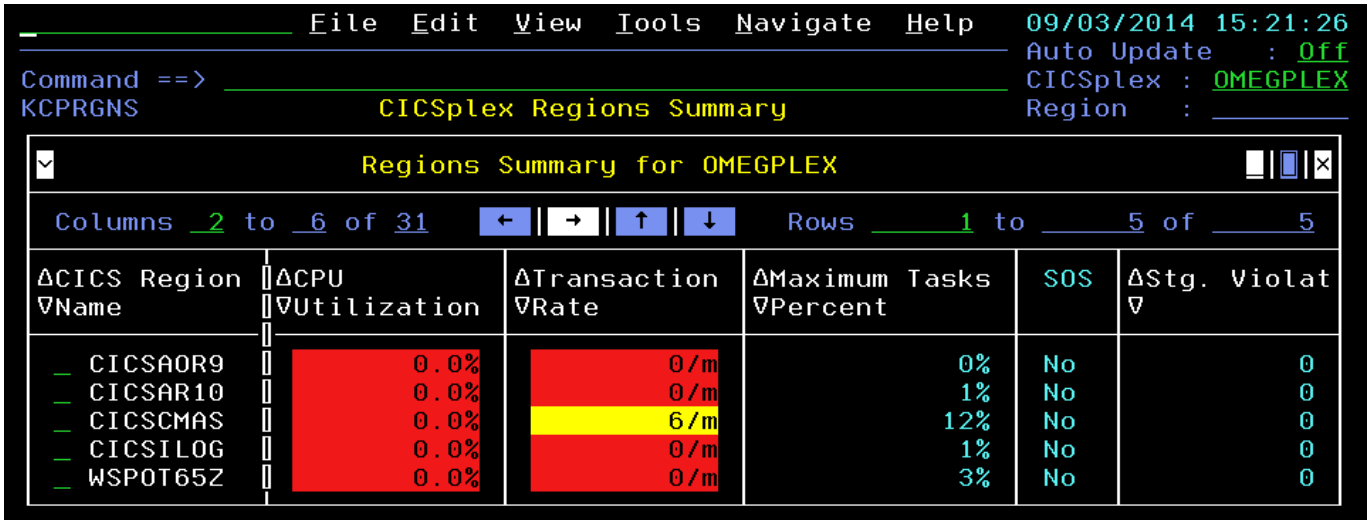


You are now looking at the KCPSTART OMEGAMON CICS panel.

b) From the KCPSTART panel, **position the cursor** next to a CICSplex and **Press Enter.**

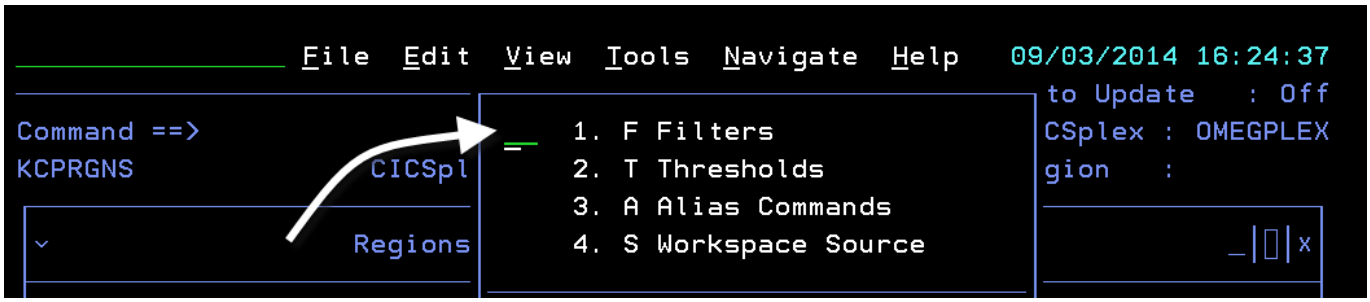


You are now looking at the CICSplex region summary for OMEGPLEX.



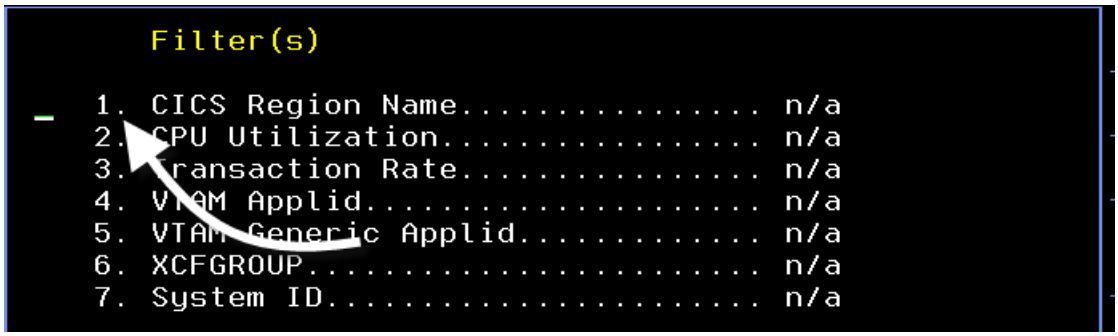
From here there are a variety of ways to invoke the Filter options to filter the display.

c) On the toolbar you may either **tab to View** and **Press Enter** or you may **enter V** and **Press Enter** to get the following drop down menu.



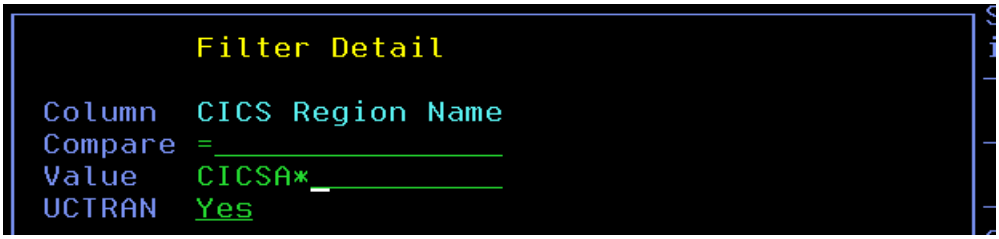
d) **Select option F** for Filters and **Press Enter**.

You are now looking at the filter popup for the panel.



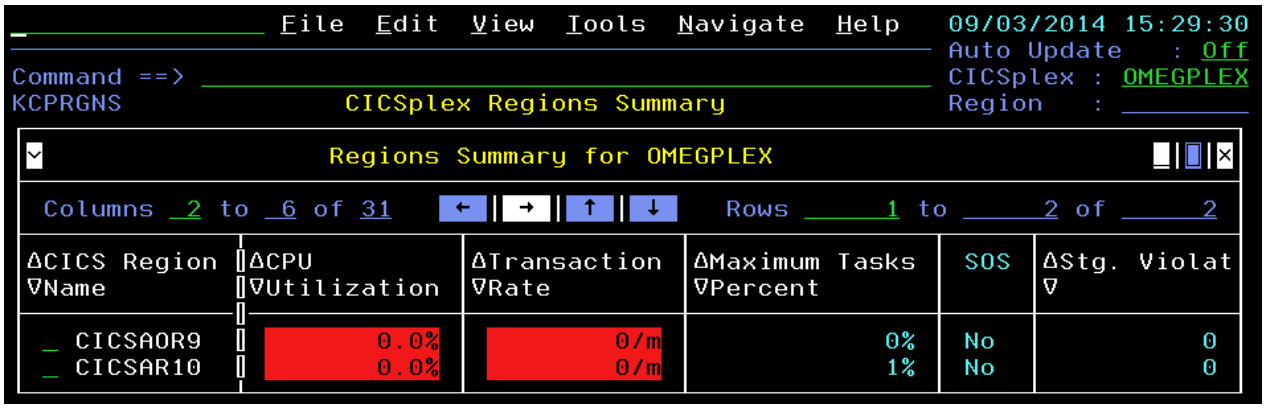
e) From the popup **select option 1** for CICS Region Name and **Press Enter**.

You are now looking at the filter detail popup for CICS Region Name.



f) Enter a value of **=** for compare field, **enter CICSA***, and then **Press Enter**. Then **Press F3**.

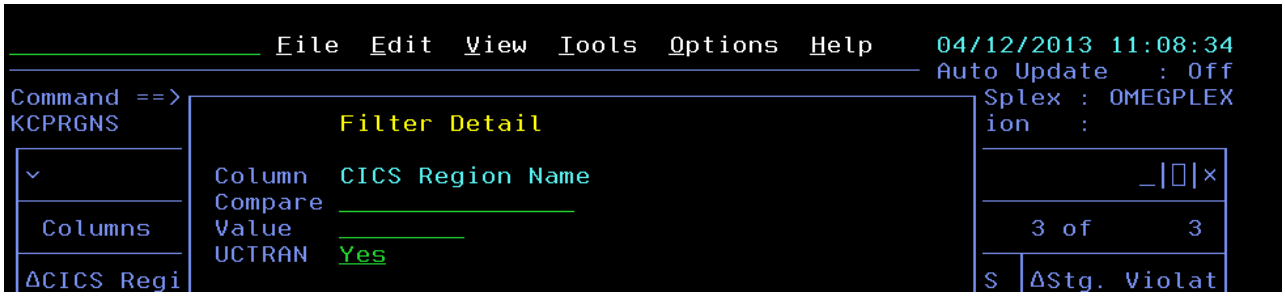
Notice you now have filtered the CICS Regions Summary panel based upon CICS region name.



g) To turn the filter off do the following.

Press F4. You will get the filter popup (NOTE - this is a quicker way to invoke the filters).

Select **option 1** and **Press enter**.



Blank out the filter options, and **Press enter**. Then **Press F3**.

You should now be able to see all the CICS regions in the CICSplex again.

h) **Press F3. Press F3 again**. You should now be back at the KOBSTART panel.

1.7 Viewing History Data In e3270ui (New in V5.3)

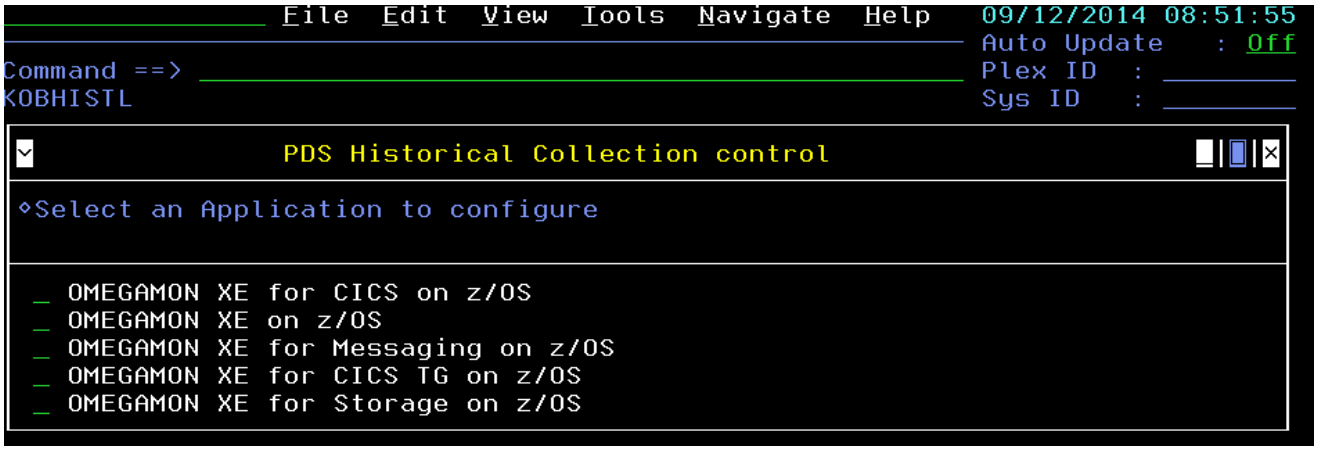
Historical performance information in the e3270 user interface is one of the new features added to V5.3 of OMEGAMON. OMEGAMON z/OS, CICS, Messaging, and Storage all exploit this new capability.

The user may configure what history data is collected and viewable within the e3270 user interface. The collection options may be specified at the level of individual data collection categories.

To understand what historical information is available:

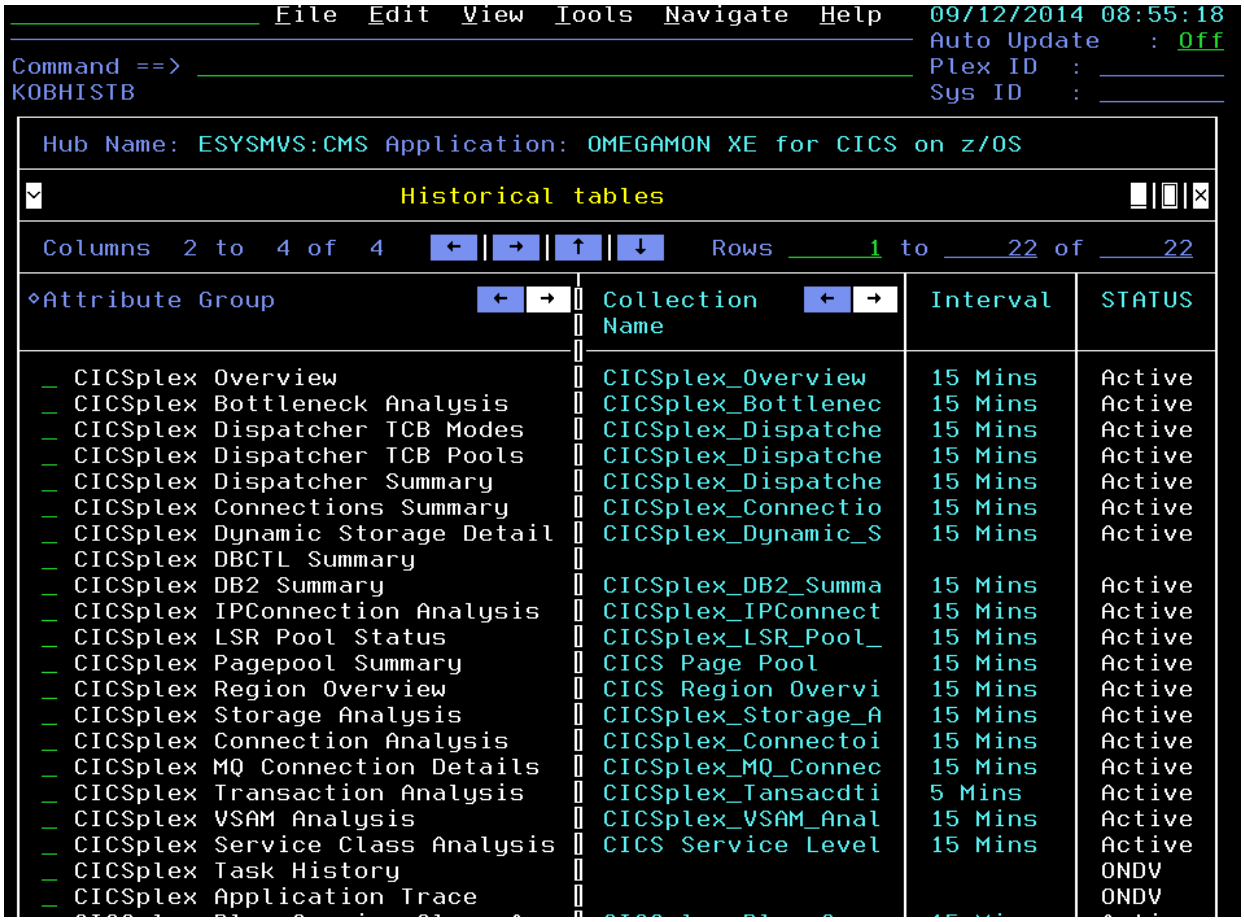
a) From the KOBSTART panel, **enter v.h** and **Press Enter.**

You are now seeing a list of OMEGAMON monitors that may be enabled to display historical data in the e3270ui. In the example below, you see that history may be collected and shown for z/OS, CICS, CICS TG, Messaging, and Storage.



b) To see specific collection information, **position the cursor** by one of the lines (such as CICS) and **Press Enter.**

You are now looking at the history collection options for OMEGAMON CICS. This panel shows that there are several tables of history information being collected by OMEGAMON CICS.



There are two primary categories of history data collected by OMEGAMON CICS.

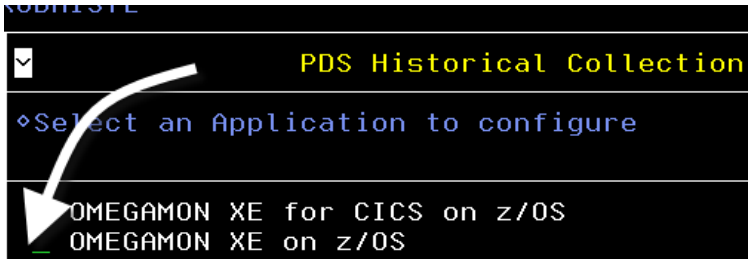
Interval snapshot – Time interval basis collection – one record or records per interval

Task History – detailed CICS task level history – one record for each CICS task

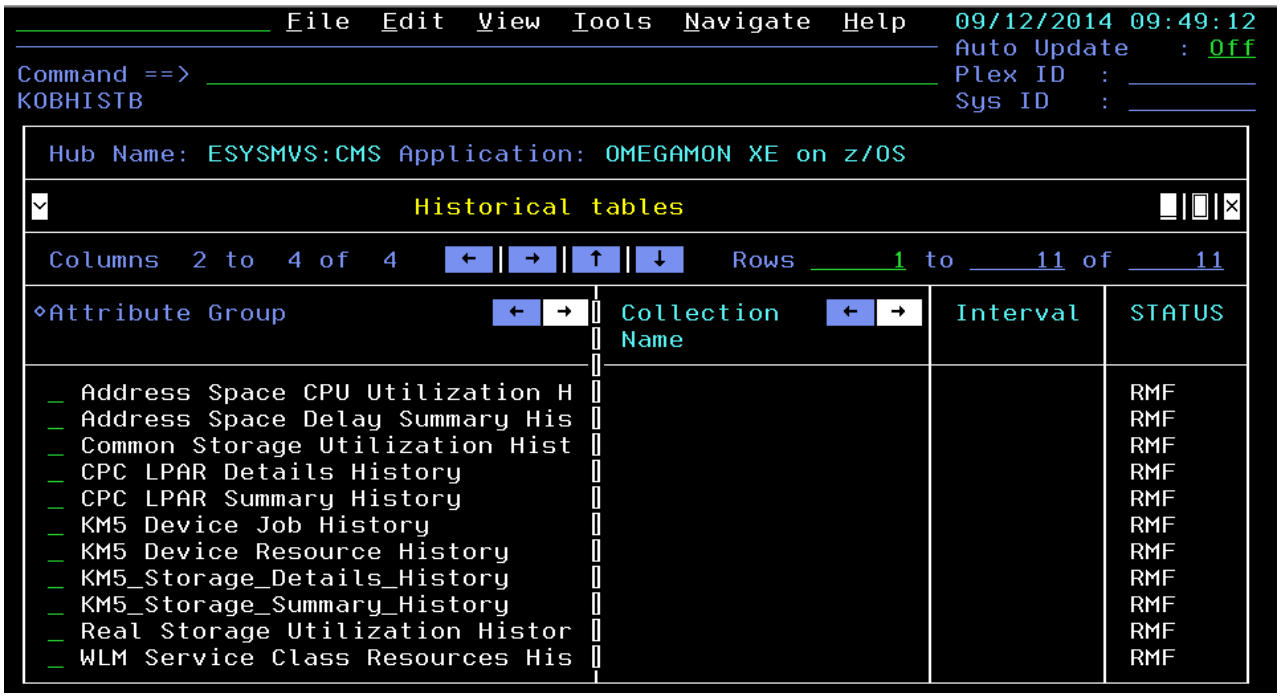
Interval based history data is collected to the Persistent Data Store (PDS) files allocated to the OMEGAMON agent task or to the Tivoli Management Server (TEMS) task. The user may specify the location of data collection. Note that Task history specifies ONDV (for online data viewing) and does not specify a time collection interval.

c) **Press F3** to return to panel KOBHISTL

d) **Position the cursor** by OMEGAMON z/OS and **Press Enter.**



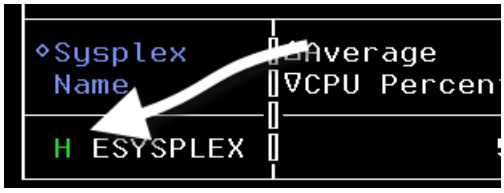
You are now looking at the history collection options for OMEGAMON z/OS.



Note that for OMEGAMON z/OS the history collection comes from RMF. OMEGAMON z/OS exploits the RMF DDS facility to collect and display z/OS performance history data. This includes address space level, system level, device level, and Workload Manager (WLM) level history.

e) **Press F3 twice** to return to KOBSTART

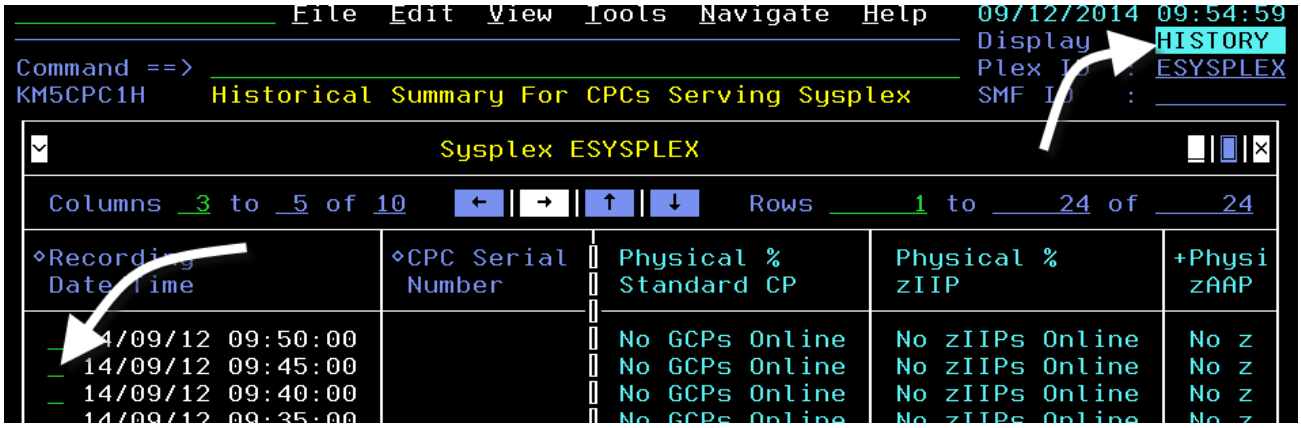
f) **Position the cursor** by the Sysplex name **enter H** and **Press Enter.**



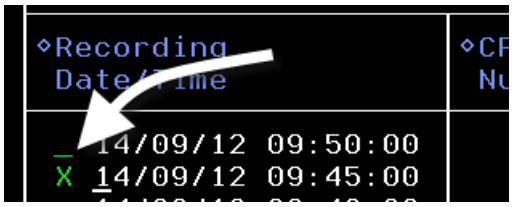
You are now looking at the history summary for the z/OS Sysplex. Each line represents a history collection interval taken from RMF.

Note – some hardware information is not available in this environment

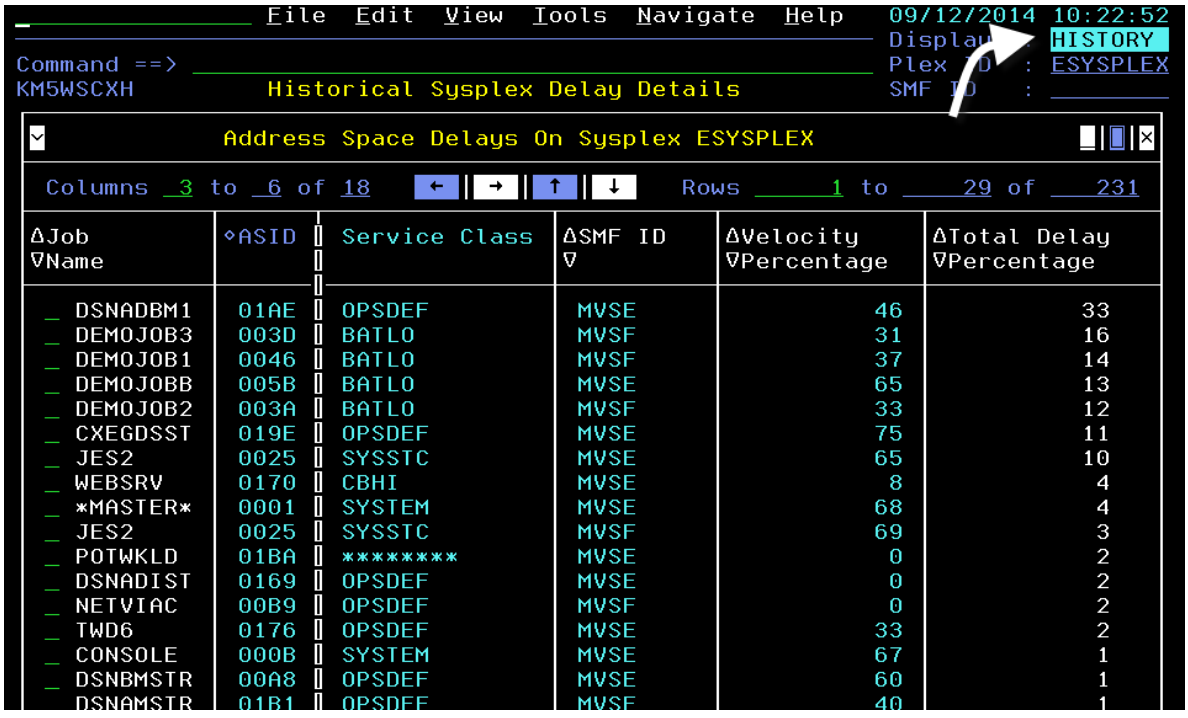
Due to the fact that the Proof of Technology environment is running in a z/VM environment, certain hardware/CPU level information will not appear in the RMF-based history displays (example – No GCPs online).



g) **Position the cursor** on a time interval **enter X** and **Press Enter.**

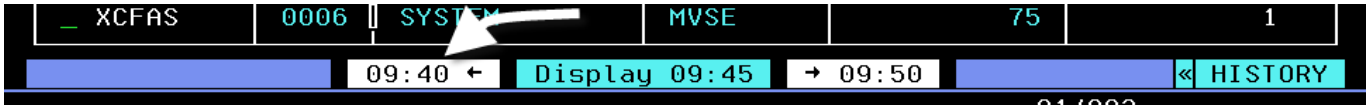


You are now looking at the z/OS address space level history for the Sysplex. Each line represents an address space, and shows the various wait reasons for that given task. You may scroll the panel down or to the right to see additional tasks and additional detail for a given job.



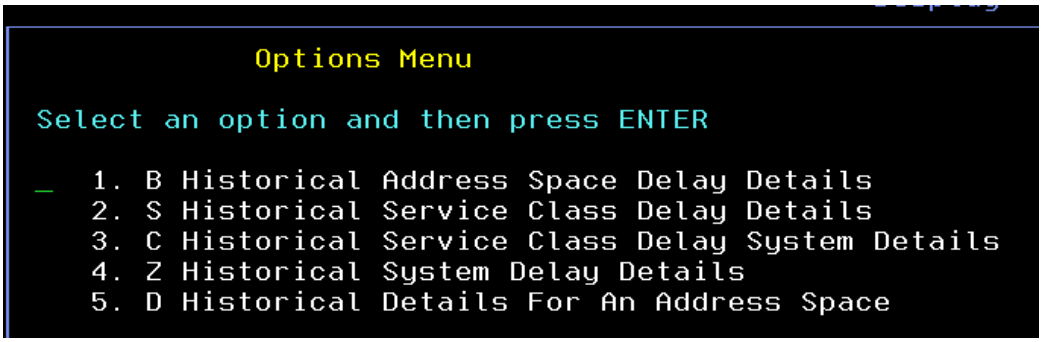
Note that there is a history navigation tool bar at the bottom of the panel (see example below). This tool bar may be used to navigate from one time interval to the next.

h) **Position the cursor** on the history tool bar and **Press Enter**



Note how as you press enter on the tool bar the history time interval will shift. Try going forward and backward through various time intervals using the history tool bar.

i) **Position the cursor** by one of the address spaces **enter** / and **Press Enter**



You are looking at the options drill down menu to get more historical detail for the given job or WLM service class.

Feel free to try one or more of the history drill downs.

j) **Press F3** until you have returned to the KOBSTART panel.

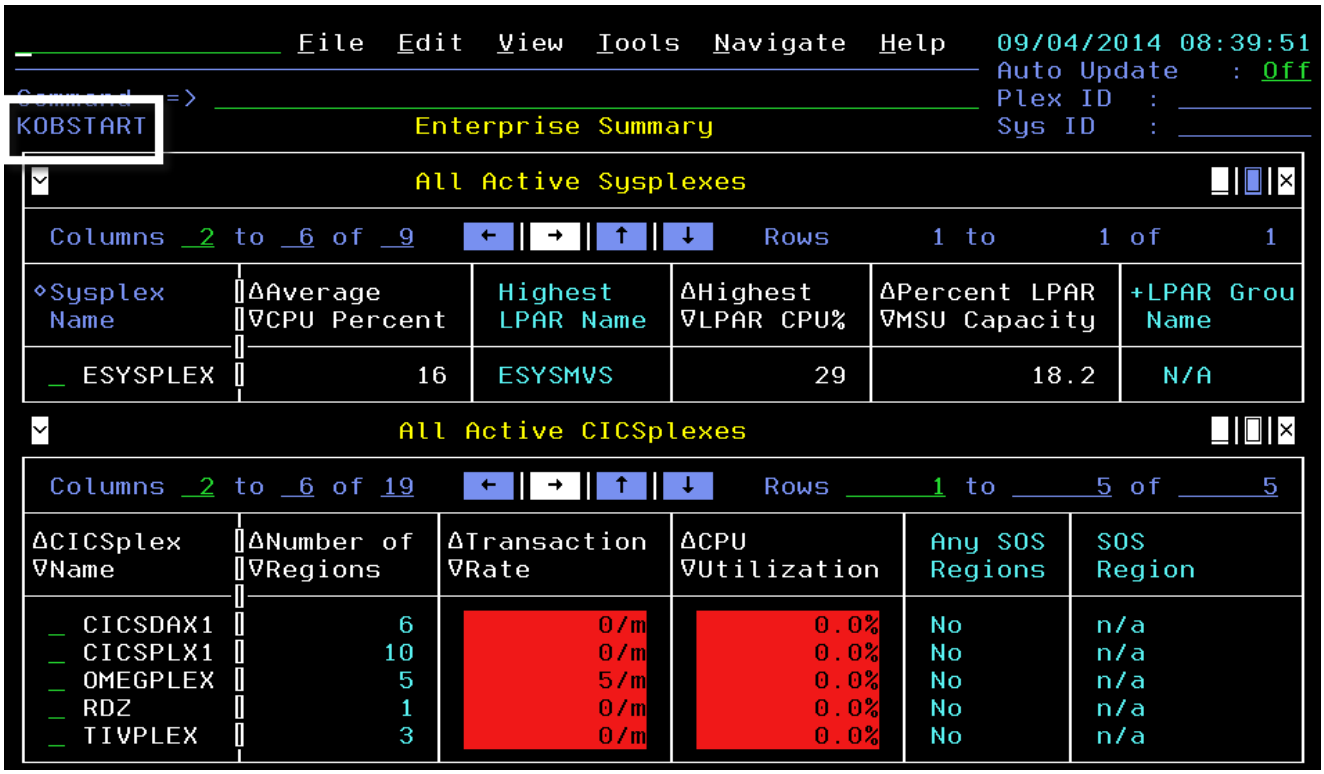
Congratulations! You've completed the introduction to the OMEGAMON enhanced 3270 user interface lab exercise. You now know how to navigate, scroll, drill down, sort and filter the displays. You have also seen new features, such as history displays in e3270ui. Please feel free to try one of the more advanced lab exercises.

Lab #2 OMEGAMON z/OS Enhanced 3270 Scenario Walkthrough

This lab exercise will demonstrate how to use some of the primary features of the OMEGAMON z/OS V5.3 enhanced 3270. In this lab the user will perform a series of scenarios focused on the following:

- Sysplex level resource monitoring
- z/OS LPAR level resource monitoring
- Analysis of high CPU tasks on z/OS
- Problem isolation using z/OS historical performance information (new in V5.3)
- Cross component performance analysis using embedded data (new in V5.3)

2.1 Overview from the Sysplex Perspective

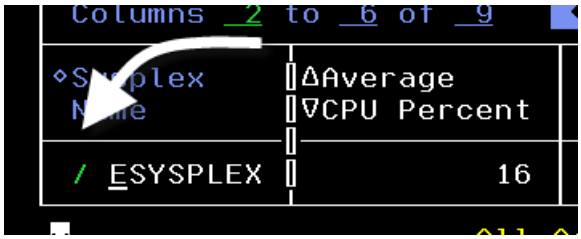


Here is the start panel for the e3270 ui (panelid KOBSTART). This panel contains overview information for all the OMEGAMON monitoring agents installed into the e3270ui. In the above example you see information for both CICSplex and z/OS Sysplex. From this panel you may scroll and/or drill down for additional information. There are several methods for analysis that will be demonstrated as part of this lab exercise.

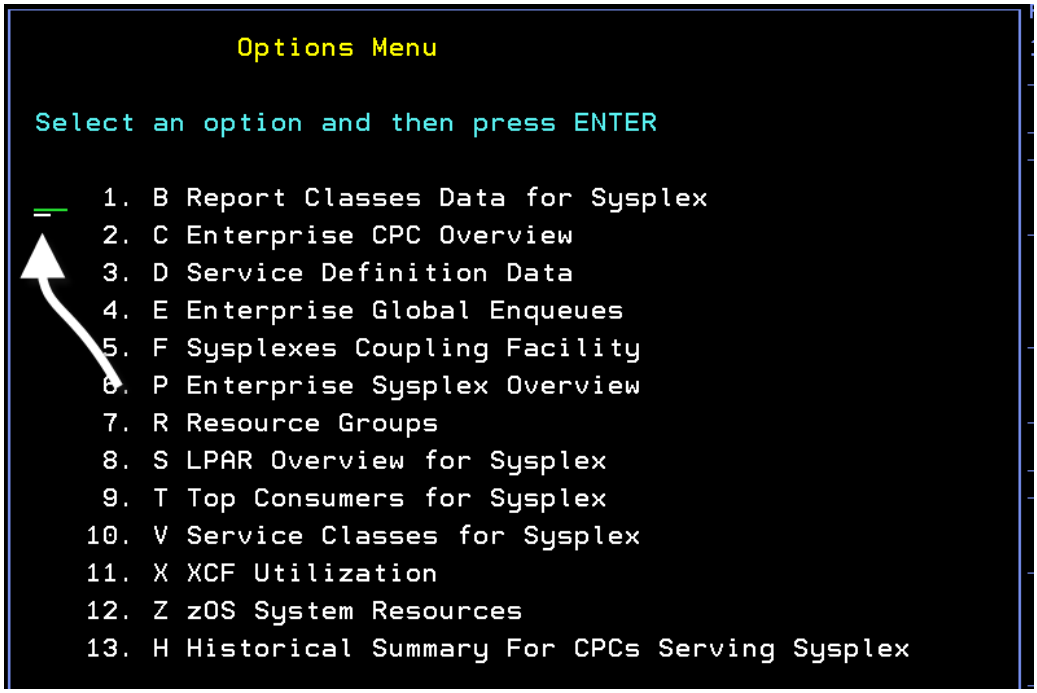
2.2 Viewing Sysplex level resources

Beginning from the KOBSTART panel we see a Sysplex level view of the enterprise. We will look at a few of the drill down options from this panel.

a) **Position the cursor** by the Sysplex Name**,** **enter** / and **Press Enter**. You will then see a popup with several navigation options.



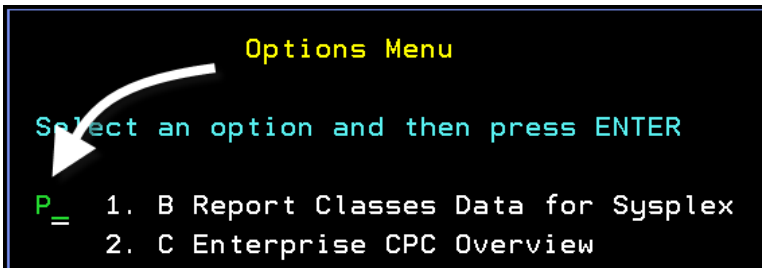
You will get a popup with several drill down options. From this popup you can drill down to look at several categories of Sysplex level resources (CPC and LPAR overview information, Sysplex level coupling facility information, and Sysplex level WLM information).



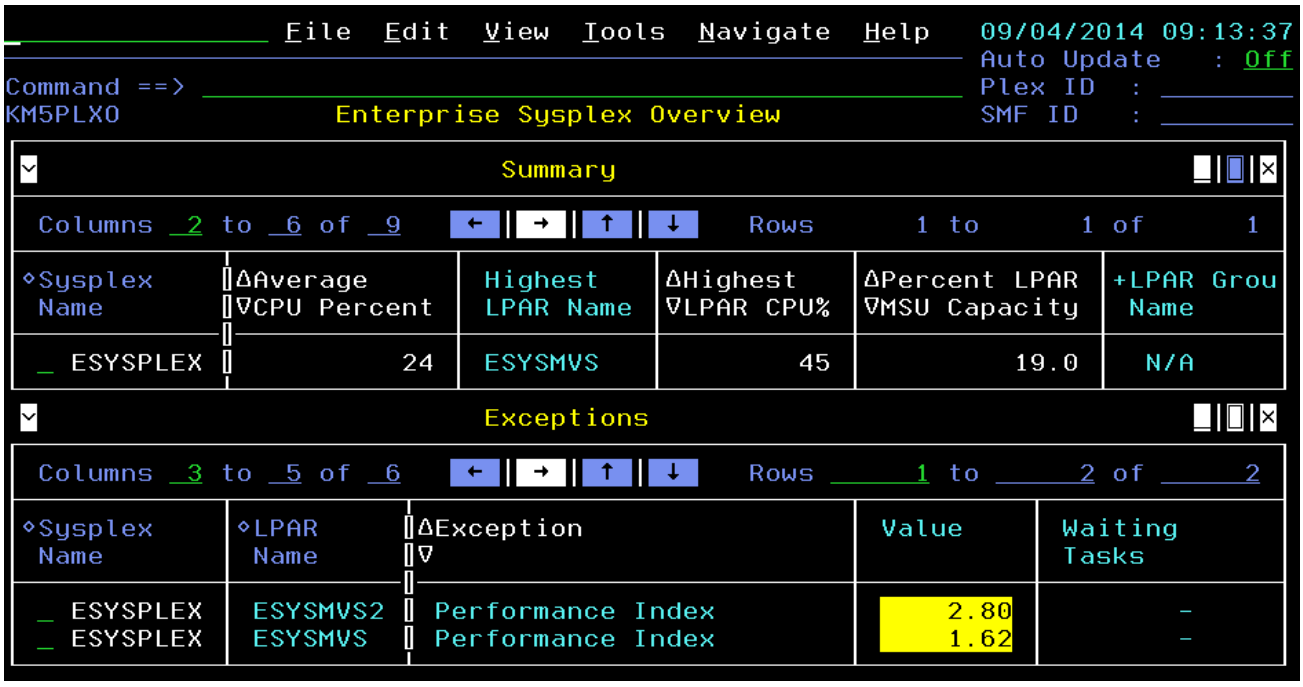
Note – OMEGAMON z/OS V5.3 adds a new historical option

One of the major enhancements to OMEGAMON z/OS V5.3 was the addition of historical information to the enhanced 3270 ui (option H in the example below). This history information is collected from the RMF DDS interface. There will be more information on this later in the lab.

b) **Enter P** for Enterprise Sysplex Overview in the popup and **Press Enter**.

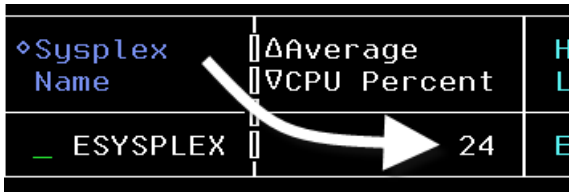


One of the major improvements in the enhanced 3270 ui is support for robust Sysplex level information in the 3270 interface. Here you see a Sysplex overview including such information as average CPU usage for the Sysplex, the highest CPU utilization LPAR, and the % CPU utilization of the highest LPAR.

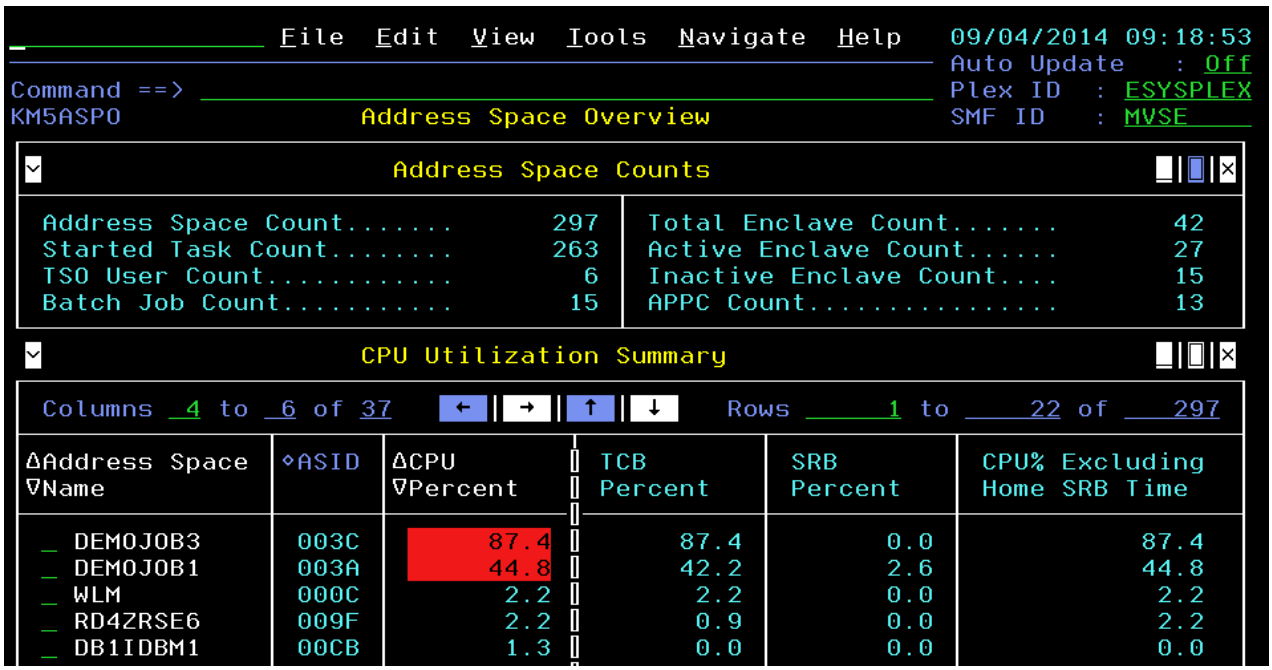


Note that when looking at the panel, there are several fields in white. Those fields are eligible for drill down. For example, you may want to see the tasks running on the highest utilization LPAR.

c) Position the cursor on the Average CPU Percent and **Press Enter.**



The tool has now navigated you directly to the Address Space Overview panel for the highest utilization LPAR, and shows the address spaces running on the LPAR sorted in descending CPU Percent order. From this panel you can analyze the various address spaces. This will be demonstrated later in the lab exercise.

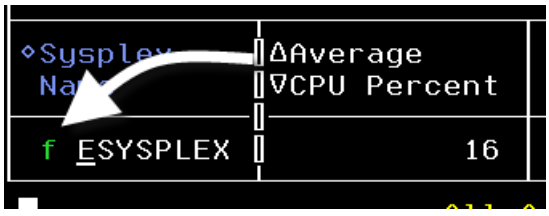


d) **Press F3**. **Press F3** again. You should now be back at the KOBSTART panel.

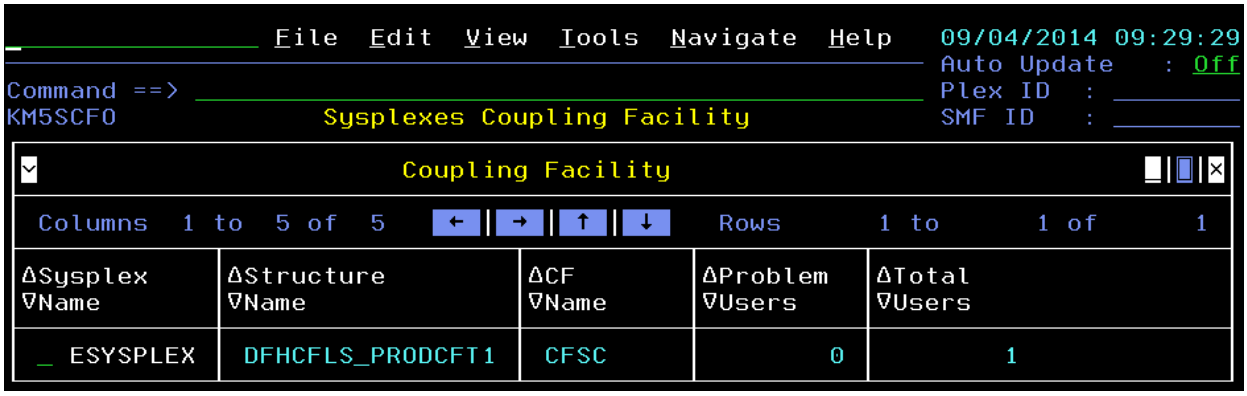
2.3 View Sysplex Coupling Facility Details

This lab exercise will show you how to view Sysplex Coupling Facility level information using the e3270 user interface.

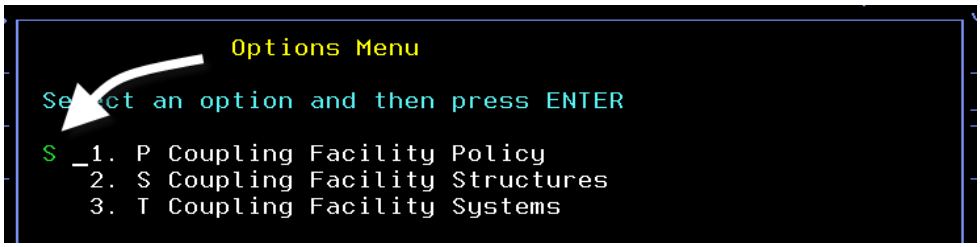
a) **Position the cursor** by the Sysplex Name, **enter F** and **Press Enter**.



The following is the Coupling Facility overview panel. From this panel you may get more detail on the coupling facility, its structures, and CF utilization.



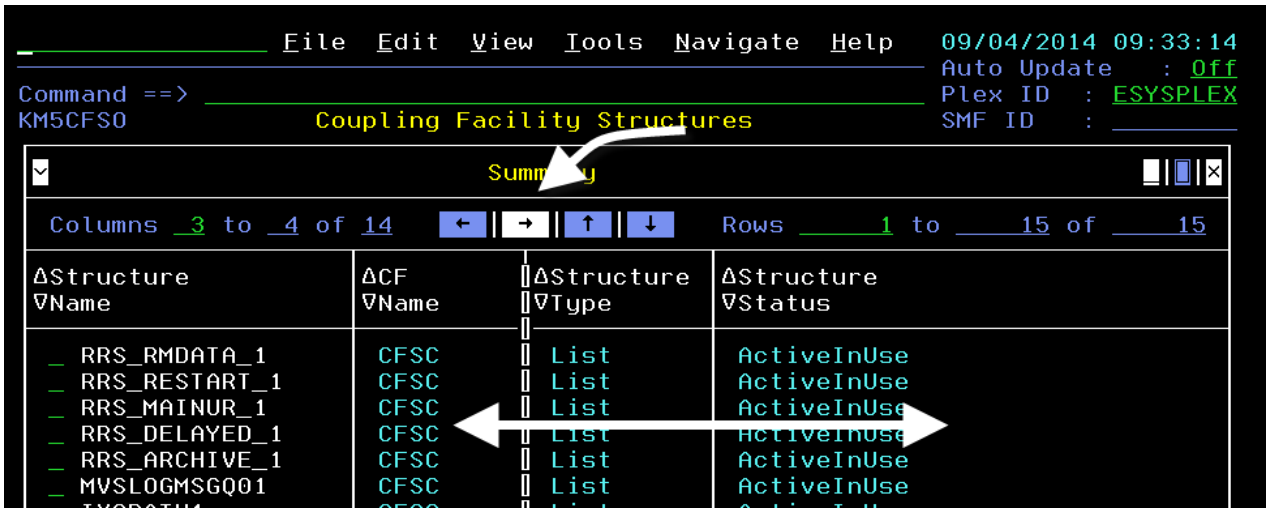
b) To get more detail on the coupling facility, **Position the cursor** by the Sysplex Name, **enter** / and **Press Enter**.



From the popup you can select the coupling facility policy, look at the coupling facility structures, or look at what systems are utilizing the coupling facility.

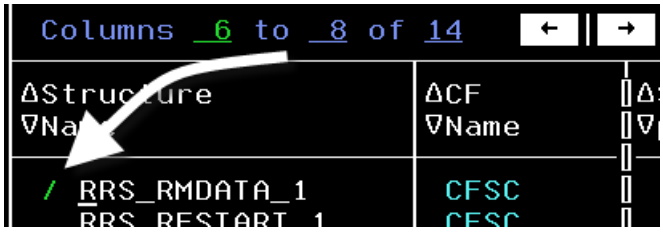
c) **Enter S** for Coupling Facility Structures in the option and **Press Enter**.

You are now looking at the summary overview of all the structures defined within the coupling facility. This display shows status and utilization information for each structure defined within the coupling facility.

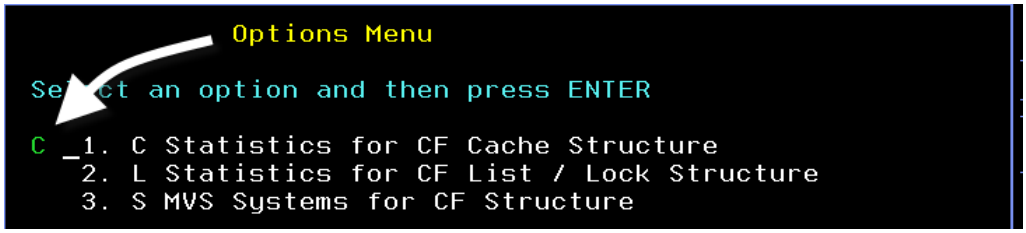


d) You can scroll the screen right/left to see the various coupling facility structure statistics (using F10/F11 or the arrow buttons).

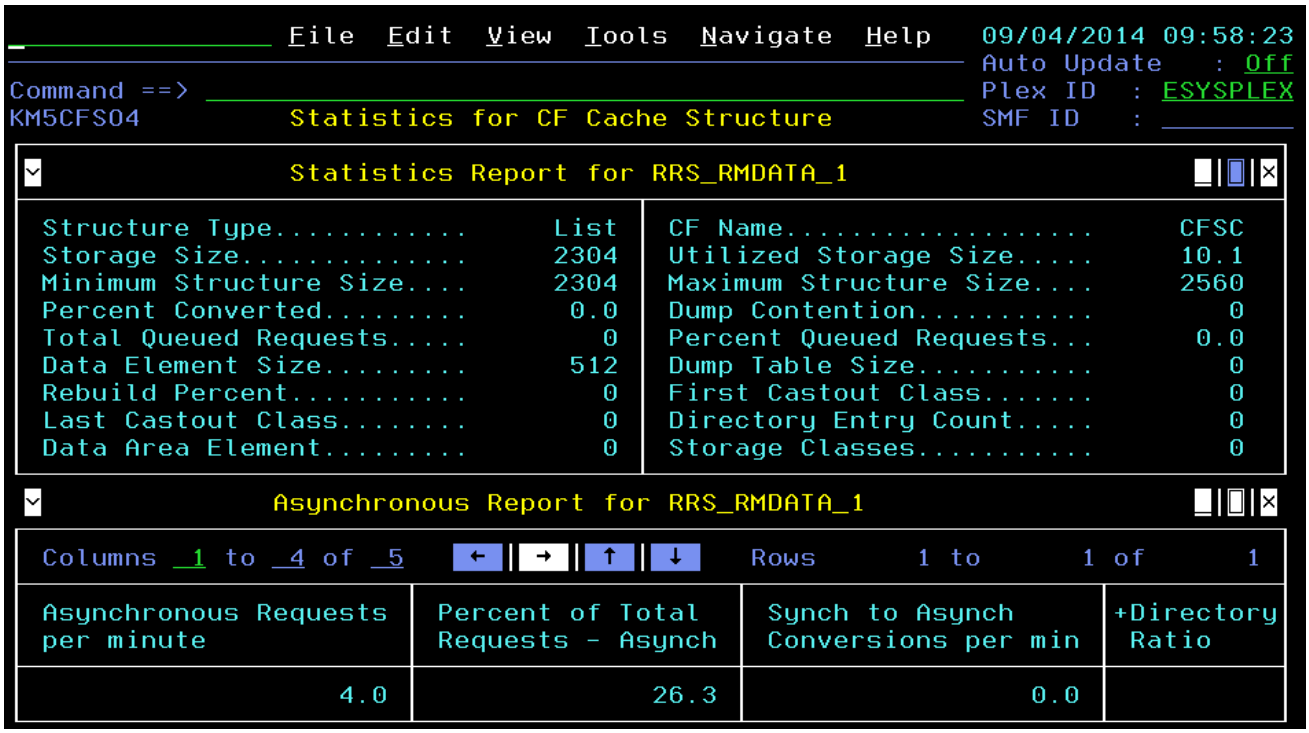
e) To get detail on a specific coupling facility structure **position the cursor** by a Structure Name, **enter** / and **Press Enter**.



f) From the popup **enter C** for Statistics for CF Cache Structure in the option and **Press Enter**.



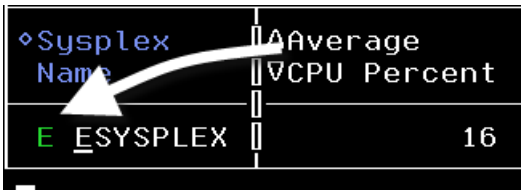
The following panel shows details about the CF structure including structure type, structure size, utilization, and synchronous/asynchronous request rates.



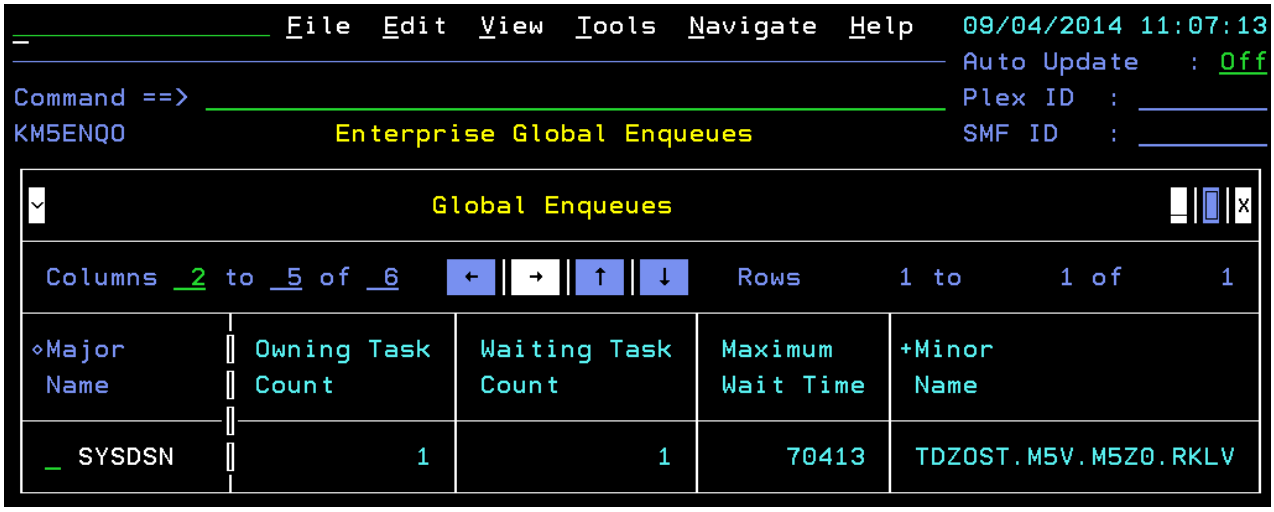
g) **Press F3** then **Press F3** then **Press F3** again. You should be back at the KOBSTART panel.

OMEGAMON will show enqueue activity across the Sysplex environment. The next portion of the lab will demonstrate how to see enqueue activity.

h) **Position the cursor** by the Sysplex Name, **enter E** and **Press Enter.**



You are now looking at enqueues currently on the system (if any).



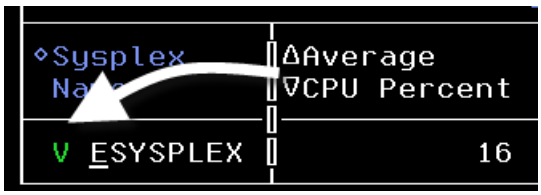
In the above panel you see information on z/OS resource enqueues, including resource name, owning tasks and waiting tasks.

i) **Press F3**. You should be back at the KOBSTART panel.

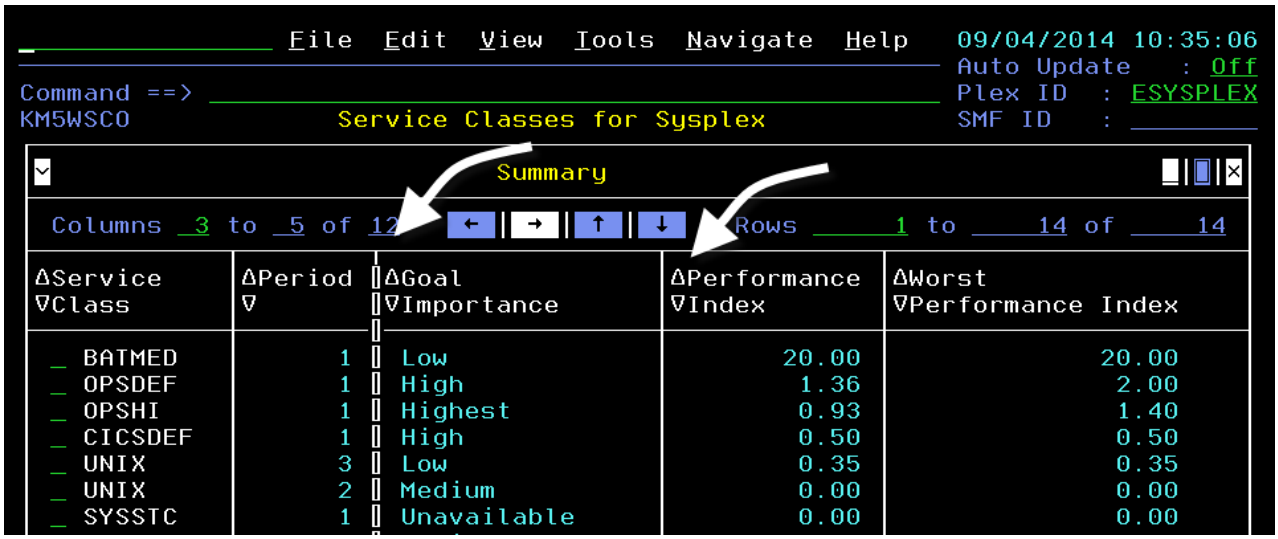
2.4 View WLM Service Class Details

Workload Manager (WLM) is an important function to monitor and analyze in a z/OS environment. The enhanced 3270 ui provides extensive information on WLM activity (both real time and in history).

a) **Position the cursor** by the Sysplex Name, **enter V** and **Press Enter**.



You are now looking at the WLM Service Class overview for the Sysplex. Note that by default the display is sorted by WLM performance index (PI). You may also sort the display by other fields, such as goal importance.



From this panel there are a variety of drills downs for more details on WLM service classes at the Sysplex level.

b) **Press F3**. You should be back at the KOBSTART panel.

2.5 View TOP Resource Consumers by a Sysplex

The Top Consumers display is a powerful analysis display the aggregates information from a variety of monitoring sources into a single combined panel. From the Top Consumers panel you may see high CPU tasks, high I/O tasks, high storage tasks, and tasks with enqueues, all from a single display. From the Top Consumers display you may drill down for more detailed analysis.

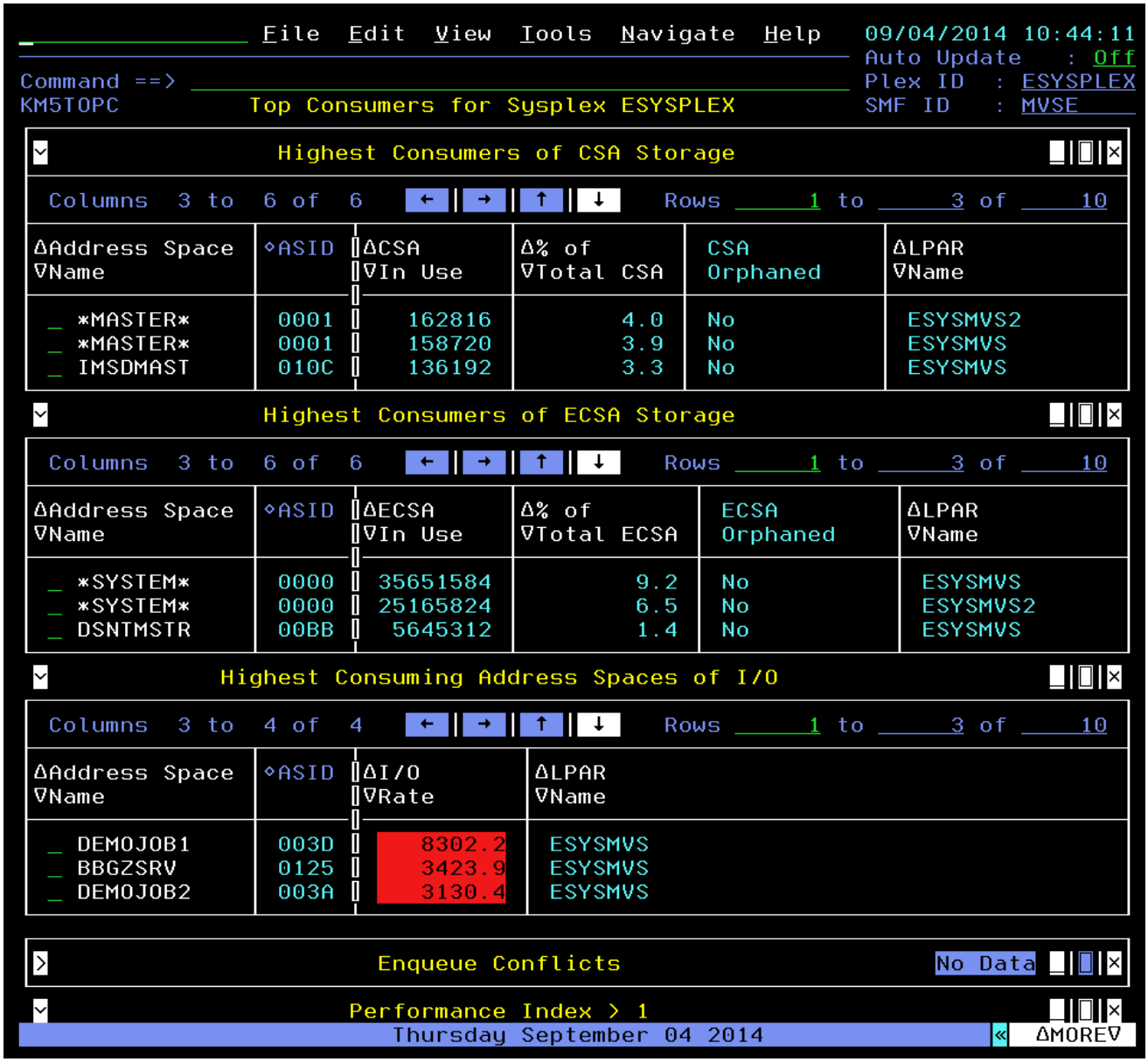
a) **Position the cursor** by the Sysplex Name, **Enter T** (for Top Consumer) and **Press Enter**

You are now looking at the Top Consumers panel (KM5TOPC).

The Top Consumer panel (KM5TOPC) is a powerful panel in that it shows the top consumers of z/OS resources across the Sysplex. It is important to note that KM5TOPC shows information for the entire Sysplex. The Top Consumers panel pulls together information on the top CPU tasks, top storage utilization tasks, highest consumers of CSA and ECSA, highest I/O tasks, enqueue conflicts, and workloads not meeting their WLM goals (as indicated by a Performance index > 1).

There is a lot of information on the KM5TOPC panel, and if you notice the MORE option on the lower right, this indicates that there is more information if you scroll the panel down.

b) **Press F8** to scroll down and see the rest of the panel.



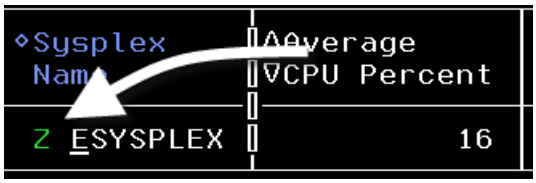
There are variety of drill downs and navigation options from this panel. Problem analysis using the KM5TOPC panel will be shown later in this lab.

c) **Press F3**. You should be back at the KOBSTART panel.

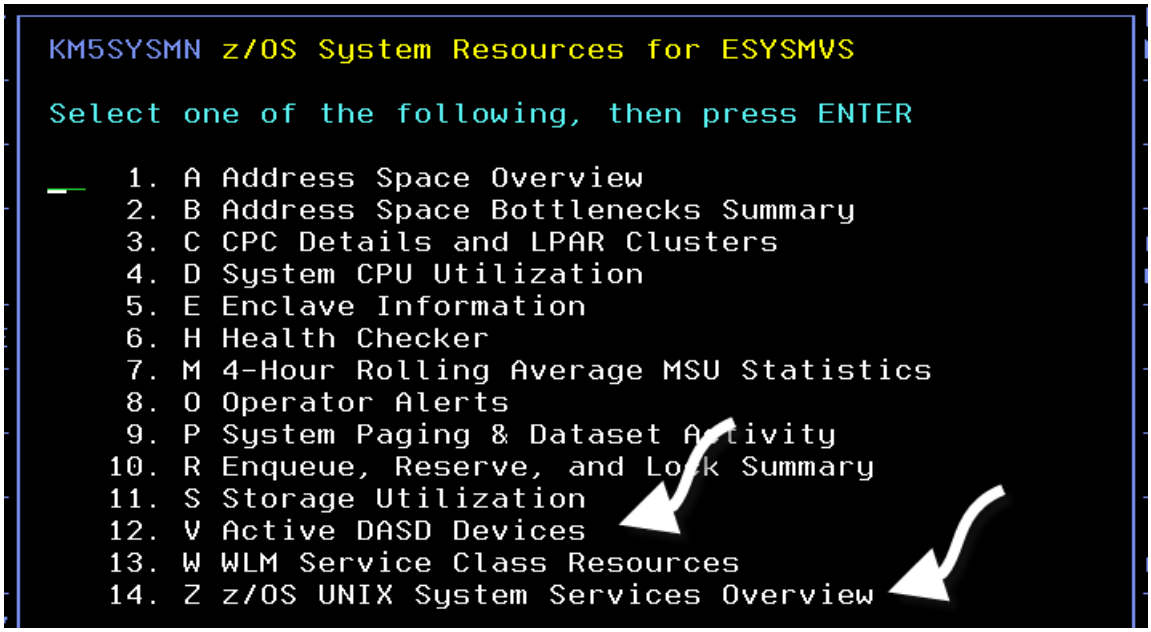
2.6 More z/OS Systems Resource Information

OMEGAMON z/OS provides extensive monitoring detail for z/OS resources. While the focus so far had been primarily at the Sysplex resource level, there are other useful z/OS related information items that may be important for you to locate.

a) **Position the cursor** by the Sysplex Name, **enter Z** and **Press Enter**.



You are looking at a popup menu that shows many drill down detail options. From this popup you may see address space detail, system CPU analysis, system enclave information, Health Checker information, zAware anomaly scores, the 4 hour MSU rolling average information, DASD device data, and z/OS Unix Systems Services information.



From this popup you can select option V to see **DASD device** information. You can also select option Z to see z/OS **UNIX System Services** information.

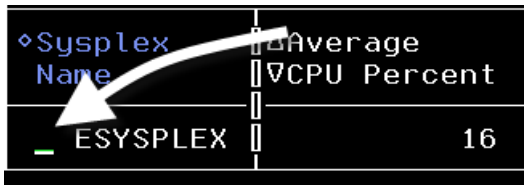
It's important to remember that if you want DASD or USS information, you need to start from the Sysplex level and then select z/OS System Resources.

b) **Press F3**. You should be back at the KOBSTART panel.

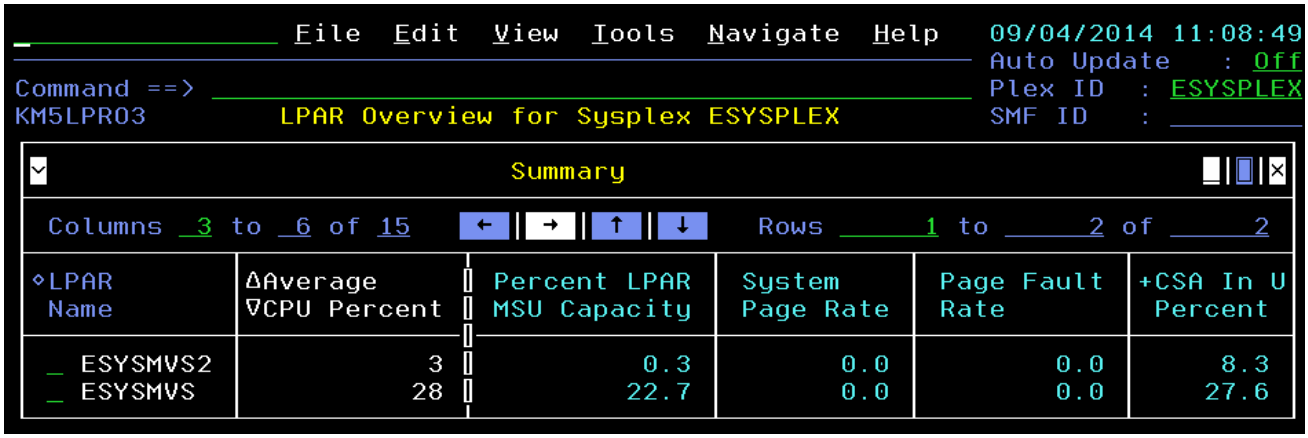
2.7 Overview from the LPAR perspective

Now that we've looked at examples of relevant information at the sysplex level, let's consider information available at the LPAR level. If you begin at KOBSTART, the LPAR Overview panel (KM5LPR03) is the default drill down option.

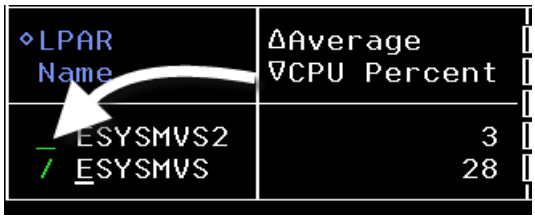
a) **Position the cursor** by the Sysplex Name, and **Press Enter.**



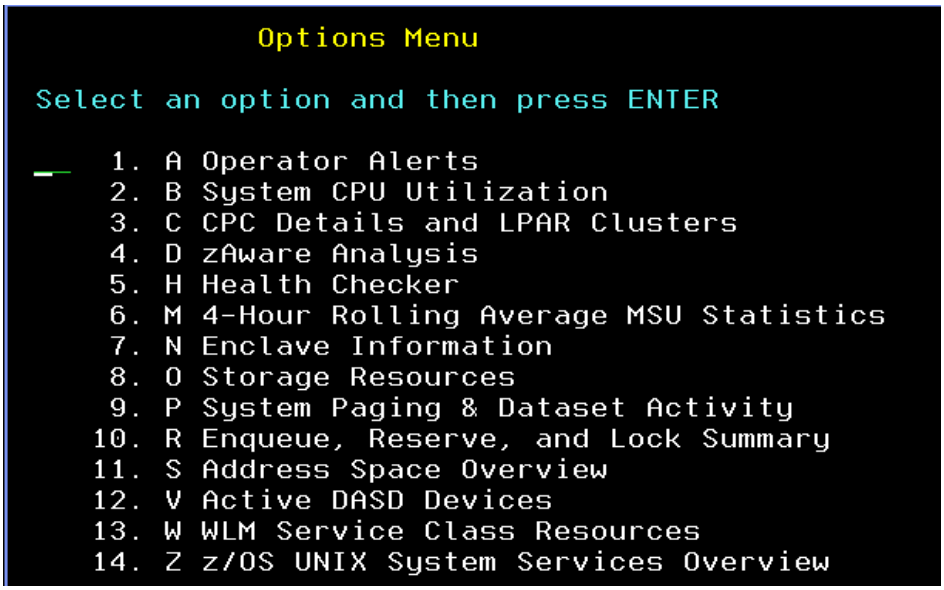
You are now looking at the LPAR Overview panel. The LPAR Overview panel (KM5LPR03) shows the LPARs in the selected sysplex environment. From this panel you can see the average CPU utilization for each respective LPAR, plus other key LPAR performance metrics.



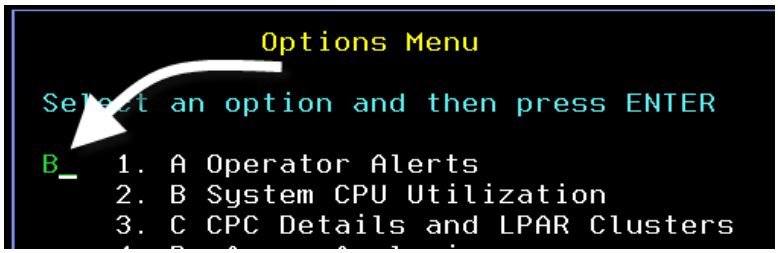
a) **Position the cursor** by one of the LPAR Names**,** **enter** / and **Press Enter**.



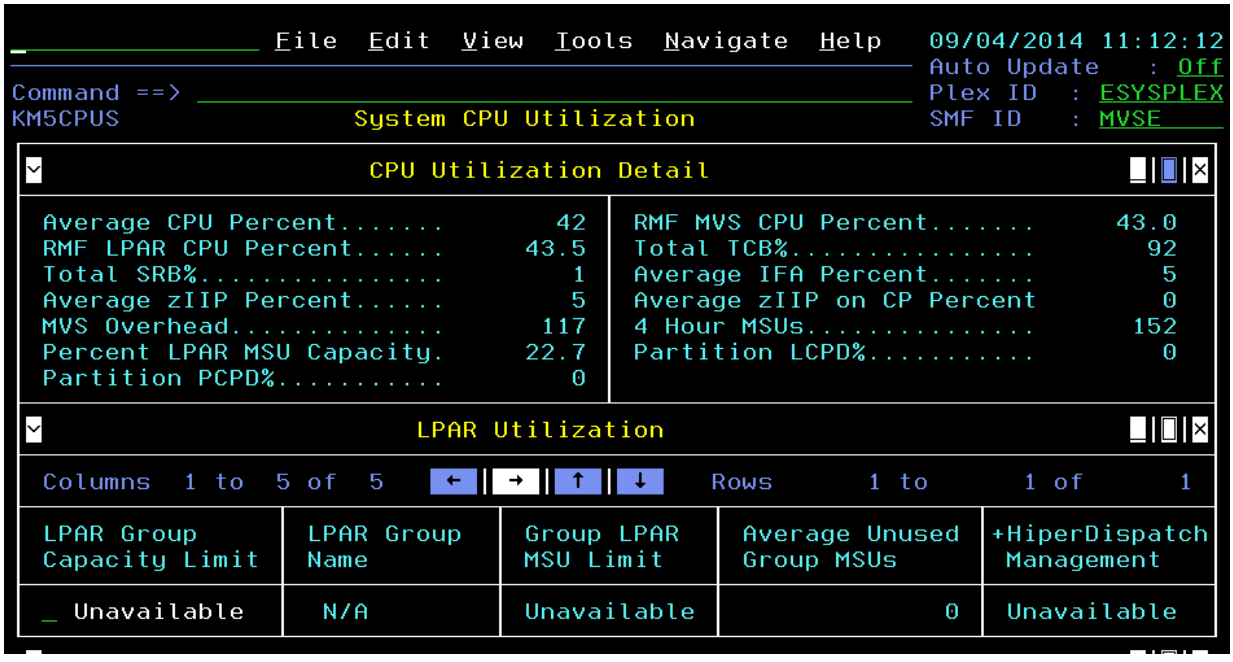
You now have the Options Menu for the LPAR. From here you can drill in on alerts, CPU information, storage utilization/paging information, WLM service class information, and, of course, the address space overview.



b) In the Options Menu, **enter B** for System CPU Utilization and **Press Enter**



You are now looking at the System CPU Utilization panel, which shows an overview of system CPU utilization, including zIIP and zAAP, and other relevant information.



Note – Some LPAR level information not available in the lab environment

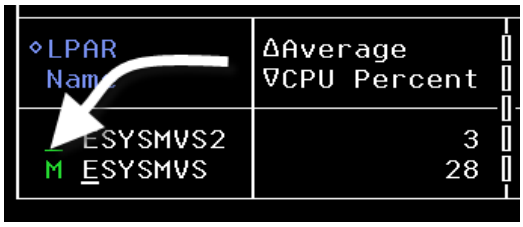
Some of the LPAR level display fields will show ‘Unavailable’. This is due to the fact that the lab environment is hosted in a z/VM environment, and some LPAR information is not available in this hardware configuration.

c) **Press F3** to return to the KM5LPR03 panel.

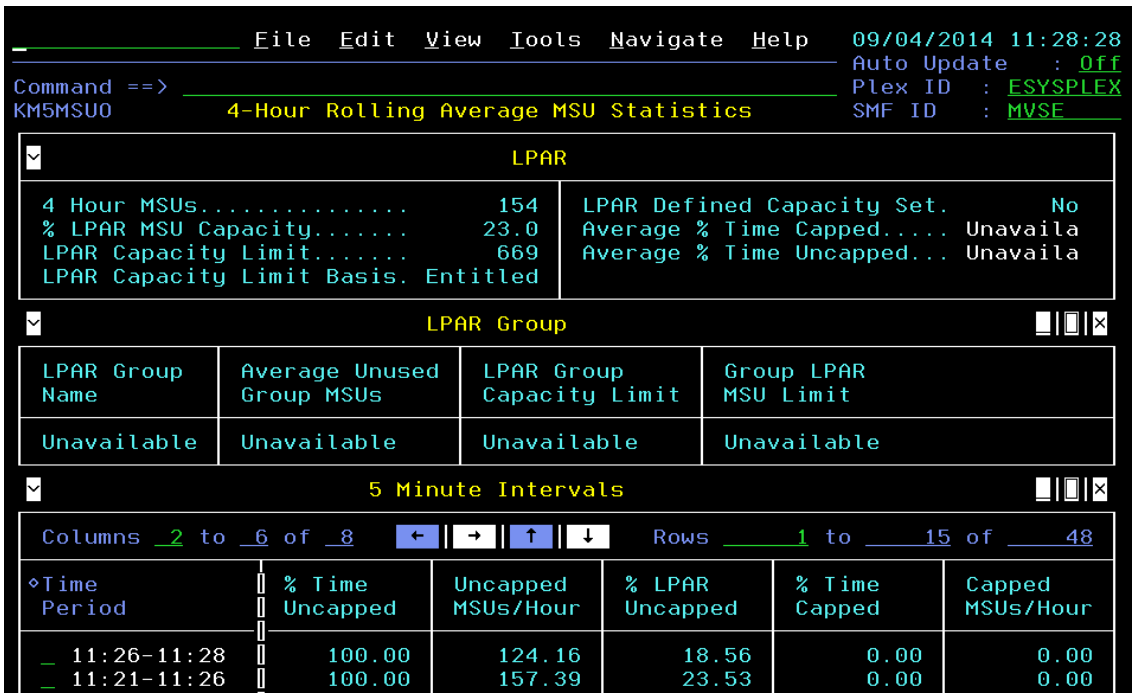
2.8 Monitoring 4-Hour Rolling Over MSU Utilization

The 4 hour MSU information is easily available from the LPAR level.

a) **Position the cursor** by the LPAR Name, **enter M** and **Press Enter**.



You are now looking at a display of 4-hour MSU utilization information, with detail data broken out on 5 minute intervals.

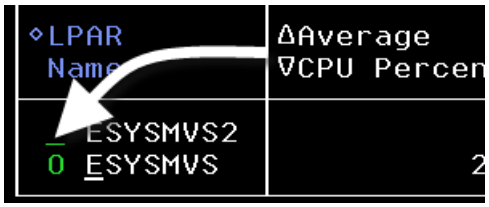


b) **Press F3** to return to the KM5LPR03 panel.

2.9 Monitoring Storage Utilization (CSA, ECSA, SQA, ESQA)

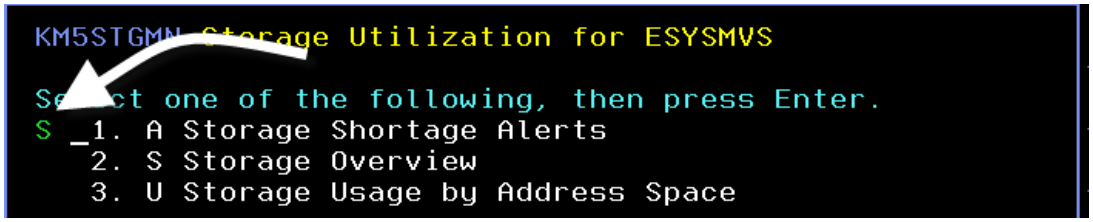
OMEGAMON z/OS provides considerable information on storage utilization. This includes real and virtual storage utilization, paging activity, CSA, ECSA, SQA, and ESQA utilization. OMEGAMON z/OS also provides detailed analysis of CSA, ECSA, SQA, and ESQA utilization, including usage by address space, and orphaned storage.

a) **Position the cursor** by the LPAR Name, **enter O** and **Press Enter**.

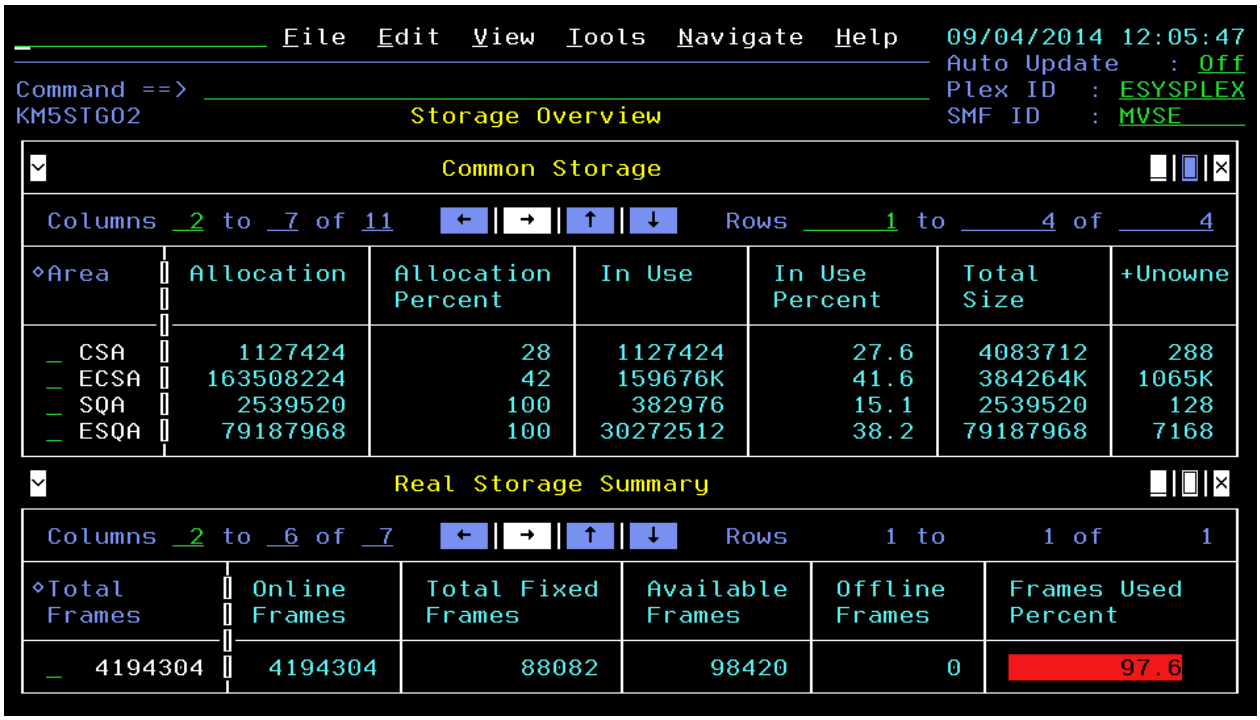


You will be presented with a popup panel.

b) **Enter S** for Storage Overview and **Press Enter**



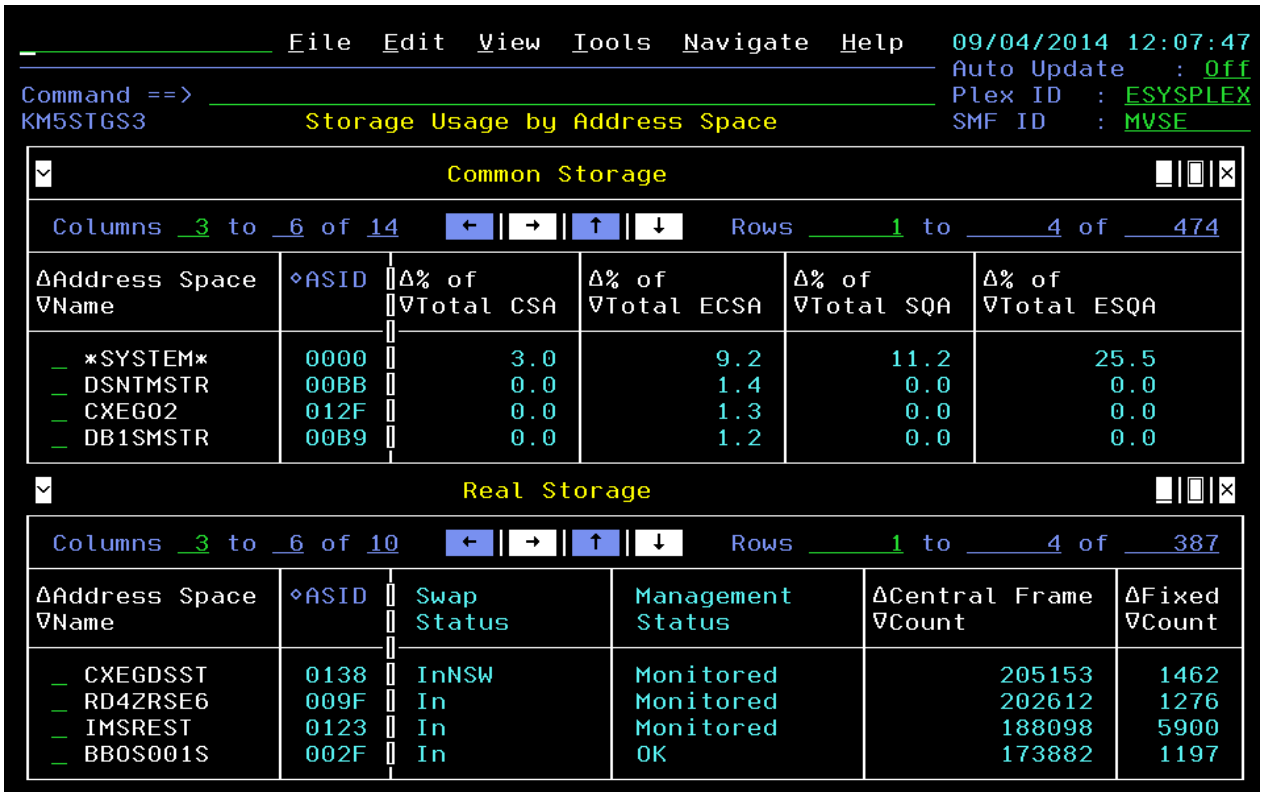
You are now looking at the Storage Overview display, showing CSA, ECSA, SQA, and ESQA utilization.



To see CSA utilization information by address space:

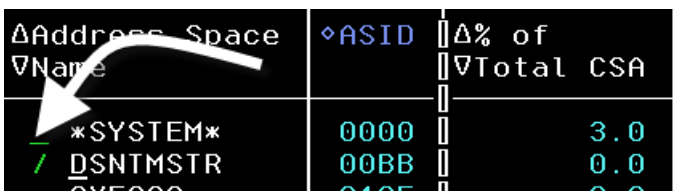
c) **Position the cursor** by CSA, enter and **Press Enter**.

You are now looking at a panel that shows a summary of storage use by address space. This includes utilization of common storage, real storage, and virtual storage, all by address space. Note that from this display you may sort the common storage display by any of total CSA, total ECSA, total SQA, or total ESQA columns.



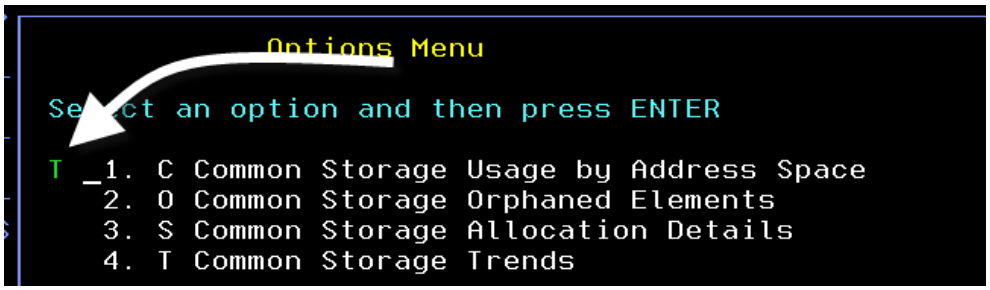
You may also see utilization trends as a drill down from this display. To see storage utilization trends:

d) **Position the cursor** by an Address Space Name **enter** / and **Press Enter**

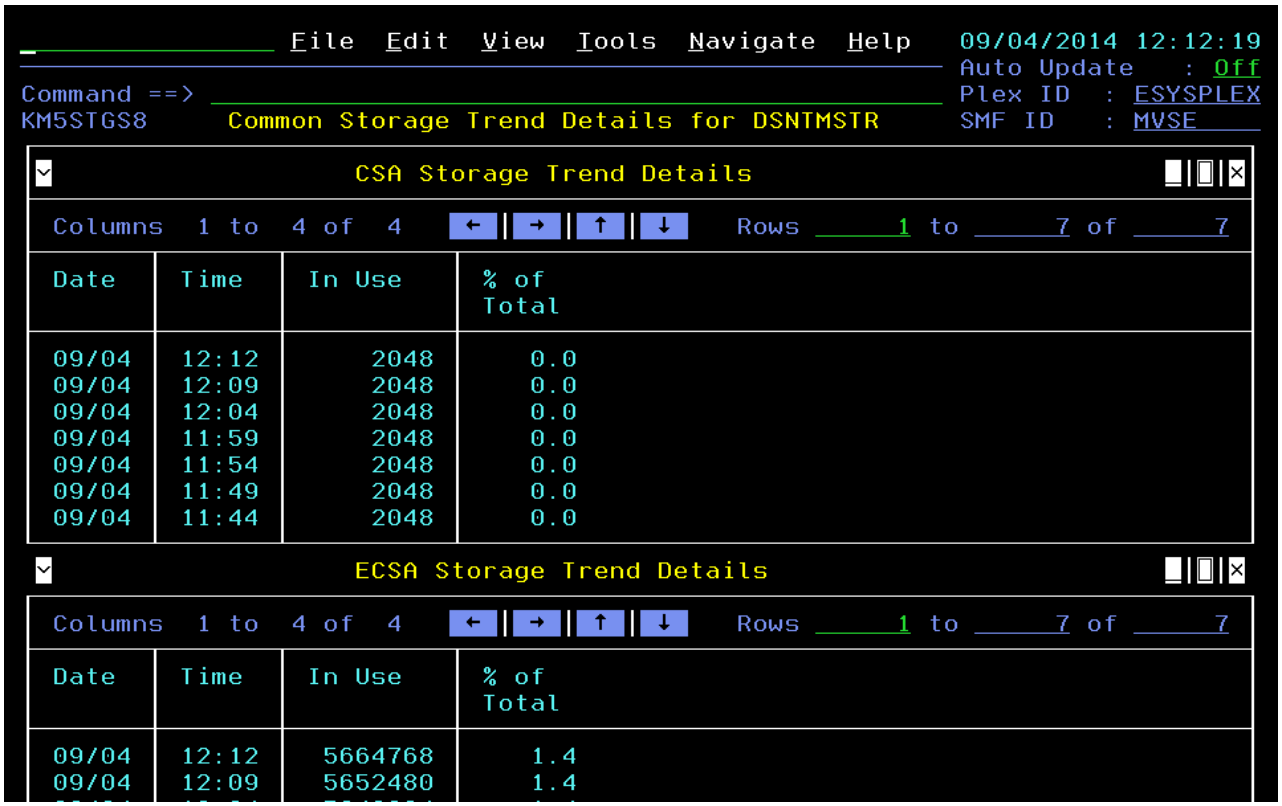


You are now looking the options popup for the storage analysis drill down.

e) From the Options Menu, **enter T** for Common Storage Trends, and **Press Enter**



You can now see CSA storage utilization trend information over time.

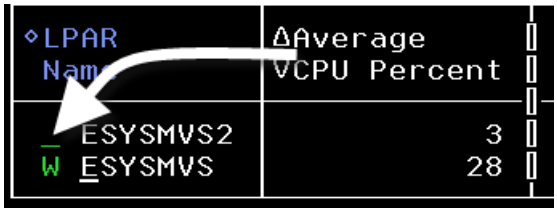


f) **Press F3,** the **Press F3** again, then **Press F3** again, to return to the KM5LPR03 (LPAR Overview) panel.

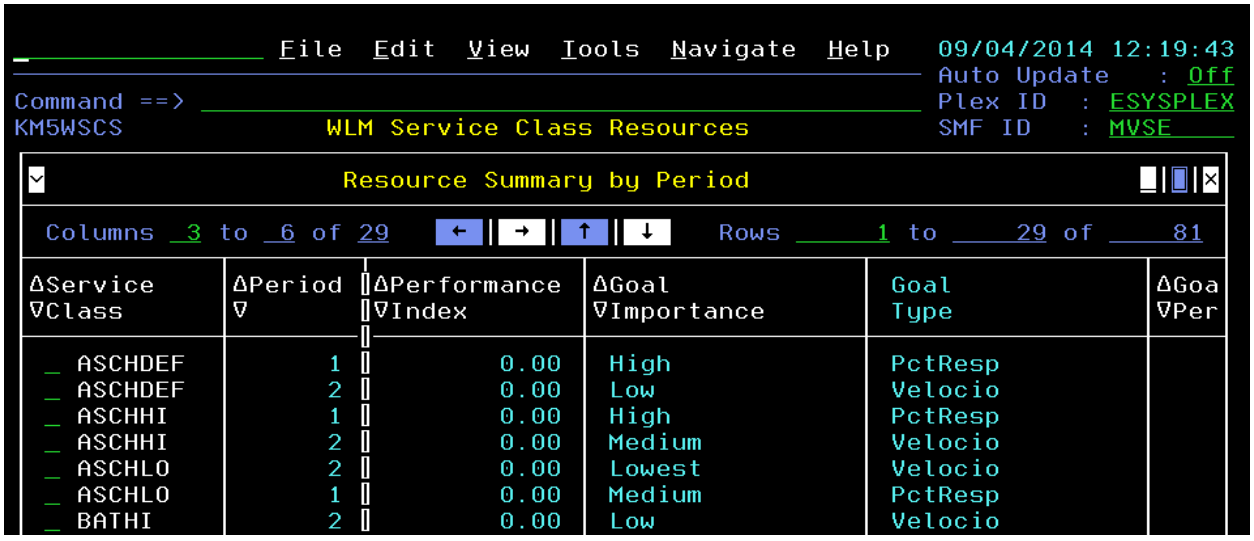
2.10 Monitoring WLM Service Class Resources

WLM is a critical process to view and monitor in z/OS. Earlier you viewed WLM Service Class activity at the Sysplex level. In this section you will view WLM Service Class information at the LPAR level.

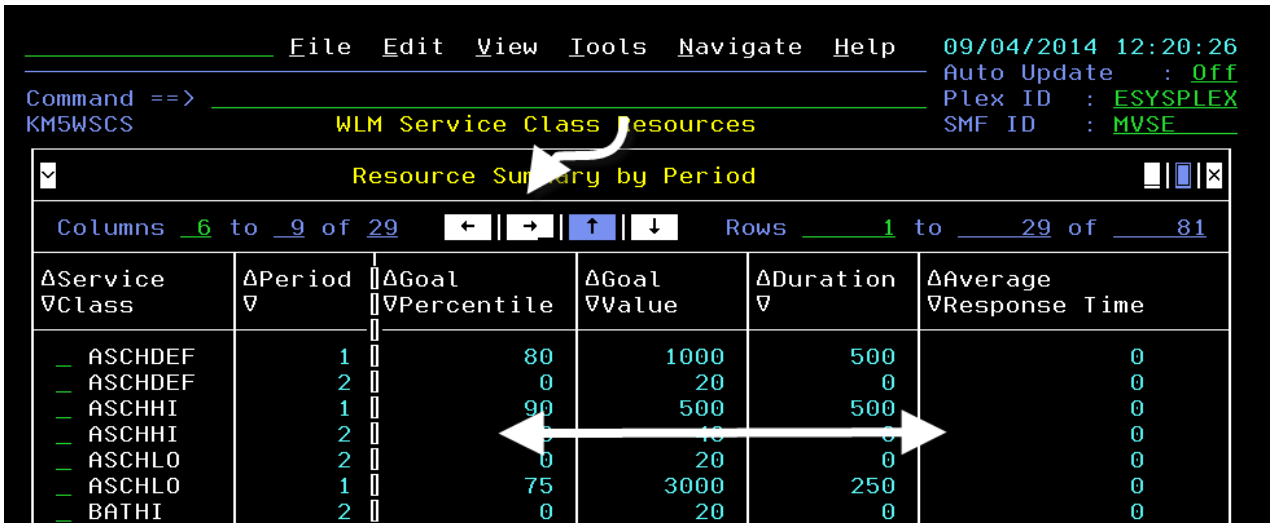
a) **Position the cursor** by the LPAR Name, **enter W** and **Press Enter**.



You are now looking at the WLM service class overview for the LPAR. Note that you can sort the display by several columns, such as Service Class, Performance Index, or Goal Importance.

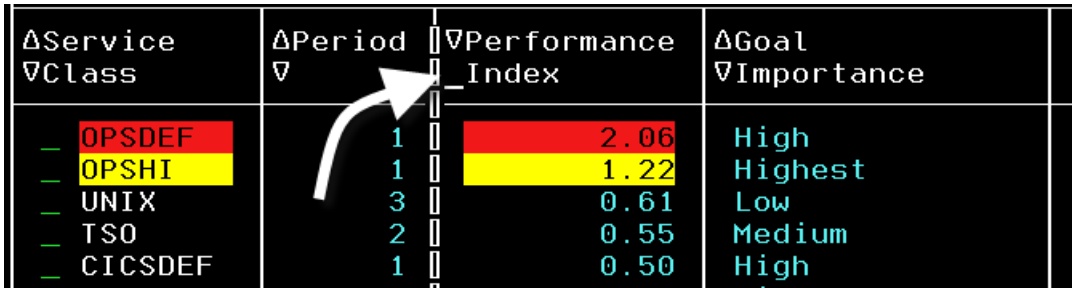


b) **Position the cursor** on the shift right navigation arrow and **Press Enter.** You may **Press Enter** multiple times to see additional information for the Service Classes.



Note how you may shift the display to the right to see additional detail on each respective service class. This includes such detail as goal type, importance and duration. Note that many of the columns are sortable.

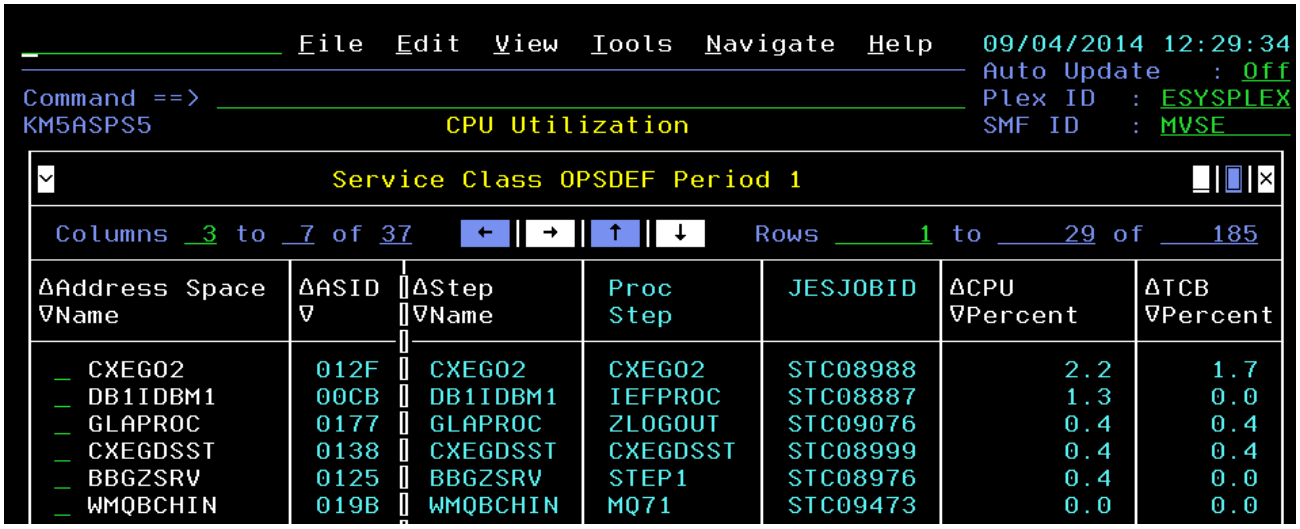
c) **Position the cursor** on the sort arrow for Performance Index **Press Enter** to sort the display by WLM performance index.



You may see detail on what z/OS tasks are running within a given service class/period. To see what address spaces or tasks are running within a given Service Class:

d) **Position the cursor** to the left of the desired Service Class**, enter C** and **Press Enter**

You are now looking at z/OS address spaces running within the given service class.

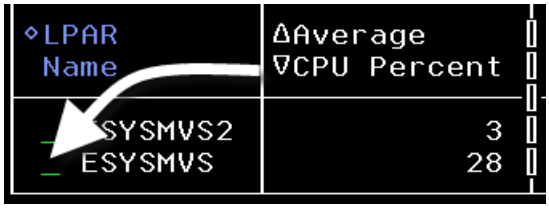


e) **Press F3,** then **Press F3** again, to return to the KM5LPR03 (LPAR Overview) panel.

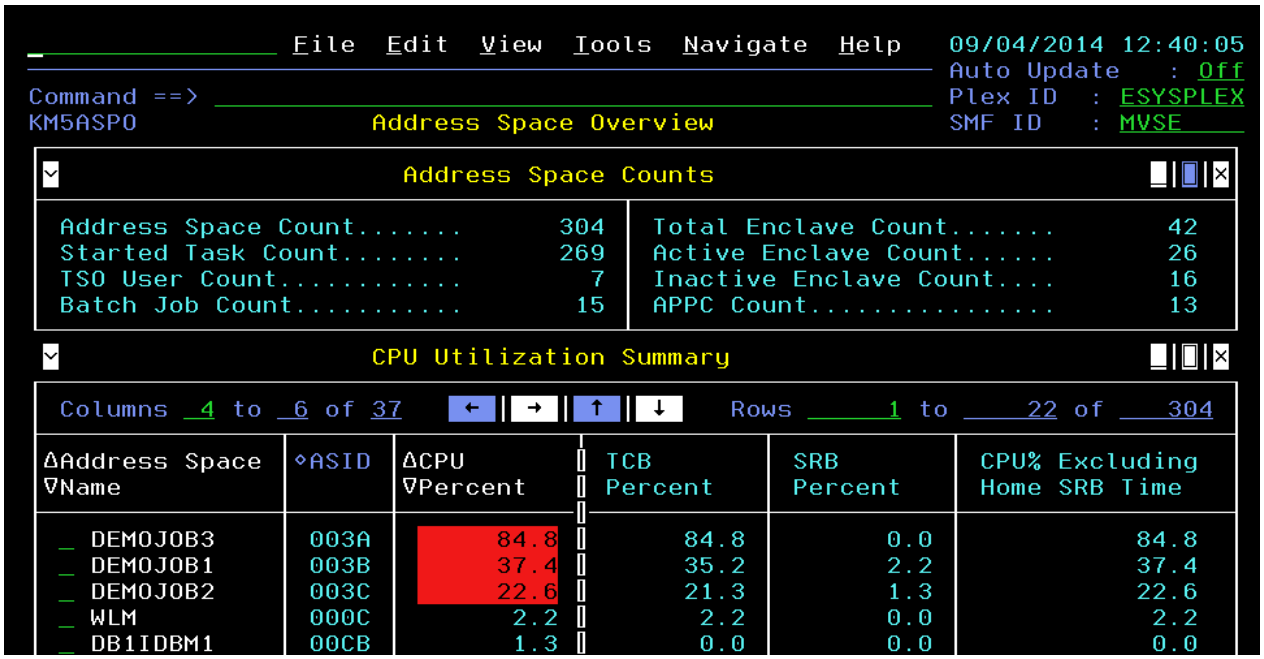
2.11 Monitoring Address Spaces

OMEGAMON z/OS provides detailed analysis of z/OS address spaces. This includes CPU analysis by task, and bottleneck analysis. This section will demonstrate Address Space level analysis.

a) **Position the cursor** by the LPAR Name, and **Press Enter**.

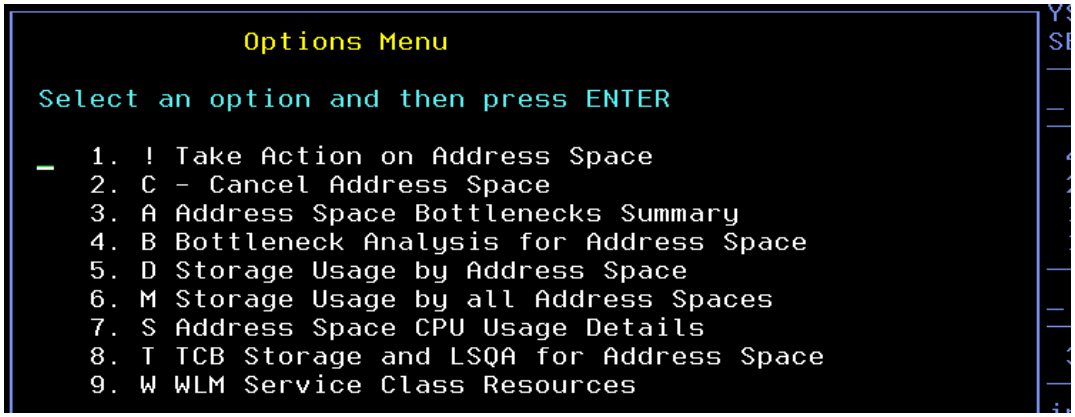


You are now looking at the Address Space overview panel, KM5ASPO.



You can sort the panel by either Address Space Name or by CPU Percent. You can also drill in on a given address space for additional detail drill downs, or to issue commands.

b) **Position the cursor** by an Address Space Name (pick one of the DEMOJOBs), enter / and **Press Enter**



Note from this Options Menu you can Cancel the address space, issue a command to the address space, as well as drill in for detail on the address space, including CPU usage, storage usage, and bottleneck analysis.

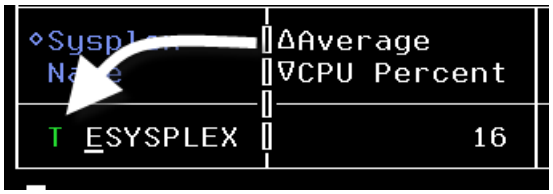
c) **Press F3** to make the popup go away. **Press F3** again to return to the LPAR Overview. **Press F3** one more time to return to the KOBSTART panel.

You have now looked at examples of information available at both the Sysplex and the LPAR level. Next you will take a look at problem analysis scenarios that demonstrate the navigation of the tool to solve common z/OS issues.

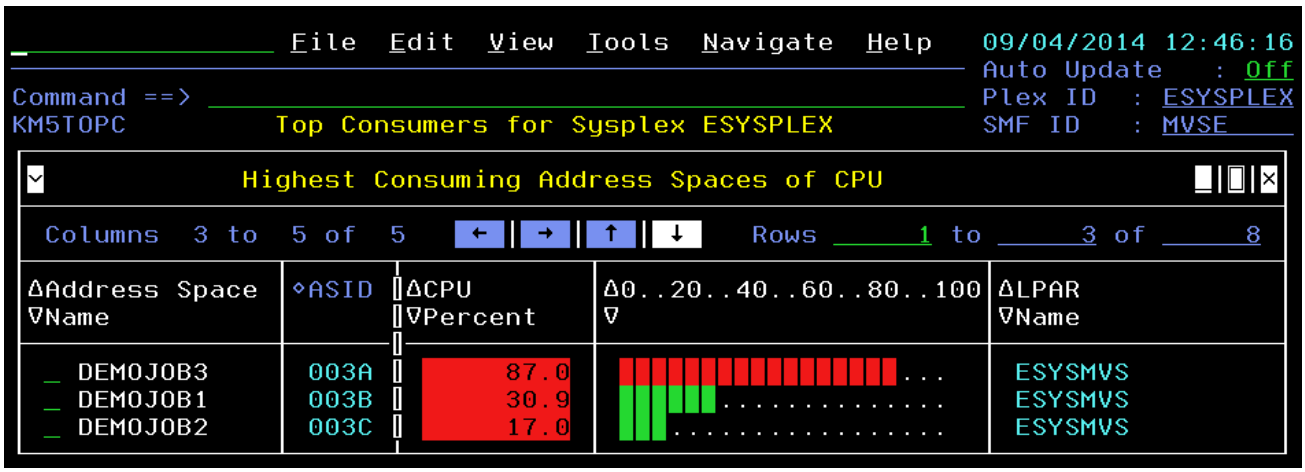
2.12 High CPU usage scenario

This scenario will show how you may use the Top Consumer panel (KM5TOPC) to identify a task using high CPU within the system. The scenario will then show how you may drill down for further analysis of the task.

a) Begin at the KOBSTART panel. **Enter T** by the Sysplex Name and **Press Enter**

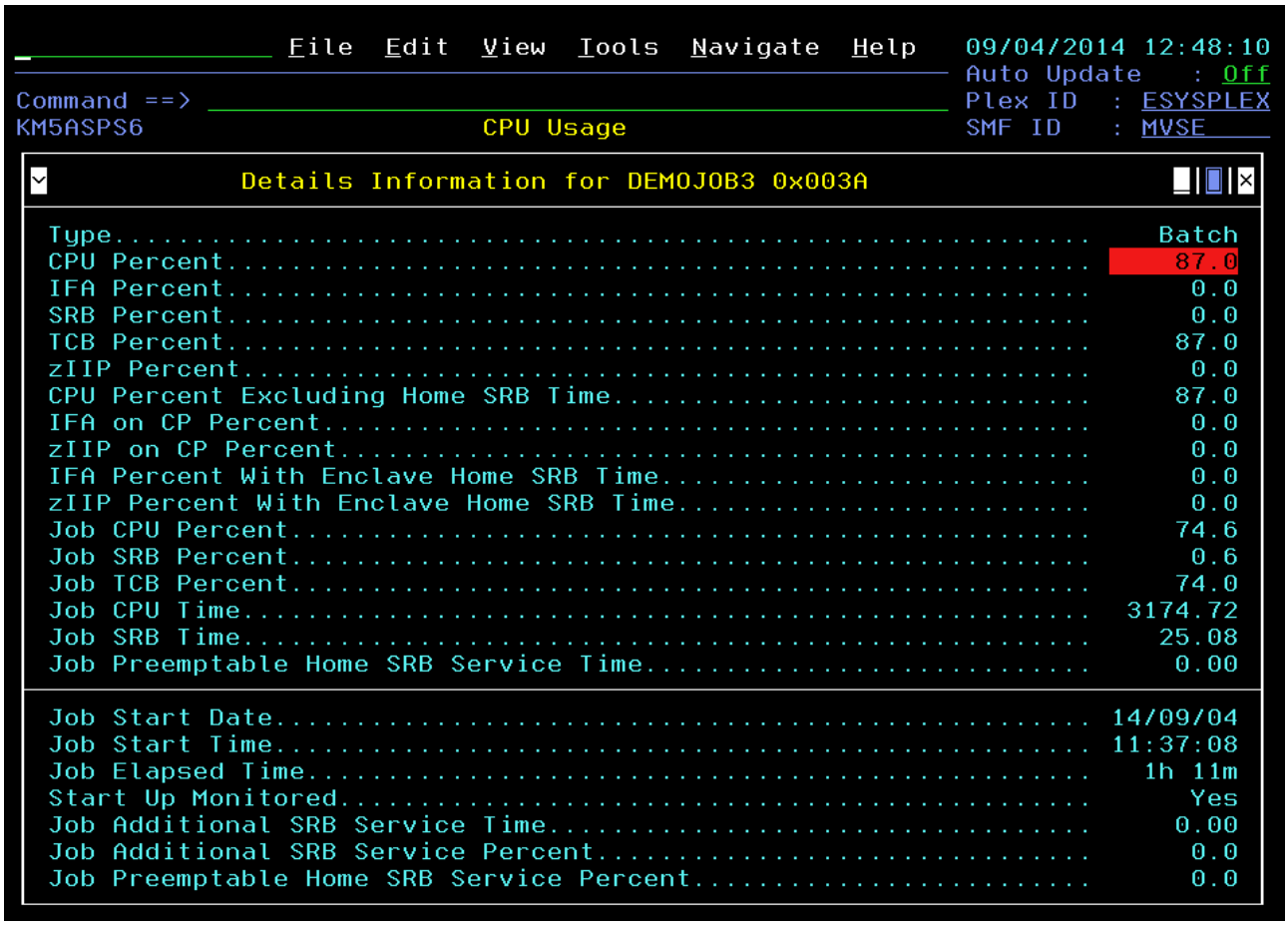


You are now looking at the KM5TOPC (Top Consumers) panel. The top portion of the Top Consumers panel shows the Highest Consuming Address Spaces Of CPU across the Sysplex.



b) **Position the cursor** by an Address Space Name (pick one of the DEMOJOBs), and **Press Enter**

You are now looking at the CPU Usage panel for the address space (KM5ASPS6). This panel shows several items of information about the task, such as task type (batch job, started task, etc), current CPU percent, TCB percent, and zIIP processor utilization (if any) for the task.

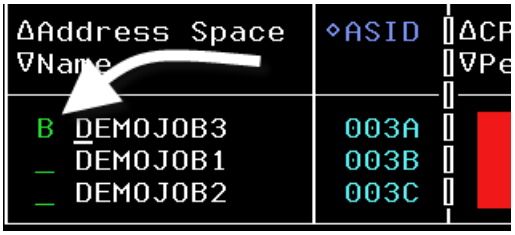


c) **Press F3** to return to the Top Consumer panel.

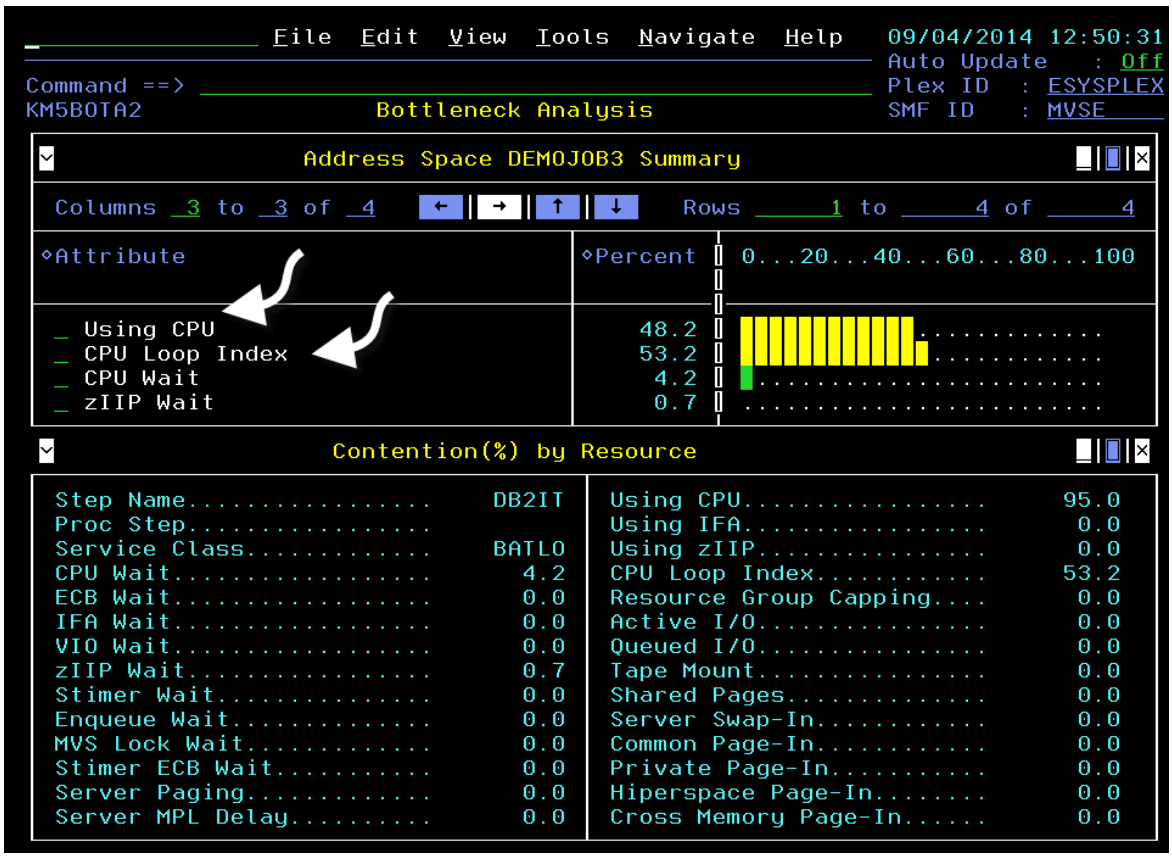
2.13 How to Invoke Bottleneck Analysis

Bottleneck Analysis is an analytic function of OMEGAMON z/OS. Bottleneck Analysis will determine what a workload on z/OS is doing, what resources the workload is consuming, and where that workload is spending it's time. To see address space level bottleneck analysis information:

a) **Position the cursor** by the Address Space Name (pick one of the demo jobs), **enter B** and **Press Enter**



You are now looking at the Bottleneck Analysis panel for the task. This panel will show relevant information that will allow you to determine where the task is spending it's time. Focus on the section of the panel that shows Contention(%) by Resource. This information will indicate the relative percentage of time the task using CPU versus waiting for CPU. It will show resource waits, such as I/O waits, paging waits, and zIIP processor waits.



Note in the example above the percentage of time the task is using CPU. You may also note a number called CPU Loop index. CPU Loop Index indicates the likelihood that a task is in a loop. The higher the number (up to 100) the greater the likelihood that a task is in a CPU loop.

b) **Press F8** to scroll the display.

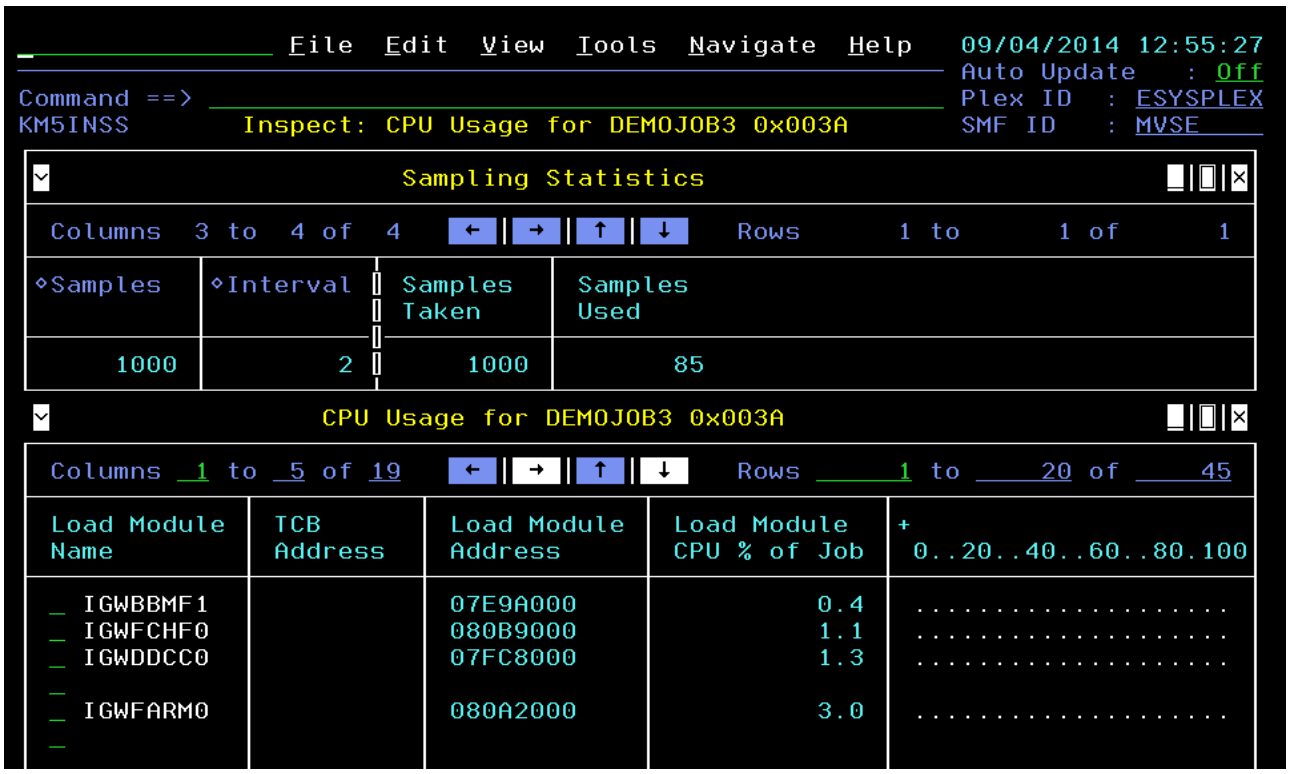
This portion of the panel will show other bottleneck reasons for the task, including JES2 delays, HSM delays, and various SWAP reasons.

2.14 Using The INSPECT Function - Task CPU Utilization Analysis

a) **Press F7** to scroll the panel back up.

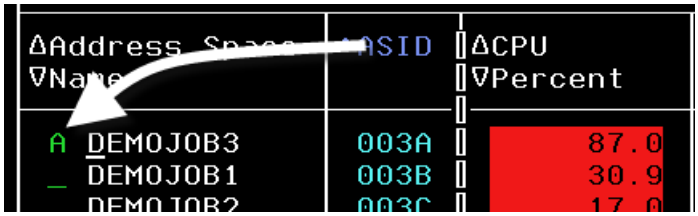
b) **Position the cursor** at the top of the panel next to one of the relevant CPU wait reasons, and **Press Enter**.

You will then be navigated to an INSPECT CPU panel (KM5INSS). This panel will show CPU usage within the task by load module and TCB.

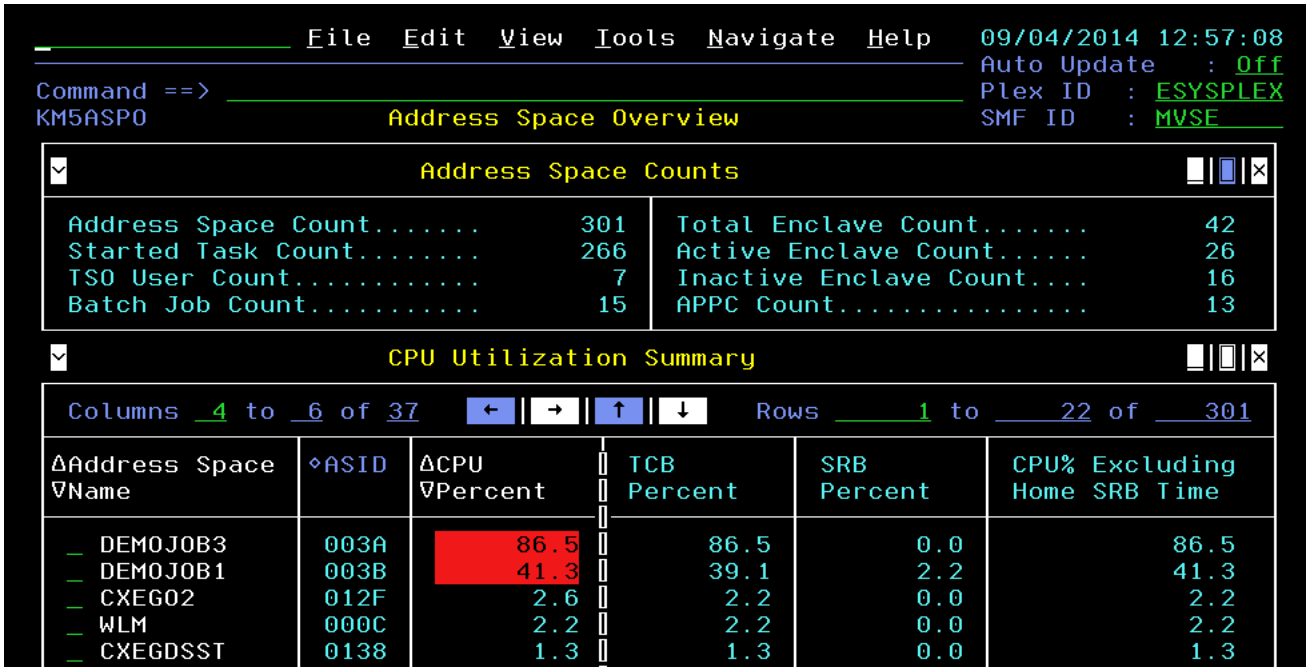


c) From the INSPECT panel, **Press F3** then **Press F3** again to return to the Top Consumer panel.

d) **Position the cursor** by the Address Space Name, **enter A** for Address Space Overview and **Press Enter**.

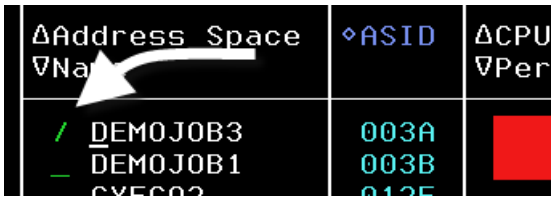


You are now looking at the Address Space Overview panel. You may recall this panel from earlier in the lab. You can sort the panel by either Address Space Name or by CPU Percent. You can also drill in on a given address space for additional detail drill downs, or to issue commands.

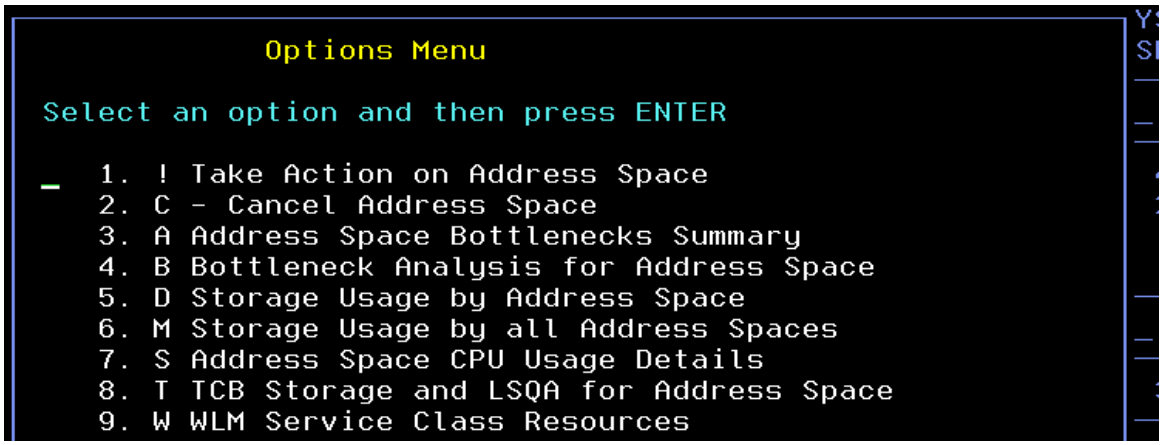


2.15 Take Action or Take Control on Address Space

a) **Position the cursor** by an Address Space Name, **enter** / and **Press Enter**.



If you want to cancel the task, or issue a command to the task, you can do it from this popup menu.

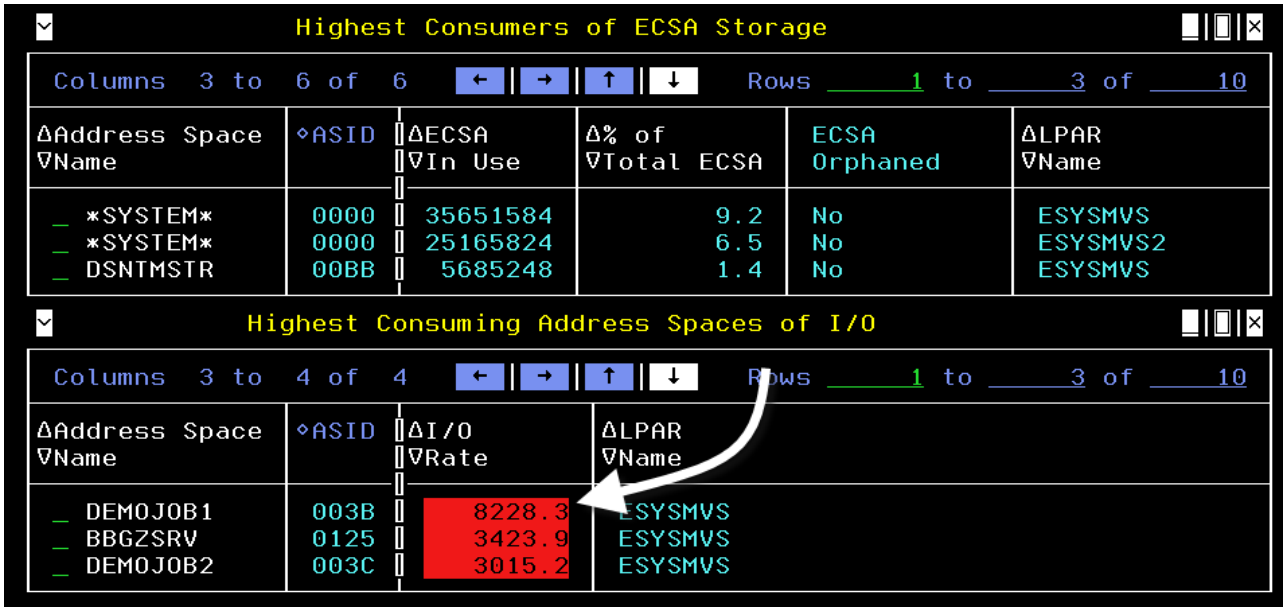


b) **Press F3** then **Press F3** again to return to KM5TOPC.

2.16 High I/O rate task scenario

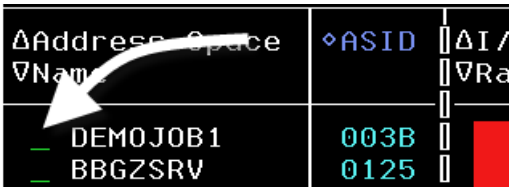
This scenario will show how you may use the Top Consumer panel (KM5TOPC) to identify a task doing a relatively high amount of I/O within the sysplex. The scenario will then show how you may drill down for further analysis of the task.

a) Begin at the Top Consumers panel (KM5TOPC). To see the Highest Consuming Address Spaces of I/O portion of the panel you will need to scroll down. **Press F8** to scroll the panel down.

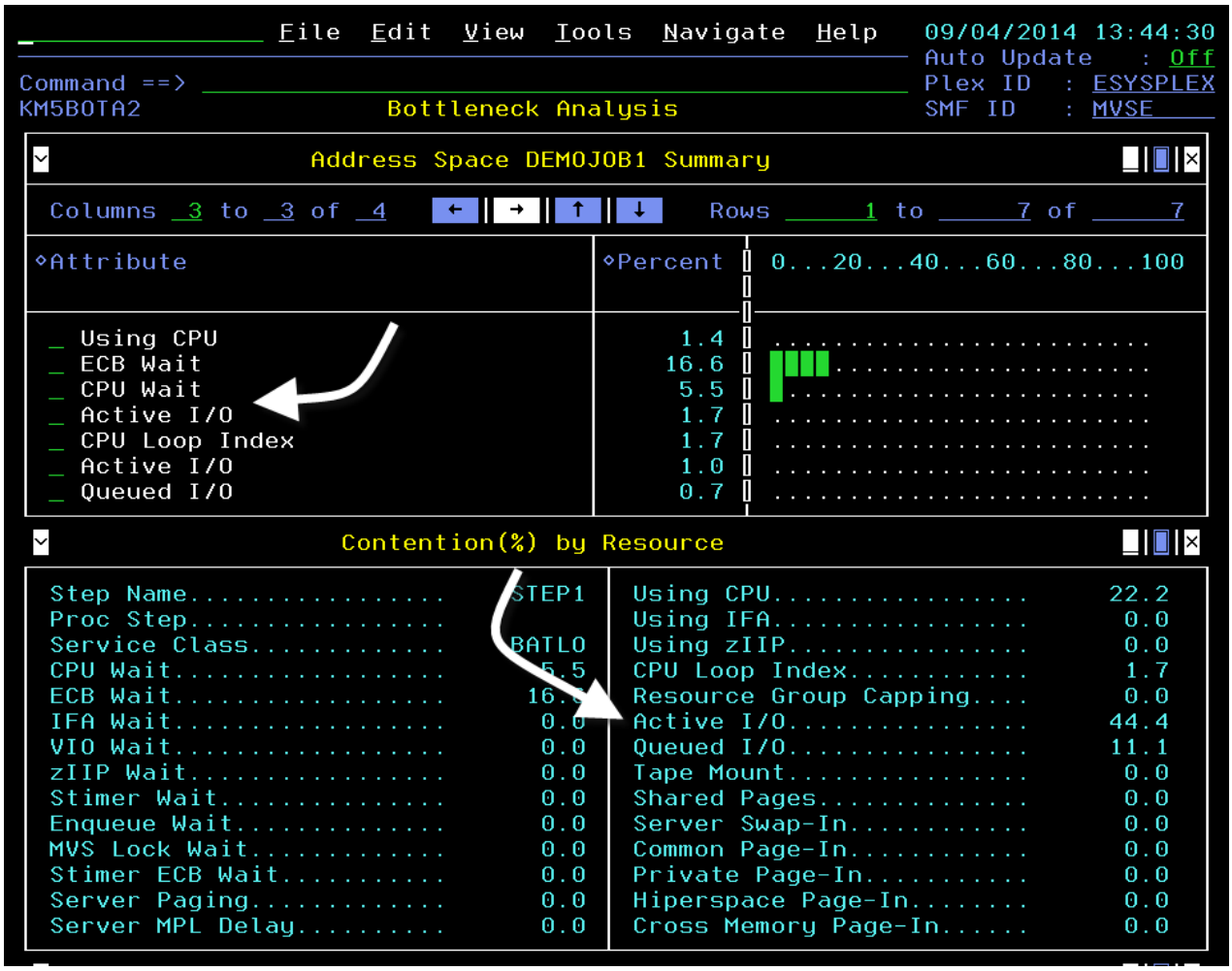


Once you have scrolled down you should be able to see the tasks on the system that are performing the most I/O at the current time.

b) **Position the cursor** by the Address Space Name and **Press Enter**



You are now looking at the Bottleneck Analysis display for the task. Notice in this example the % Contention for Active I/O.

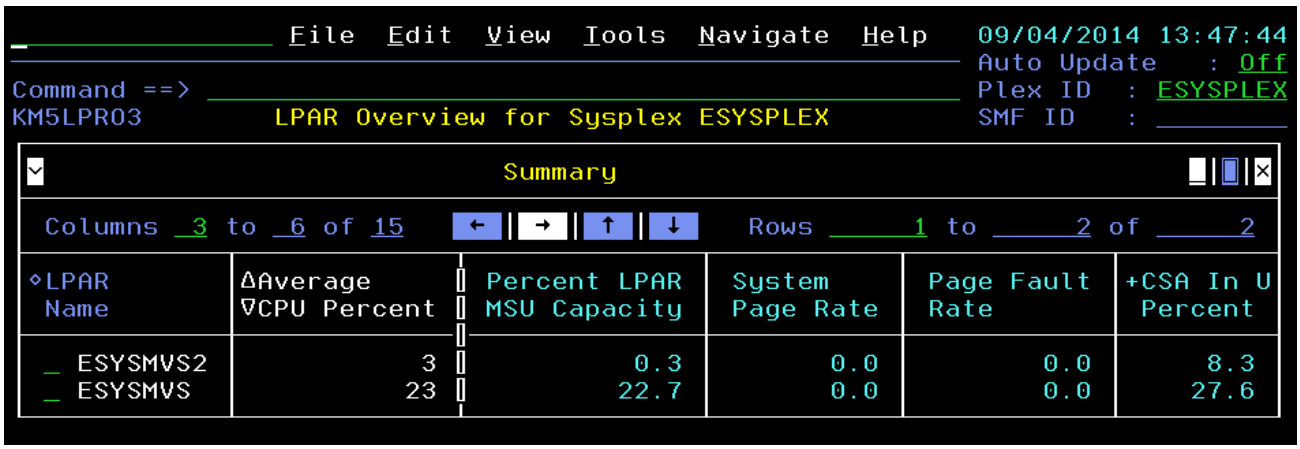


Next you may look at I/O activity from a WLM perspective on the z/OS system.

c) **Press F3** then **Press F3** again to return to KOBSTART

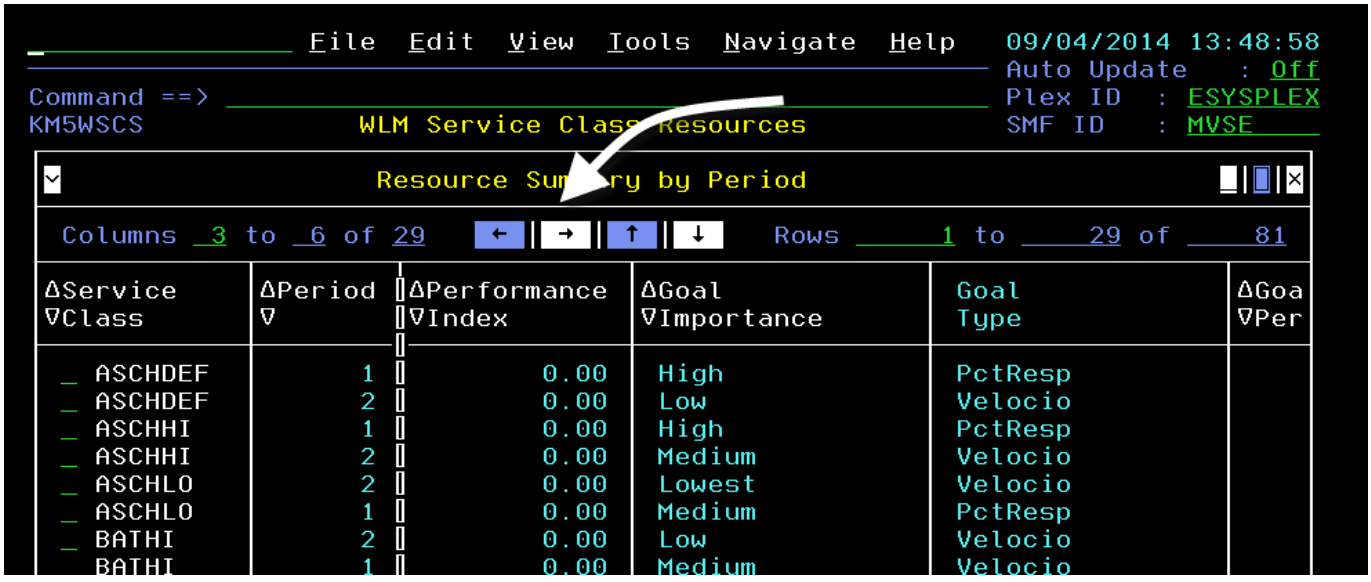
d) **Position the cursor** by the Sysplex Name and **Press Enter**.

You are now looking at the LPAR Overview.



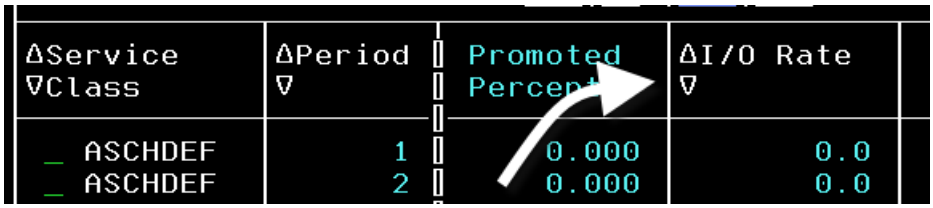
e) **Position the cursor** by an LPAR Name noted earlier for the job, **enter W** and **Press Enter**.

You are now looking at the WLM Service Class Resource Summary panel. This panel lists all the service classes running on the LPAR, and the resource utilization by type for each WLM Service Class.

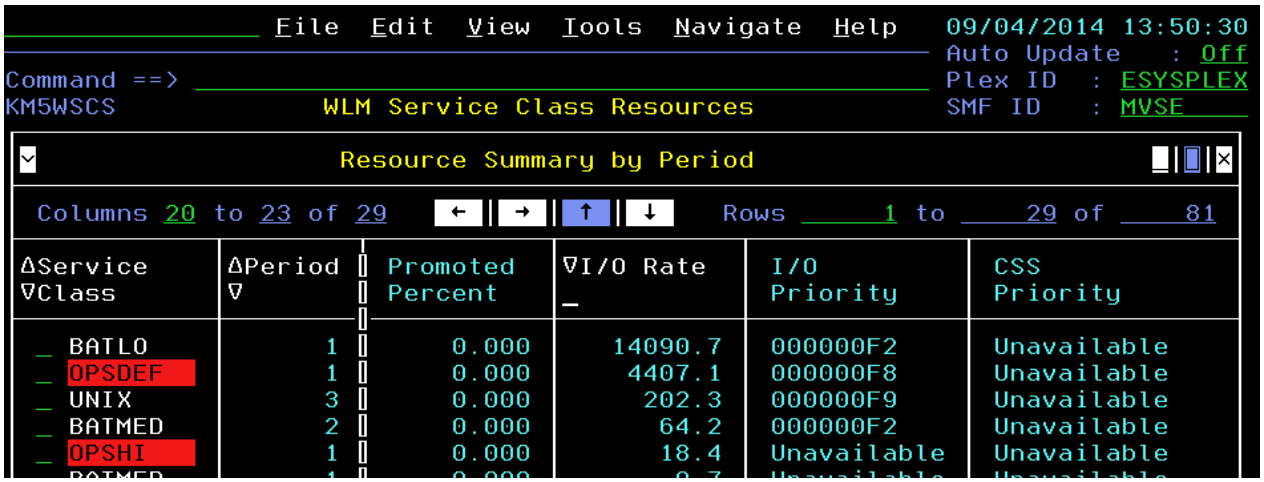


f) **Press F11** multiple times until you see the I/O Rate information for the WLM Service Class.

g) **Position the cursor** on the I/O Rate sort arrows and **Press Enter** to sort the display.

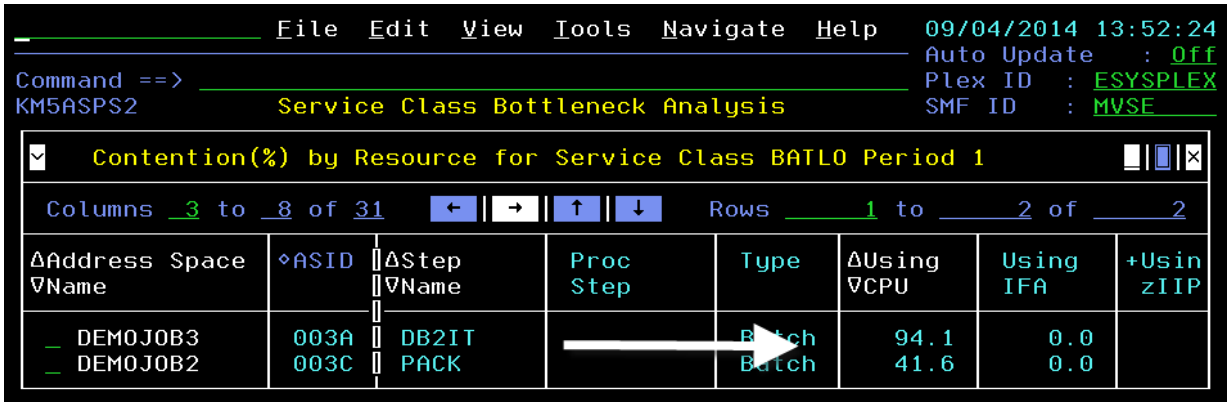


You are now looking at the WLM Service Class display sorted by I/O Rate.



h) To see detail on what tasks are contributing to the high I/O workload, **position the cursor** by a Service Class**, enter** B and **Press Enter.**

You are now looking at the Bottleneck Analysis information for each address space within the given WLM Service Class. To see the I/O information for each address space you may need to Press F11.



From this display you see the Active I/O and Queued I/O information by address space.

To issue an action on the task, **position the cursor** by an Address Space Name, enter / and **Press Enter.**

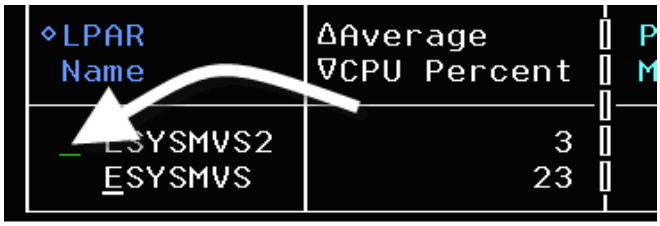
i) **Press F3** then **Press F3** again to return to panel KM5LPRO3

2.17 Using Embedded Data for performance analysis – New in V5.3

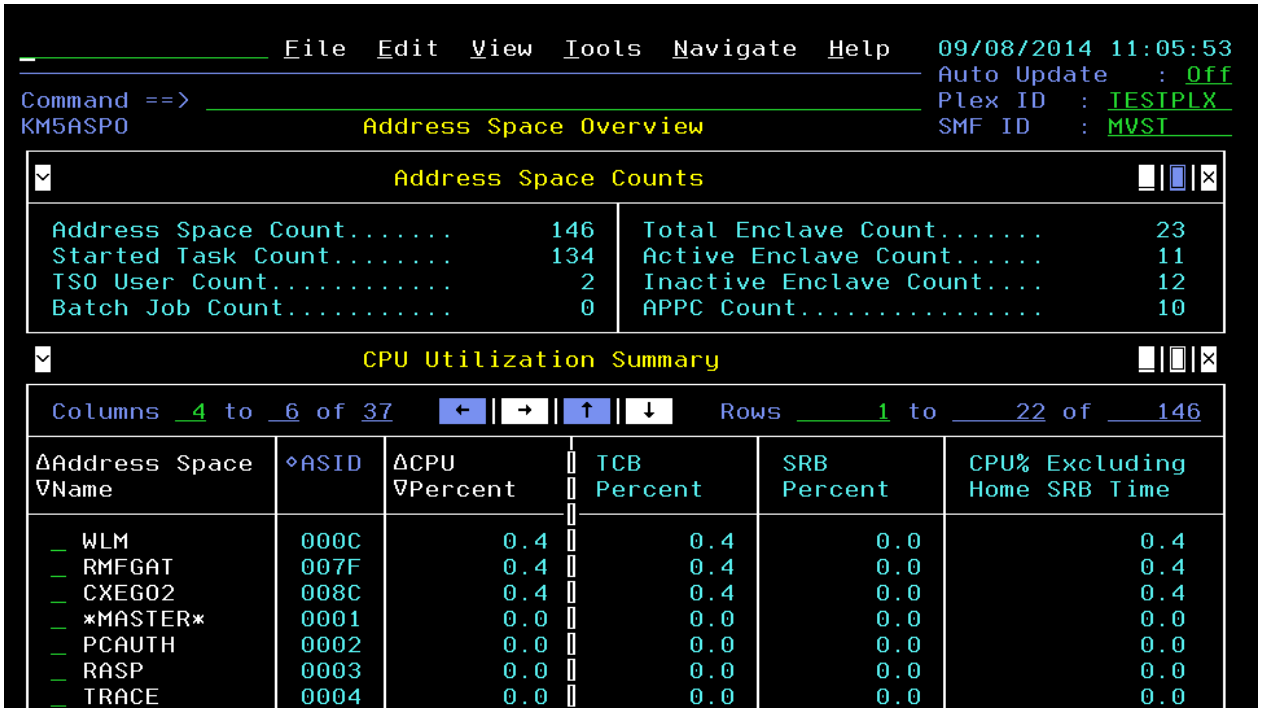
This scenario will show how you can exploit a new feature of OMEGAMON z/OS V5.3 called embedded data. Embedded data exploits the unique integration capabilities of OMEGAMON to pull together information from multiple monitoring sources, and enable fast easy transparent navigation through the e3270 user interface.

As an example, assuming you have a monitoring environment that includes both OMEGAMON z/OS and OMEGAMON CICS, embedded data allows you to easily navigate between z/OS monitoring panels and CICS monitoring panels.

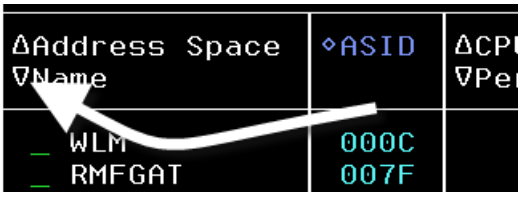
a) **Position the cursor** by the LPAR name and **Press enter**



You are now looking at the KM5ASPO Address Space Overview panel. This panel lists all the address spaces active on the chosen LPAR.



b) **Position the cursor** on the Address Space Name sort arrows **Press enter** to sort

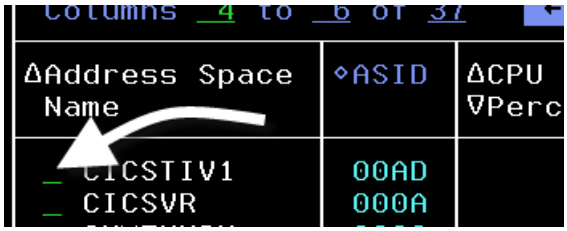


You should now have a display sorted by address space name.

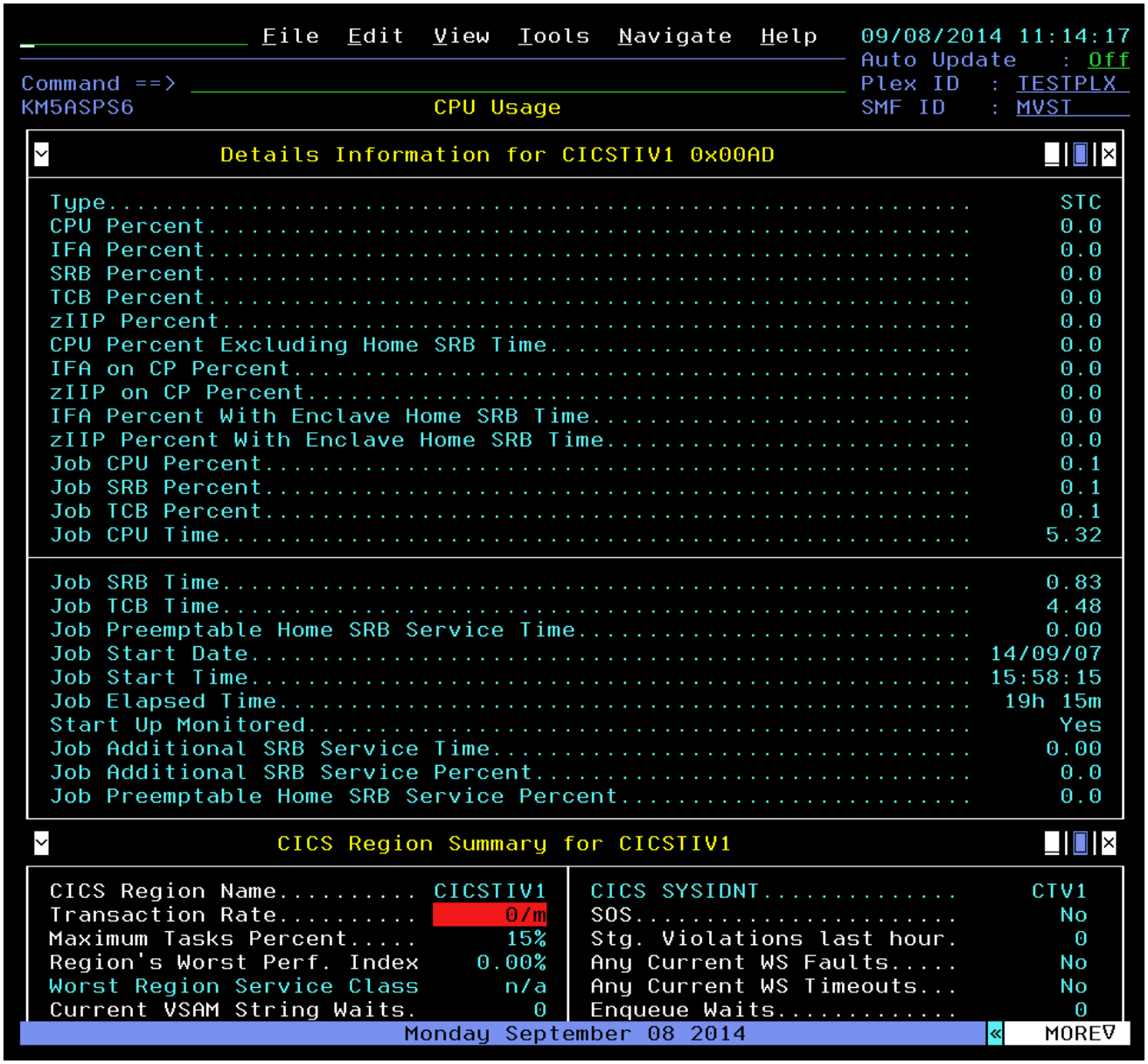
c) **Press F8** to scroll the panel to find a CICS region

Note – CICS region names will start with CICS

d) **Position the cursor** by a CICS region name **Press enter**



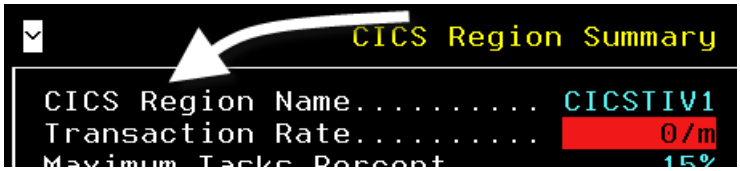
You are now looking at the address space detail for the selected CICS region.



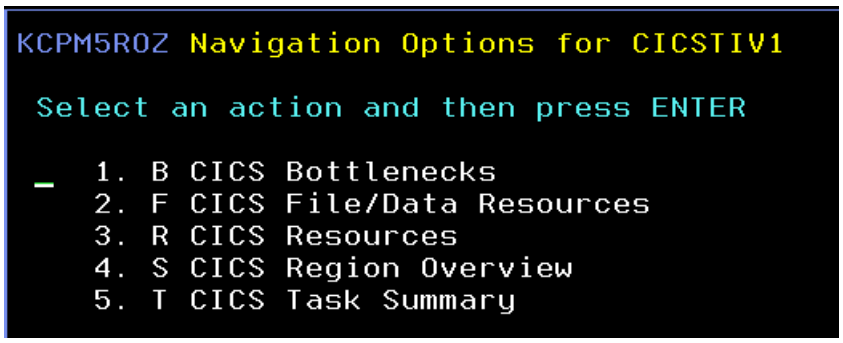
Note that if you have selected a CICS region, CICS specific information will appear at the bottom of the panel (assuming that OMEGAMON CICS is installed).

From this panel you may drill down directly into several different relevant CICS detail displays.

e) **Position the cursor** on the CICS region name (highlighted in white) and **Press enter**

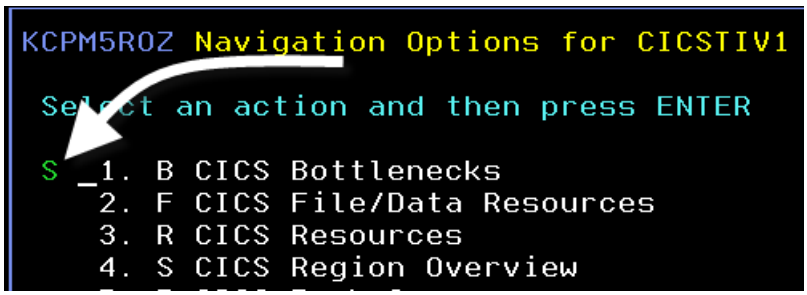


You will then be presented with a popup menu that list the relevant drill down options for CICS detail.

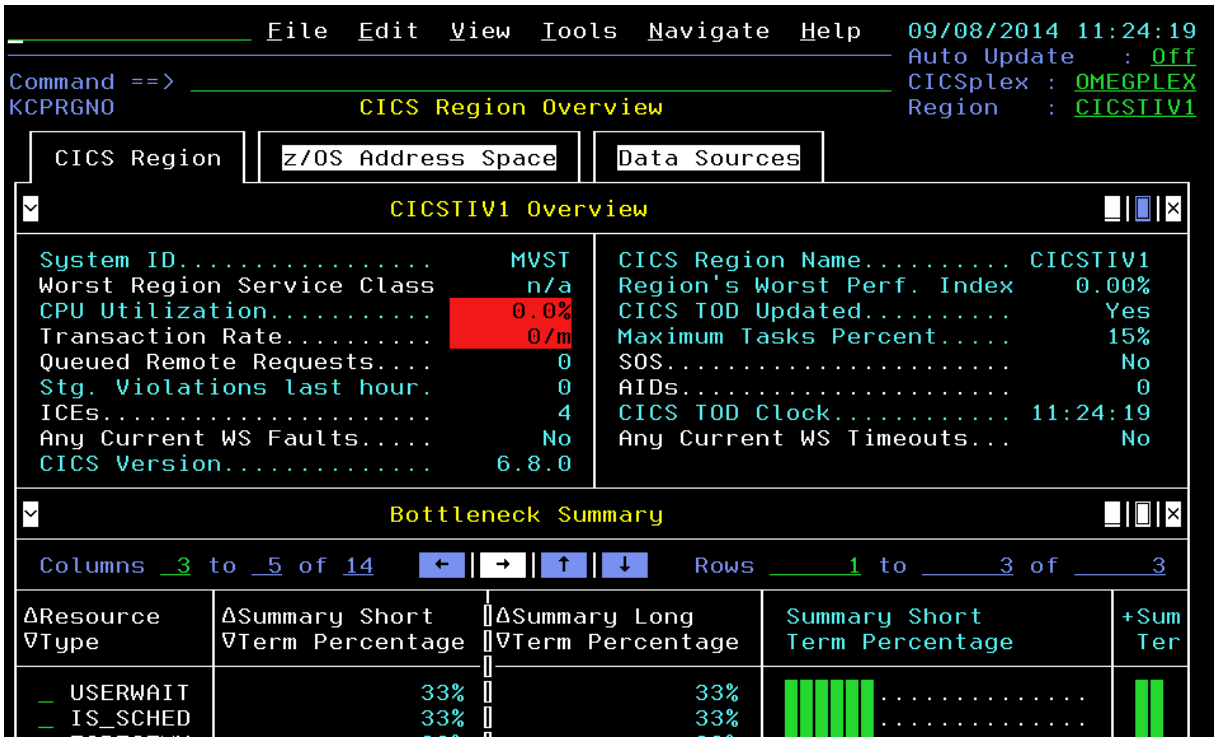


From this popup you can drill down directly to see a CICS region overview, see active CICS tasks in the region, or look at other CICS resources.

f) **Position the cursor** Enter S (for CICS Region Overview) and **Press Enter**



You are now looking at the CICS region overview panel (KCPRGNO).



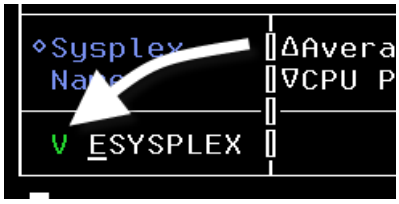
g) **Press F3** four times to return to the KOBSTART panel

2.18 z/OS Historical performance analysis – New in V5.3

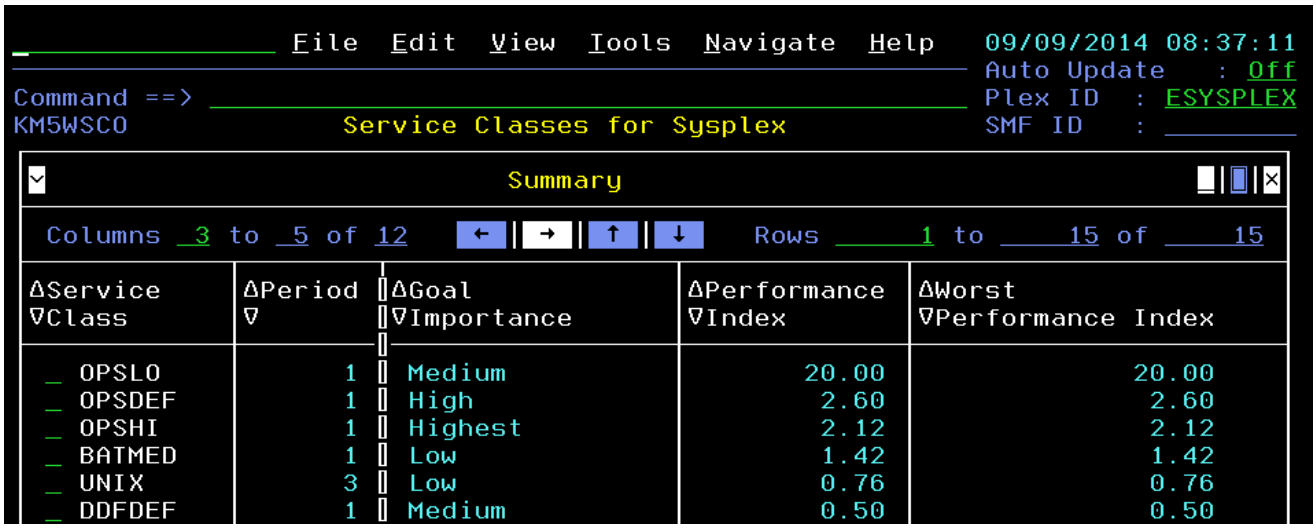
This scenario will demonstrate the new historical display facilities in the e3270 user interface. OMEGAMON z/OS V5.3 uses RMF as the mechanism for history data collection. History data collected by RMF, such as system, CPU, WLM service class, and address space history may now be displayed using e3270 user interface.

To see history data, beginning on the KOBSTART panel:

a) **Position the cursor** by the Sysplex name **Enter V** and **Press Enter**

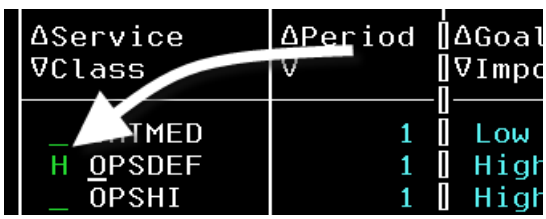


You are now looking at the Sysplex level WLM service class view of the system.

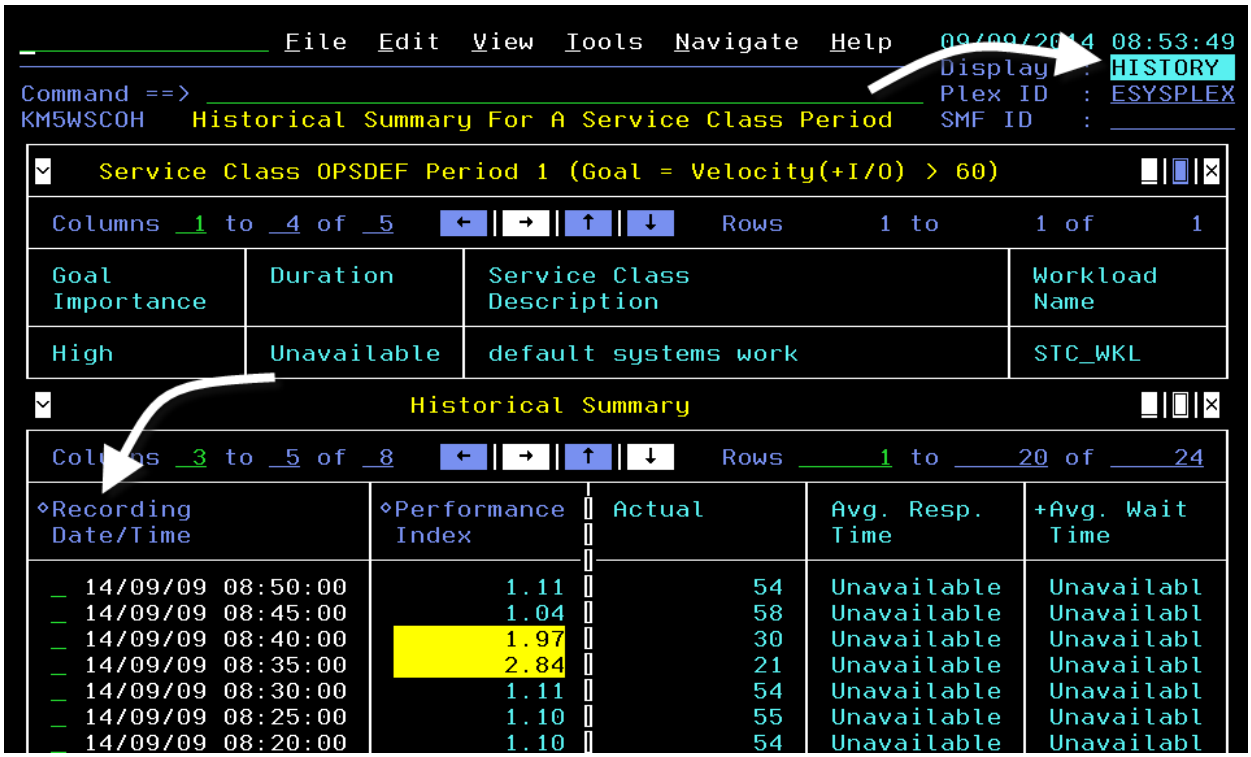


From here you may drill in to see history for a given WLM service class.

b) **Position the cursor** by a service class (for example pick OPSDEF) **Enter H** and **Press Enter**

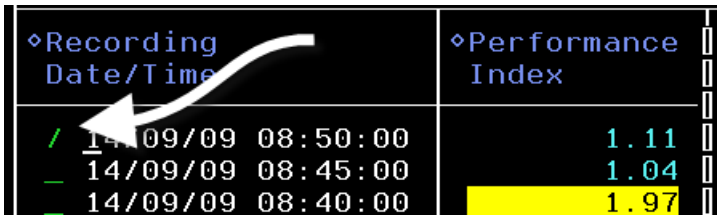


You are now looking at the historical interval records for the WLM service class.

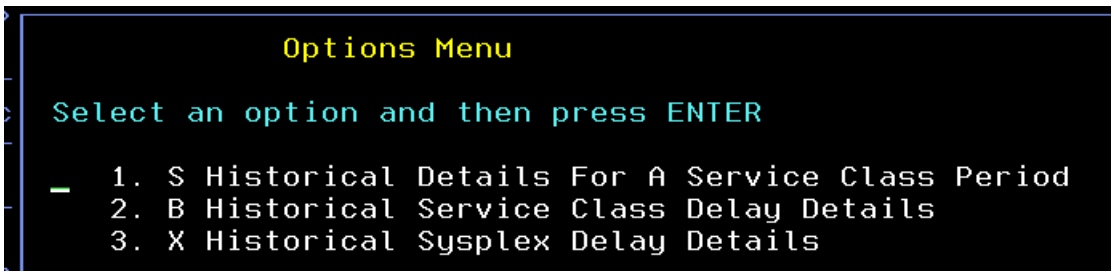


Note that in the upper right corner of the panel you see HISTORY, that indicates you are looking at history information, versus real time monitoring data. The bottom portion of the panel shows a summary of history interval records, showing such information as the WLM performance index for the service class for the given interval.

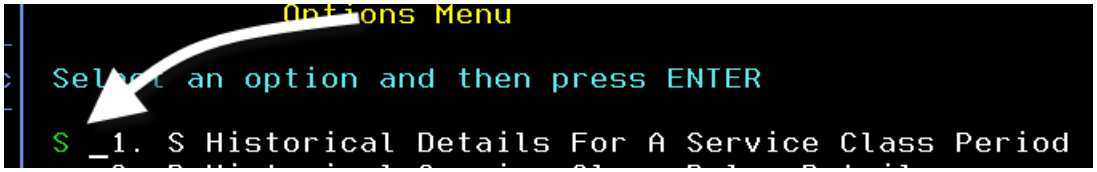
c) **Position the cursor** by a time interval **Enter** / and **Press Enter**



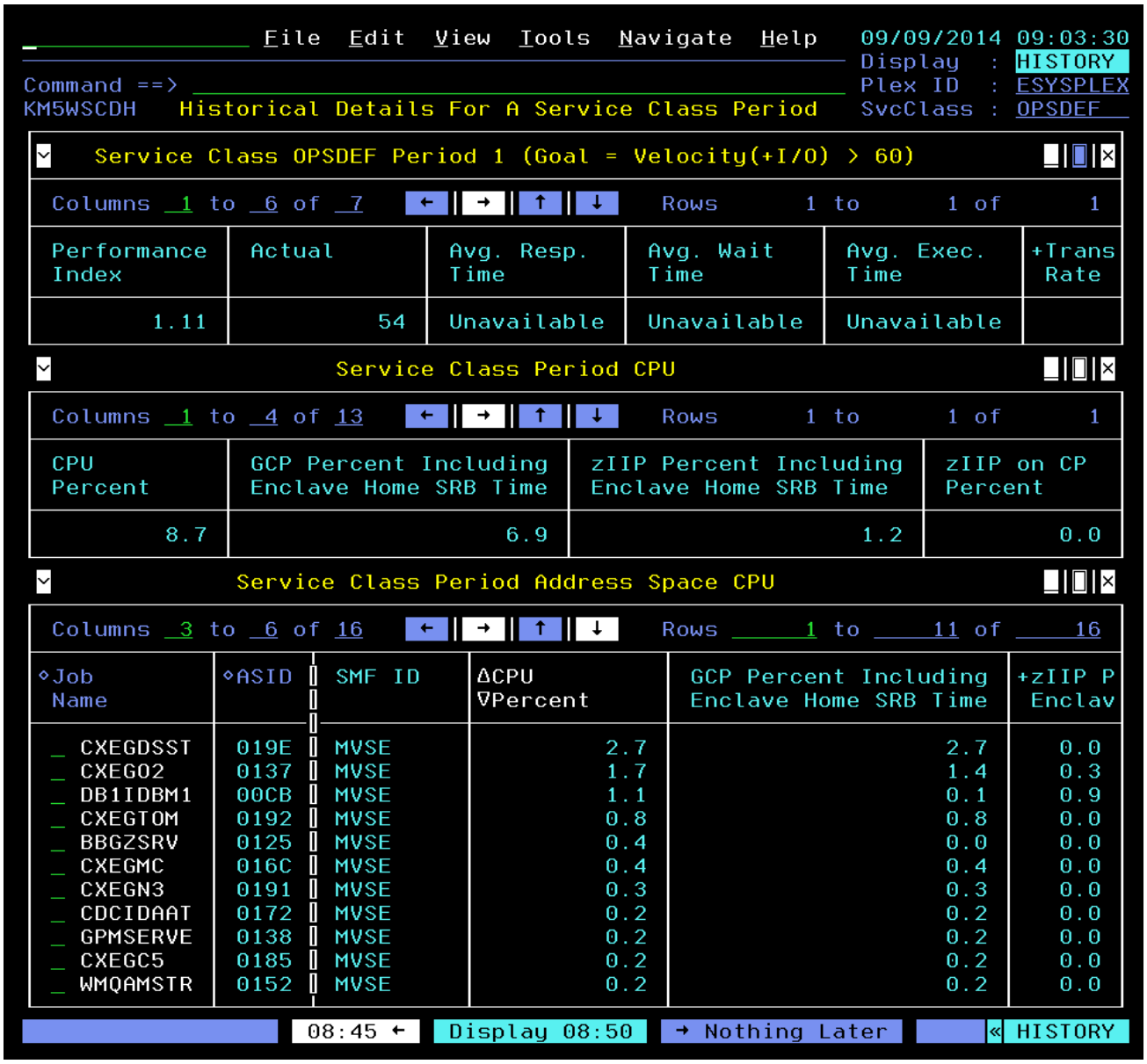
You are now looking at the popup menu for history detail drill down analysis.



d) **Position the cursor** by a time interval **Enter S** and **Press Enter**

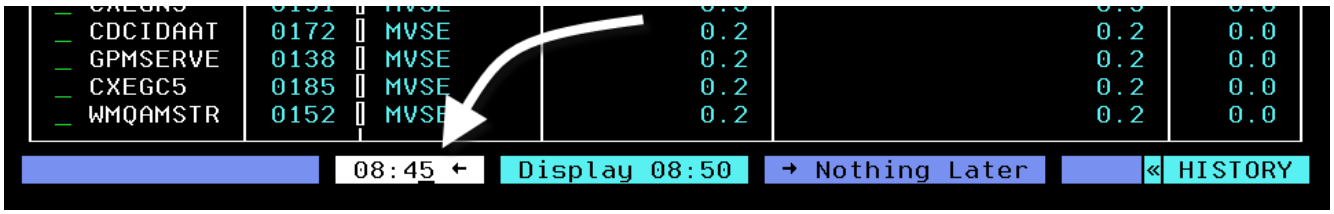


You are now looking at historical details for the WLM service class. Information includes WLM performance index (PI), CPU usage for the service class, and the address spaces that were executing within the service class.

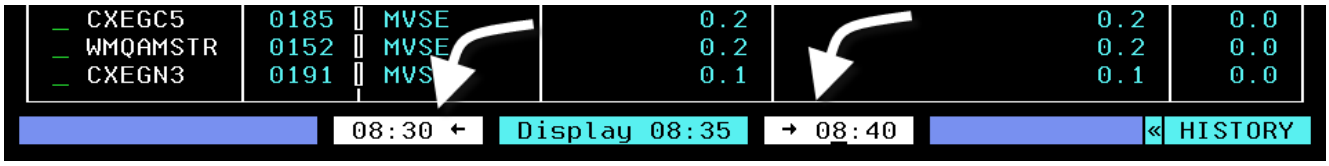


Note the bottom of the panel that shows the history time interval. To navigate to other time intervals:

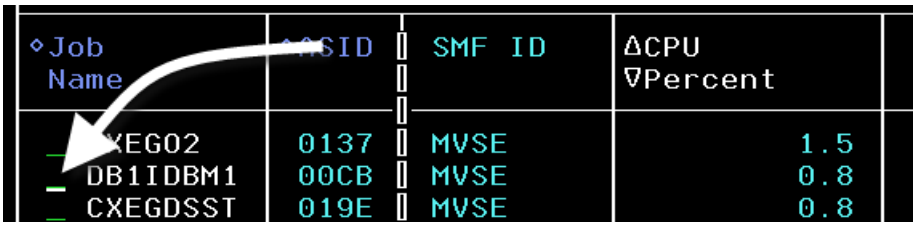
e) **Position the cursor** on the time interval and **Press Enter**



Notice how when you press enter the time intervals will change, as will the content of the panel.

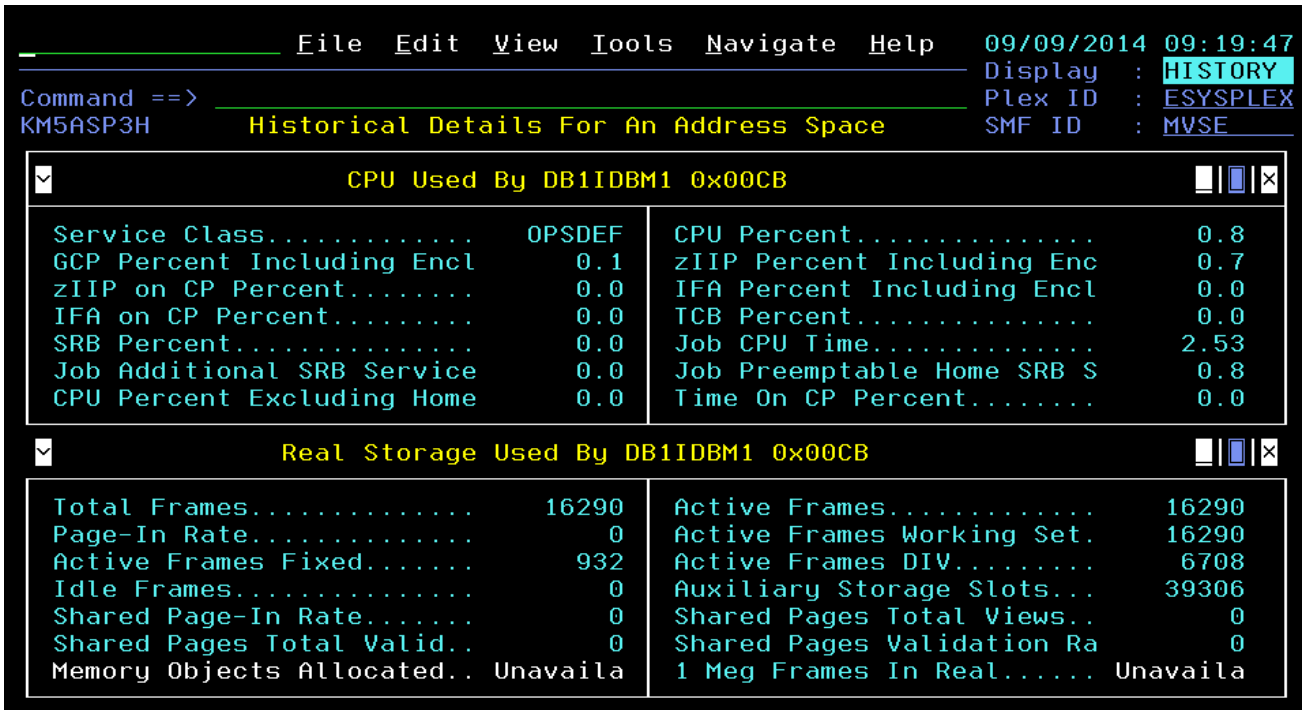


You may also drill down on an address space to see historical details for the task.



f) **Position the cursor** by a job name and **Press Enter**

You are now looking at details for the job, as stored in history. This history includes information on CPU usage for the job, zIIP usage (if any), and storage/memory usage by the job.

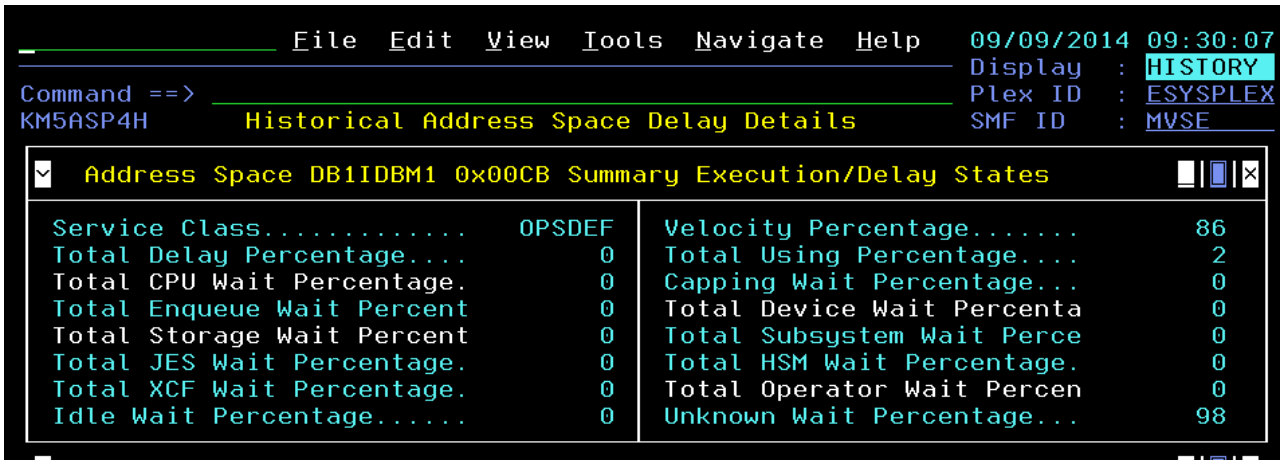


g) **Press F3** to return to panel KM5WSCDH

You may also see bottleneck/delay history information for a given address space.

h) **Position the cursor** by a job name **Enter B** and **Press Enter**

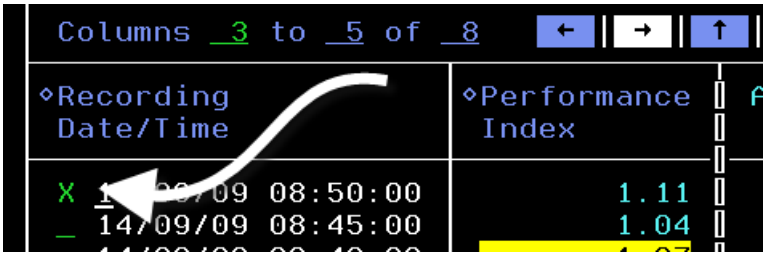
You are now looking at the address space delay state information for the selected task. This panel will show wait state percentage information for a variety reasons, such as CPU waits, storage waits, and various other system waits.



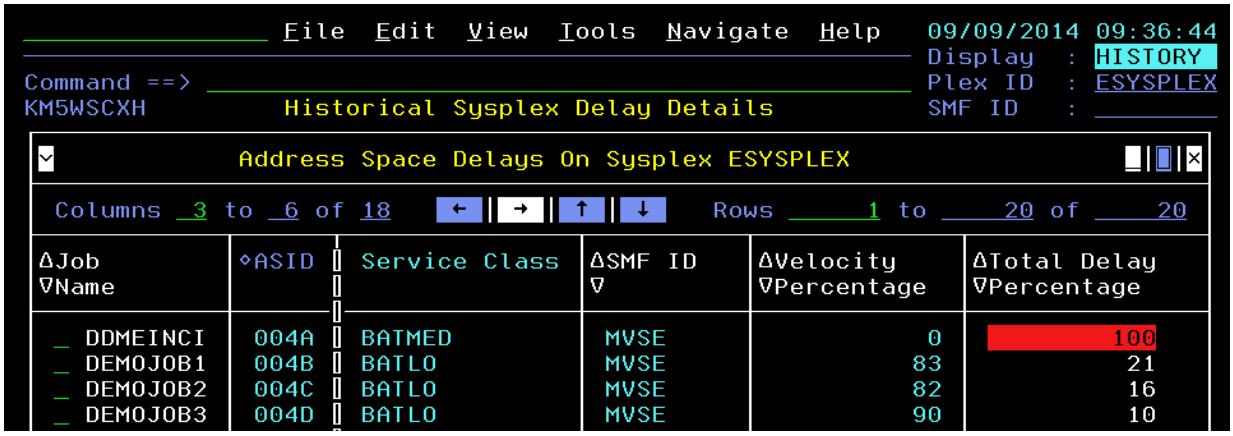
i) **Press F3** and **Press F3** again to return to panel KM5WSCOH

From the KM5WSCOH panel you may also look at WLM service delays across the Sysplex. To see this information:

j) **Position the cursor** by a time interval **Enter X** and **Press Enter**

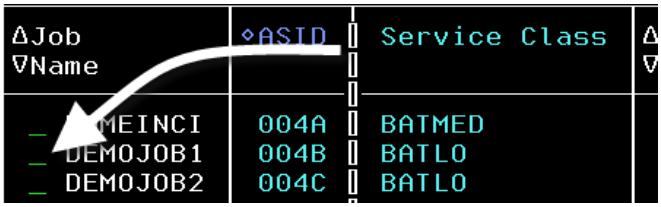


You are now looking at a panel that shows address spaces for a time interval and the percentage delay by address space for the given time interval. From this display you may use the time navigation on the bottom of the panel to look at different time intervals. You may also drill in on a specific job to see more information for the job.

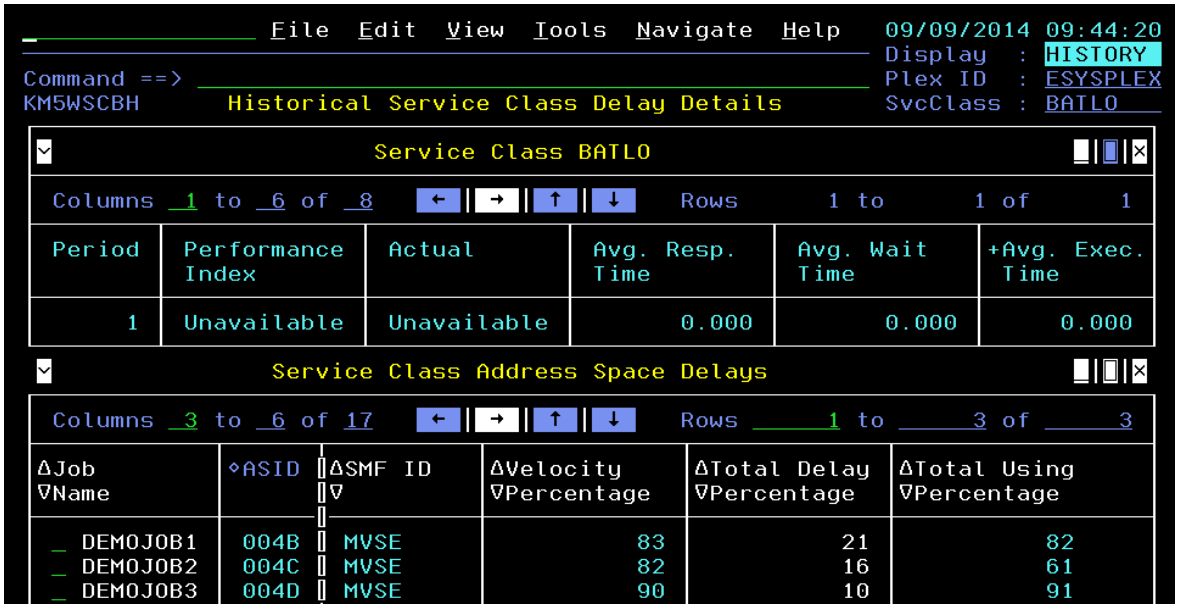


To see more detail for a specific job:

k) **Position the cursor** by a Job Name and **Press Enter**



You are now looking at the service class history for the WLM service class where the selected job/task is executing. To see details for a specific job you may select the job as shown earlier.



l) **Press F3** multiple times to return to the KOBSTART panel

Congratulations. You have now completed the OMEGAMON z/OS V5.3 Test Drive.

Please feel free to continue with the CICS exercises, or ask your lab instructor for additional exercises.

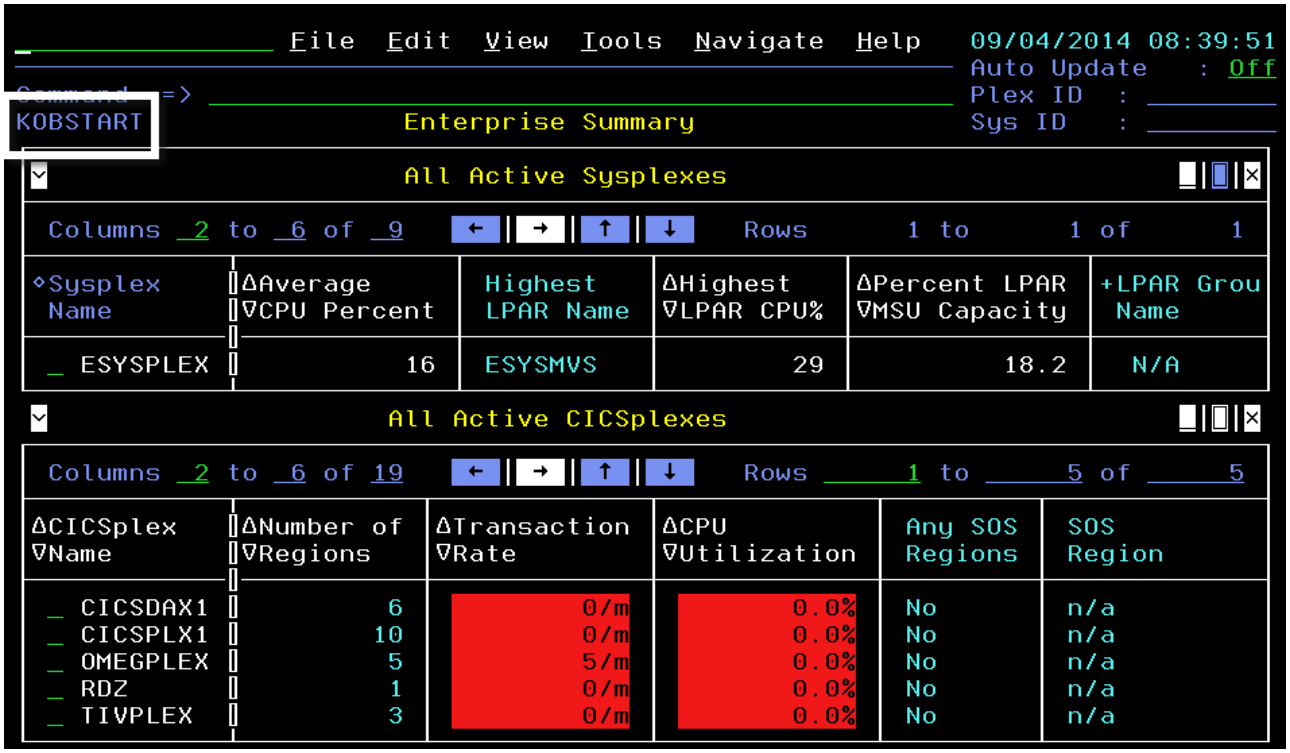
Lab #3 OMEGAMON CICS Enhanced 3270 Scenario Walkthrough

Introduction

This lab exercise will demonstrate how to navigate and use some of the primary features of the OMEGAMON CICS V5.3 enhanced 3270 user interface. In this lab the user will perform a series of scenarios focused on the following:

- CICSplex level monitoring
- CICS region level resource analysis
- CICS workload analysis
- CICS resource analysis
- CICS historical analysis – Task History (new in V5.3)
- CICS historical analysis – region and resource level (new in V5.3)

3.1 Overview from the CICSplex perspective



Here is the start panel for the e3270 ui (panelid KOBSTART). This panel contains overview information for CICSplex as well as z/OS Sysplex and other OMEGAMON monitoring agents. From this panel you may scroll, filter, or drill down for additional information. There are several methods for analysis that will be demonstrated as part of this lab exercise.

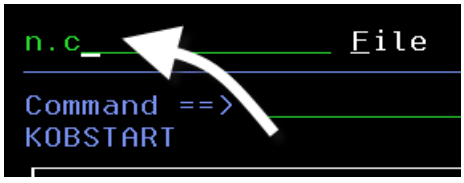
First you will perform a brief overview of the CICSplex level information available in the enhanced 3270 interface, then you will drill down into CICS region specific level information.

Beginning from the KOBSTART panel (as seen above) you see a Sysplex/CICSplex level view of the enterprise. Note that this panel can show multiple CICSplexes.

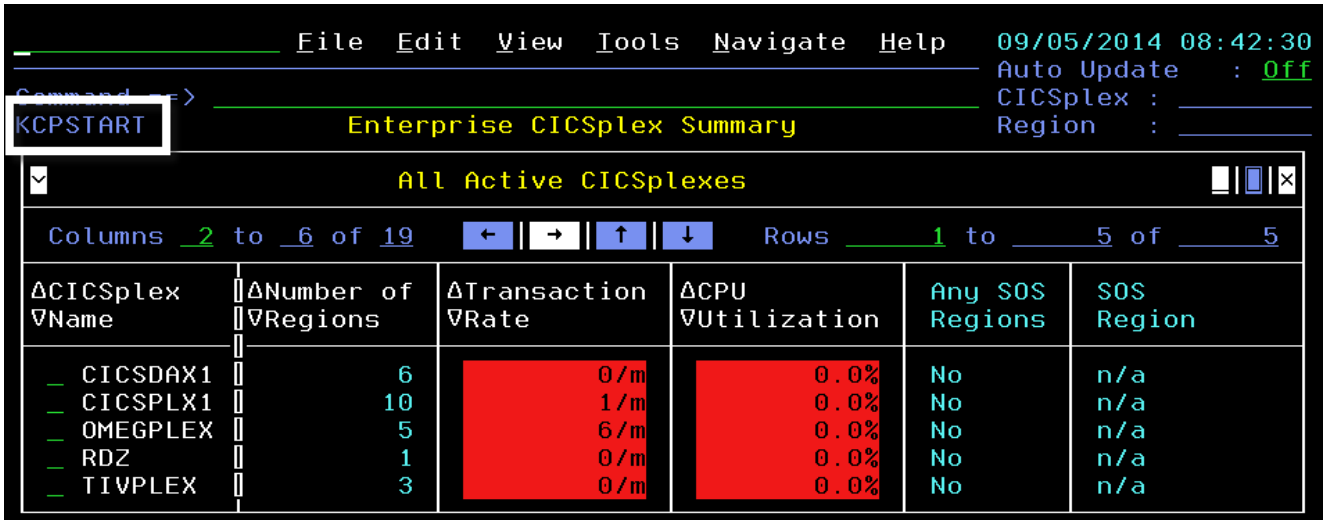
What constitutes a CICSplex?

Keep in mind that a CICSplex, from the perspective of OMEGAMON monitoring, may be either a CICSplex as defined in CICSplex SM, or a grouping of CICS regions as defined by OMEGAMON

a) **Position the cursor**, enter **N.C** and **Press Enter**

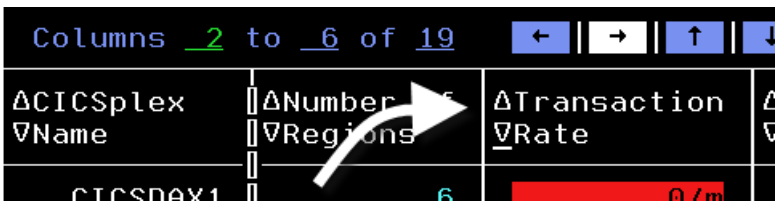


You are now looking at the KCPSTART panel. This panel is the overview panel specific to OMEGAMON CICS monitoring.

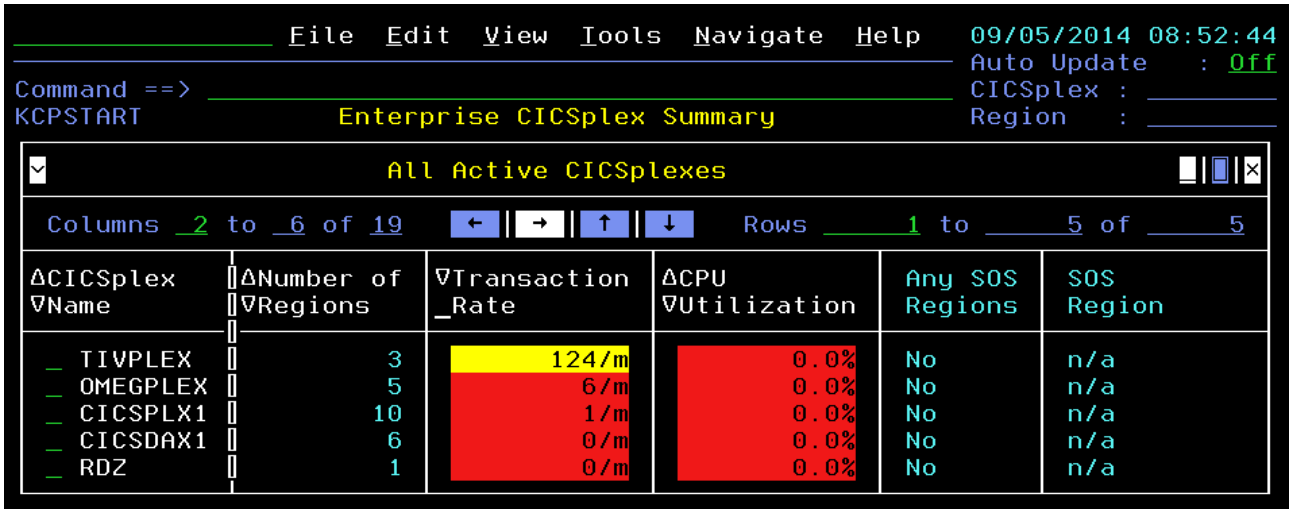


You can sort the display by multiple columns, including Number of Regions, Transaction Rate, or CPU Utilization.

b) **Position the cursor** on the sort arrow in the Transaction Rate column, and **Press Enter**



You are now looking at the CICSplexes sorted by Transaction Rate.

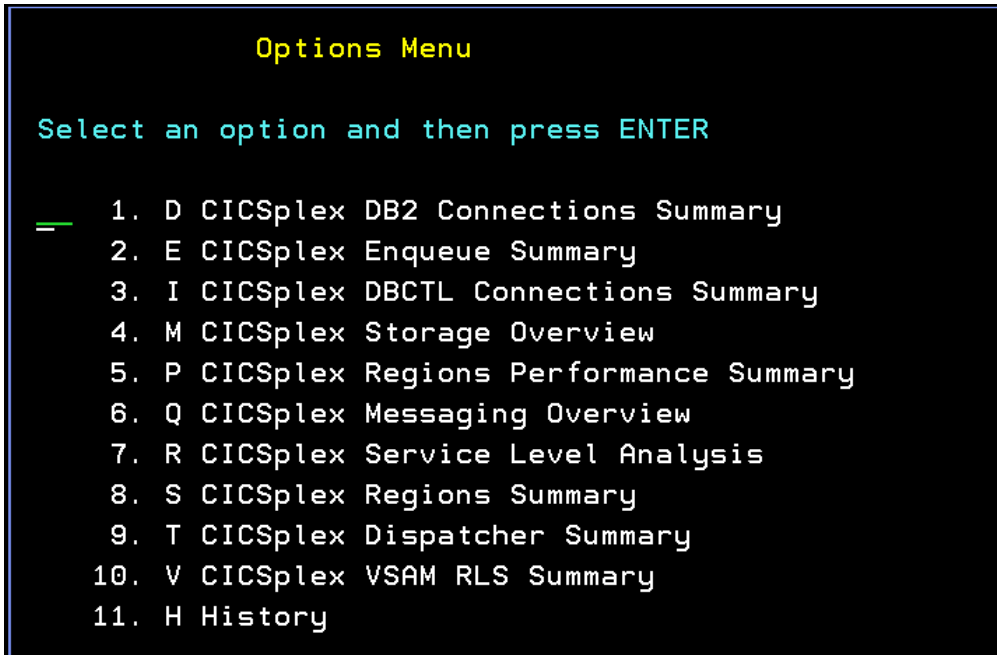


3.2 Drill Down Menu Options

From the KCPSTART panel there are several drill down analysis options.

a) **Position the cursor** by a CICSplex Name (select TIVPLEX), **enter** / and **Press Enter**

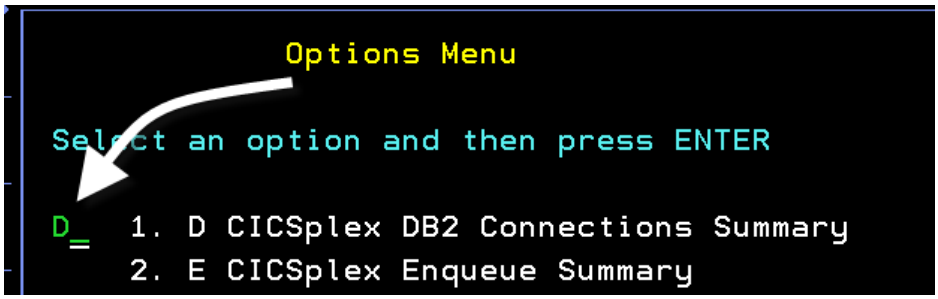
You will then see a popup with several navigation options.



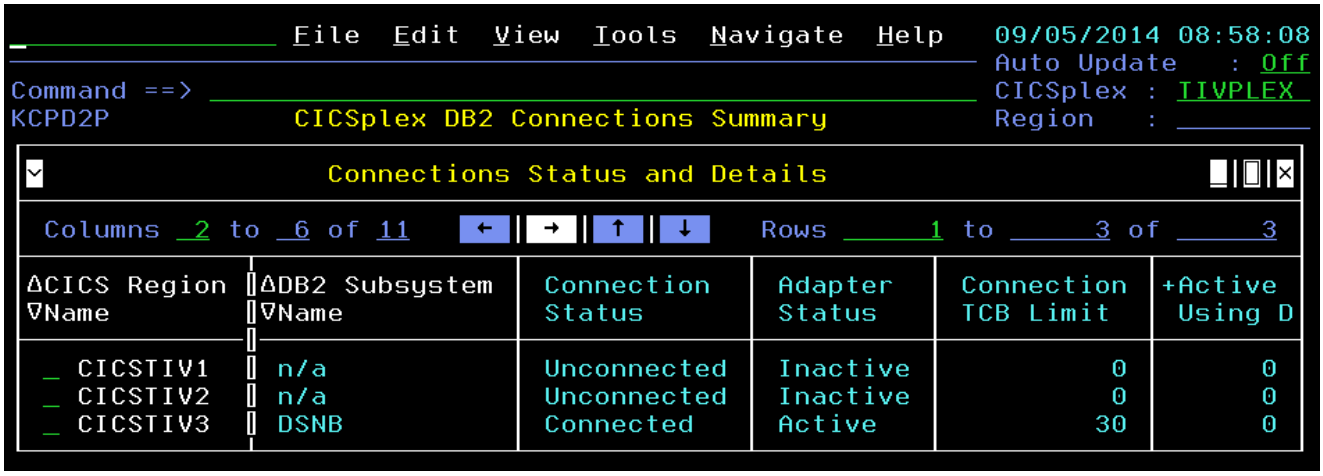
From this Options Menu popup you can drill in connection information, such as DB2, IMS, or messaging. You can drill in on storage information, look at the service level analysis (also known as response time analysis), or look at a CICS region overview within the CICSplex. **Note new options such as history.**

3.3 Monitoring CICS – DB2 Attachment Facility

a) From the above popup panel, **enter D** and **Press Enter**



You are now looking at the **DB2 Connections** Summary. From here you can see the connection status of the various CICS regions to DB2. In addition to DB2 Subsystem Name, you can shift the screen to the right to see such information as the number of tasks accessing DB2 and the RCT interface used.

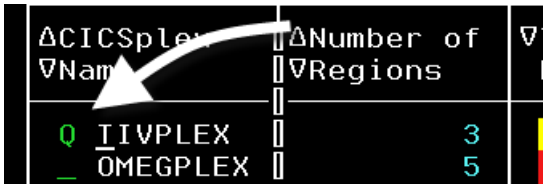


b) **Press F3** to return to KCPSTART.

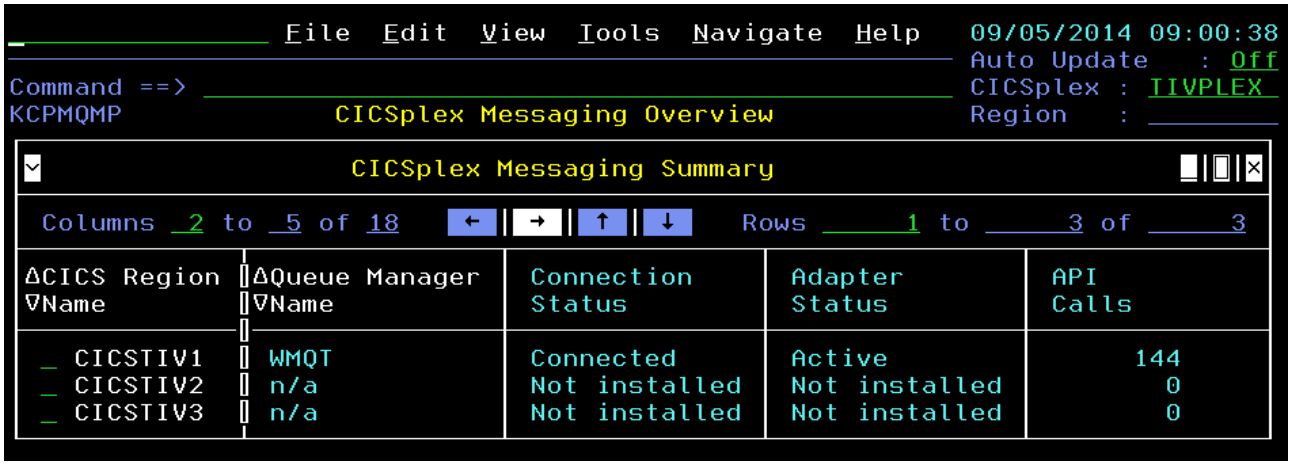
3.4 Monitoring CICS – MQ Interface

Similar to the DB2 interface status, OMEGAMON will show the status of the CICS to MQ interface.

a) **Position the cursor** by the CICSplex Name, **enter Q** and **Press Enter**



You are now looking at the **CICSplex Messaging** Summary panel. This display is similar to the DB2 panel in that it shows an overview of what CICS regions are connected to which MQ Queue Managers. Plus if you shift the display to the right you can see relevant MQ call metrics.

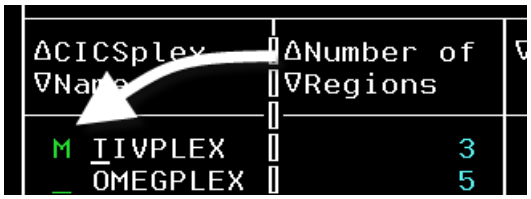


b) **Press F3** to return to KCPSTART.

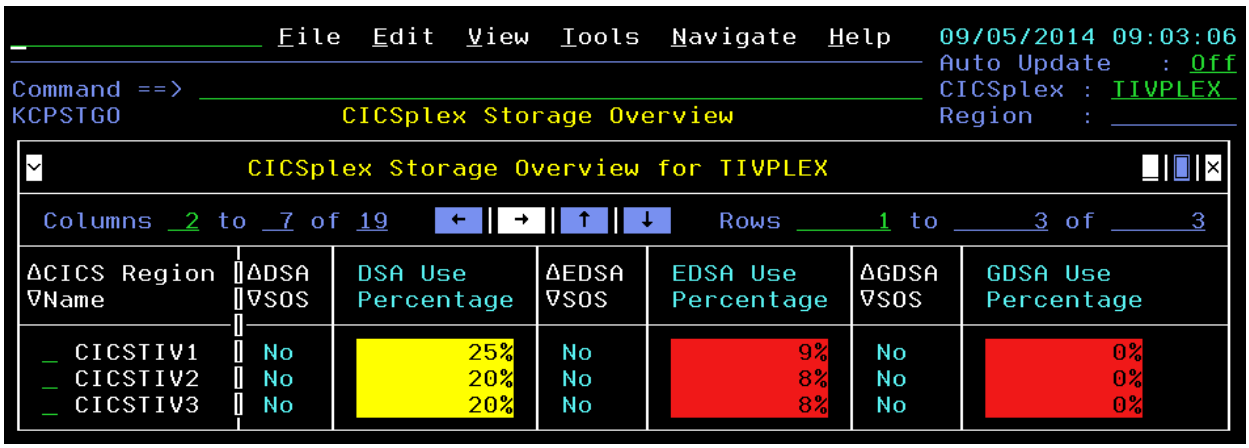
3.5 Monitoring CICS Storage

OMEGAMON will information of CICS storage utilization by address space (including DSA, EDSA, GDSA, Storage violations, short on storage, and more.

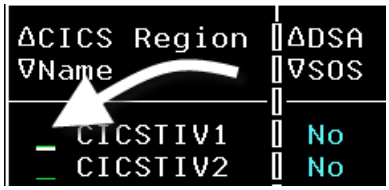
a) Position the cursor by the CICSplex Name, **enter M** and **Press Enter**



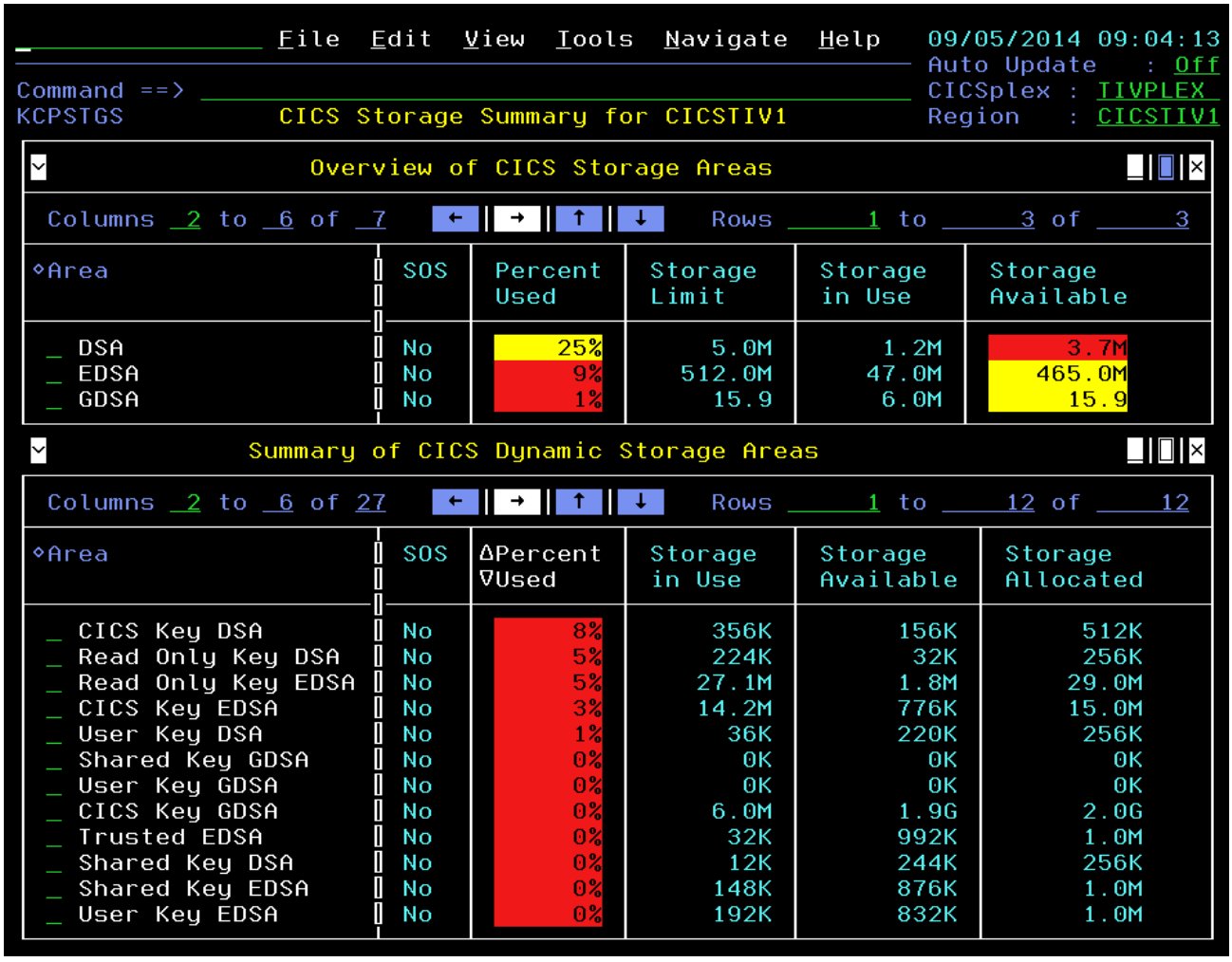
You are now looking at the CICSplex Storage Overview panel. This panel shows storage utilization by CICS region.



a) To see more detail for a specific region, **position the cursor** by a CICS Region Name and **Press Enter**



You are now looking at the storage utilization detail display for a specific CICS region.

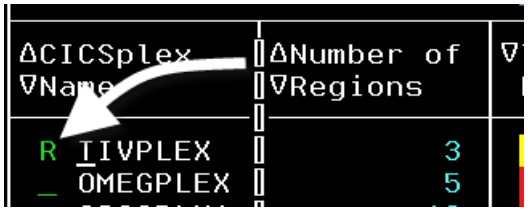


b) **Press F3** then **Press F3** again to return to the KCPSTART panel.

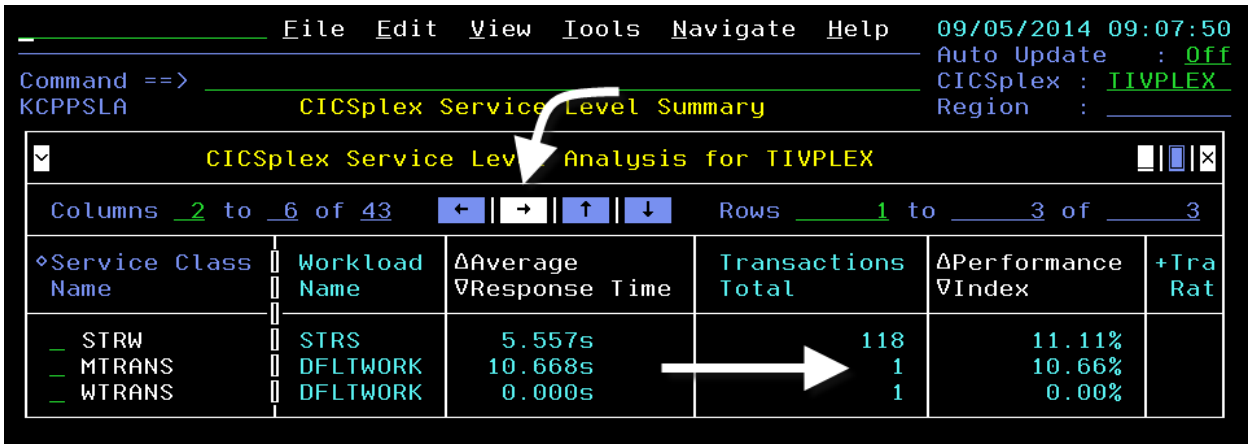
3.6 Service Level Analysis

Service Level Analysis is a powerful feature of OMEGAMON CICS that will analyze the workload, correlate transaction response time, and also break down the major wait reasons for the CICS workload. The important thing to keep in mind is that Service Level Analysis is calculated and displayed at the CICSPLEX level.

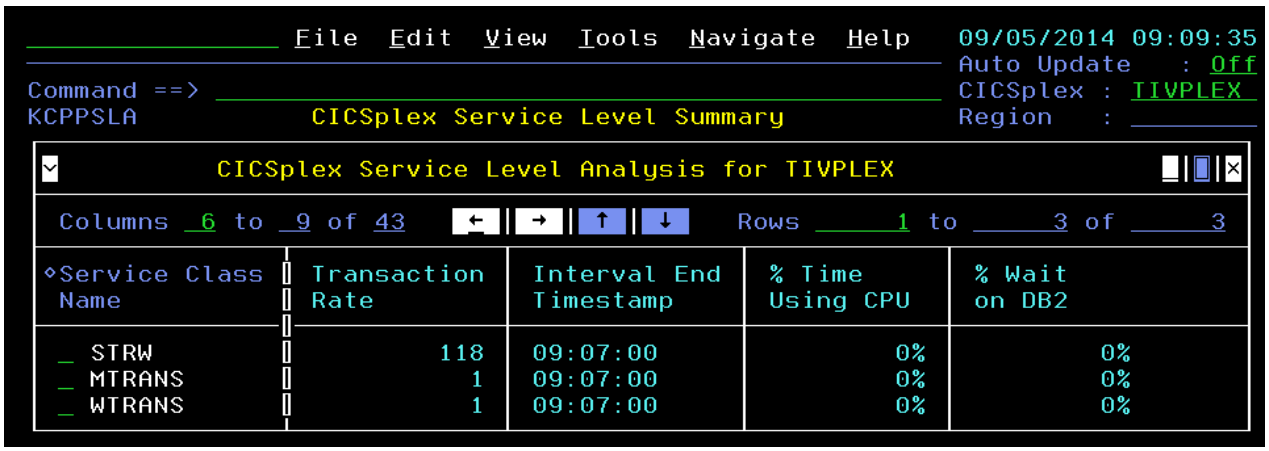
a) To see Service Level Analysis, p**osition the cursor** by the CICSplex Name, **enter R** and **Press Enter.**



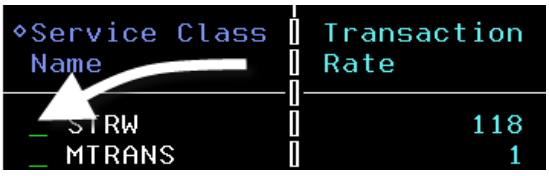
You are now seeing response time data and transaction service times. This information shows counts of transactions executed and average response time. Also, if you shift the display you will be able to see percentage wait times for a variety of wait reasons including CPU, database, and file waits.



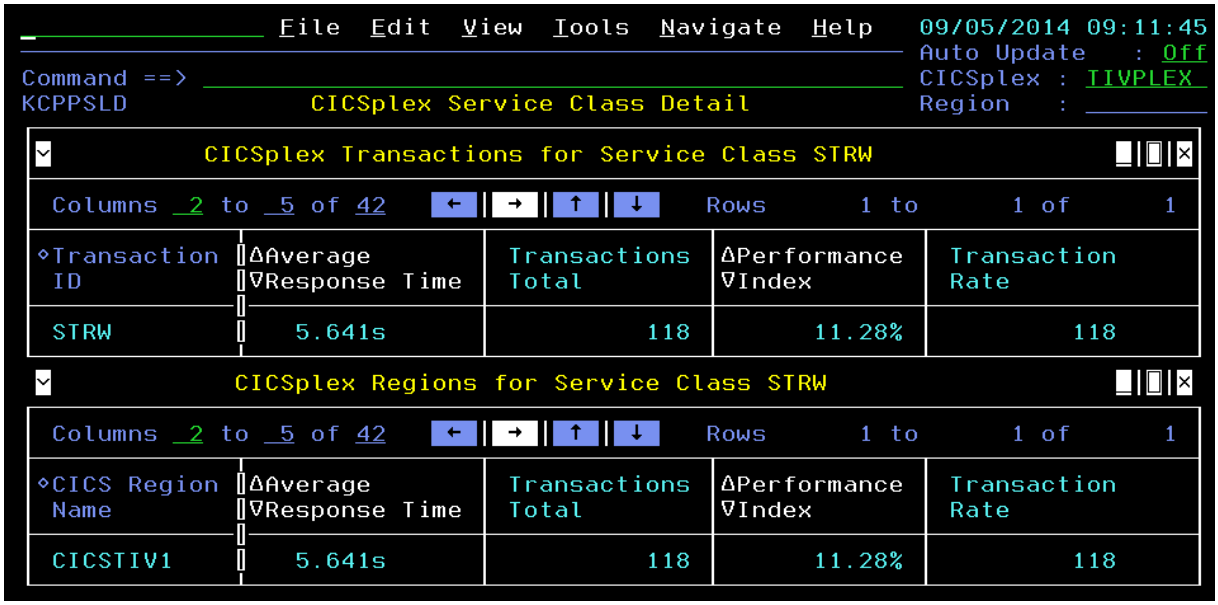
Note how you can see information such as % wait time for various workload resources.



b) P**osition the cursor** by the Service Class Name and **Press Enter**



You are now looking at the Service Class Detail display. This display shows more detail, down to the transaction code and CICS region level.

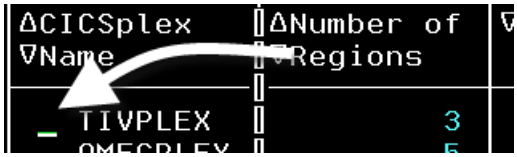


b) **Press F3** then **Press F3** again to return to the KCPSTART panel.

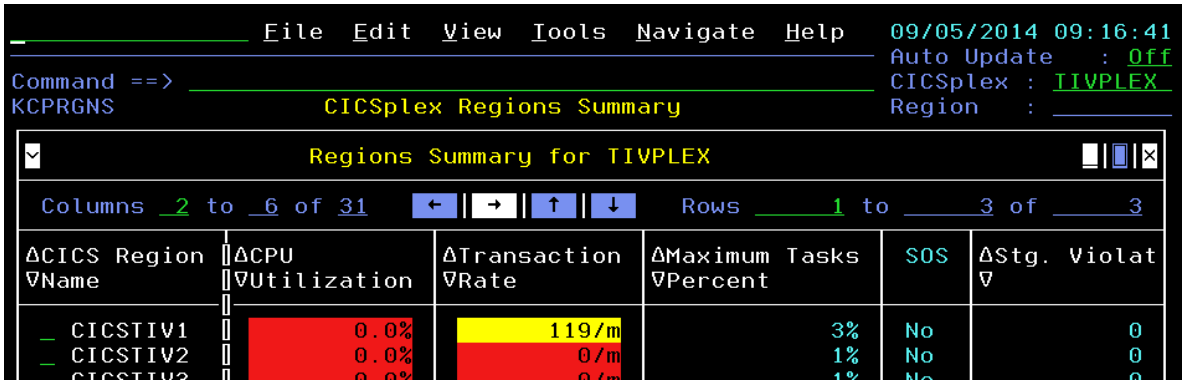
3.7 Monitoring CICS Region Summary and Details

OMEGAMON CICS provides a region summary panel that pulls together many critical region level performance metrics across all the regions in a given CICSPLEX.

a) Position the cursor by the CICSplex and **Press Enter.**



You are now looking at the CICSplex Regions Summary panel (KCPRGNS). From here you can perform more detailed analysis at the CICS region level.

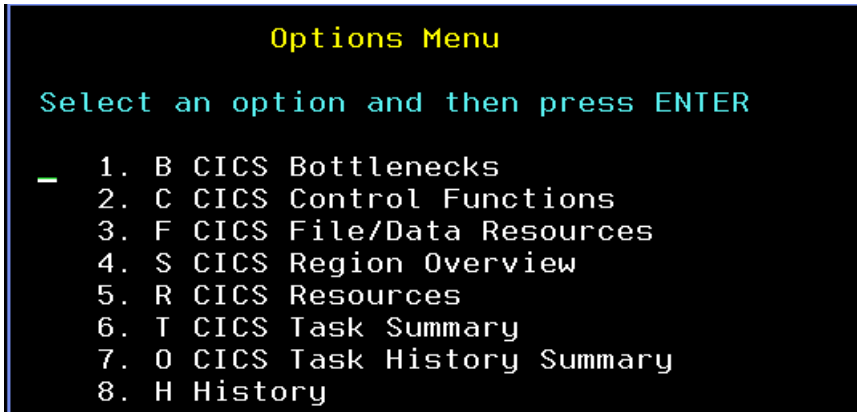


3.8 Overview from the CICS region perspective

You should now be on the CICSplex Regions Summary panel (KCPRGNS). From this display you can drill down for quite a bit of detail specific to a given CICS region.

a) **Position the cursor** by a CICS Region Name (select region CICSTIV1), **enter /** and **Press Enter**.

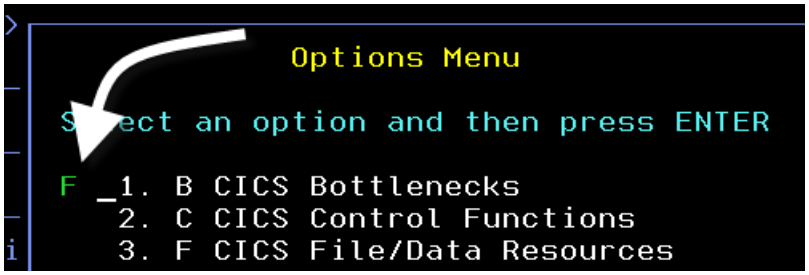
You will then see a popup with several navigation options.



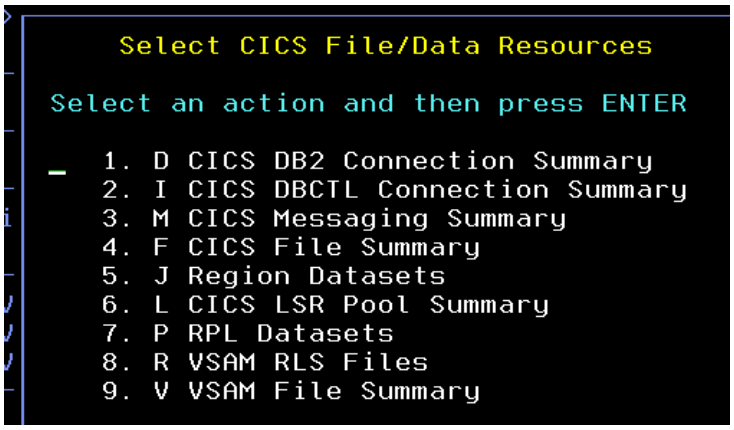
From the popup you may look at the Region Overview display for the region, or select either other CICS resource displays, or look a CICS task history or region level interval history.

To see CICS file information:

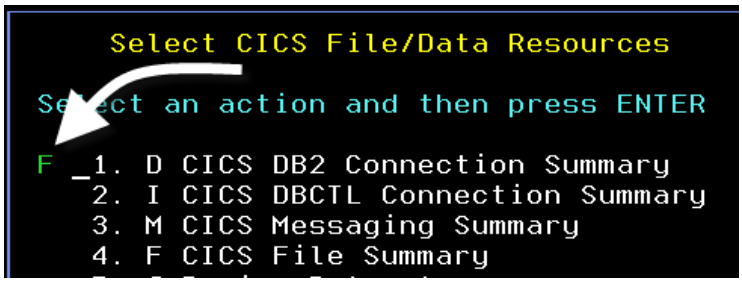
b) Position the cursor in the popup menu, **enter F** and **Press Enter.**



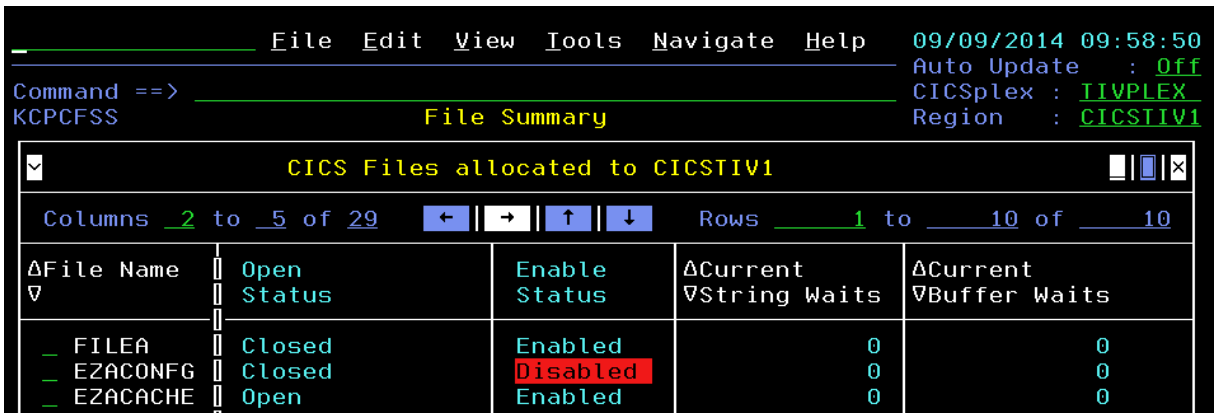
You will then be presented with another popup menu where you may specify which file structure types you are interested in viewing.



c) Position the cursor in the popup menu, **enter F** and **Press Enter**

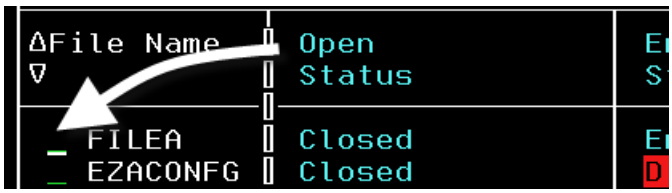


You are now looking at the File Summary panel. From here you can **Press F11** to shift the screen to the right and see additional file information.

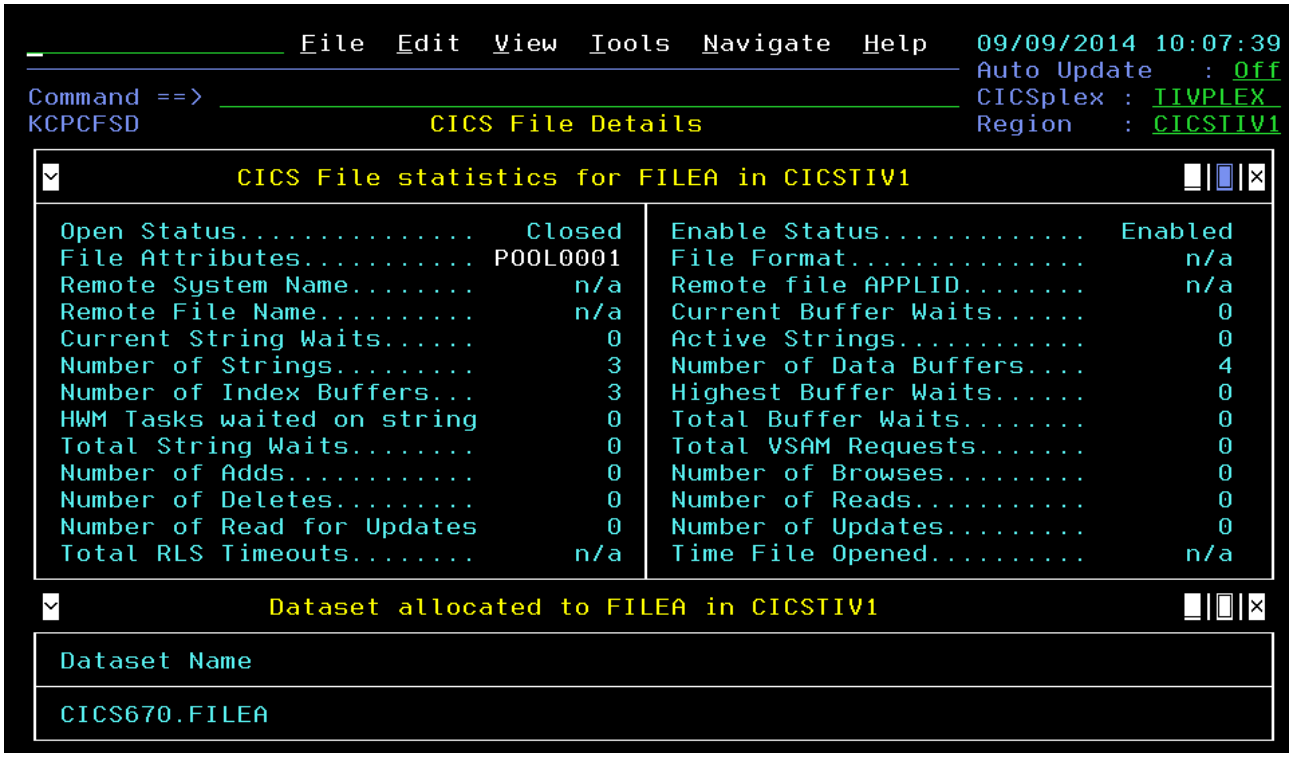


3.9 Monitoring CICS - File Exceptions

a) To see detail on a specific file, p**osition the cursor** by a File Name and **Press Enter**



You are now looking at the CICS File Details panel. This display shows detailed statistics on file status, access counts, buffering, and CI/CA splits.



b) **Press F3** then **Press F3** again to return to the KCPRGNS panel.

3.10 Monitoring CICS Resources

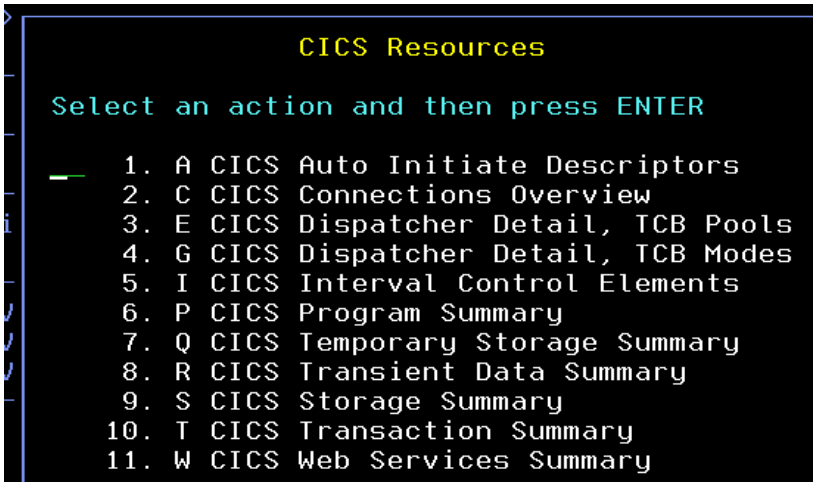
You may use OMEGAMON CICS to monitor various CICS resources, such as programs, transactions, CICS region storage, temp storage, and transient data queues.

From the KCPRGNS panel**:**

a) **Position the cursor** by a CICS Region Name, **enter R** and **Press Enter**

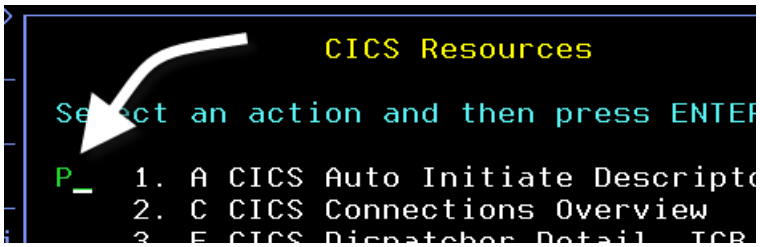
You will then see a popup with several navigation options.

You are now looking at the CICS Resources Options Menu. From this popup menu you can drill down into a variety of CICS resources including connections, the CICS dispatcher, CICS programs, temp storage, transient data, CICS transactions, and CICS web services.

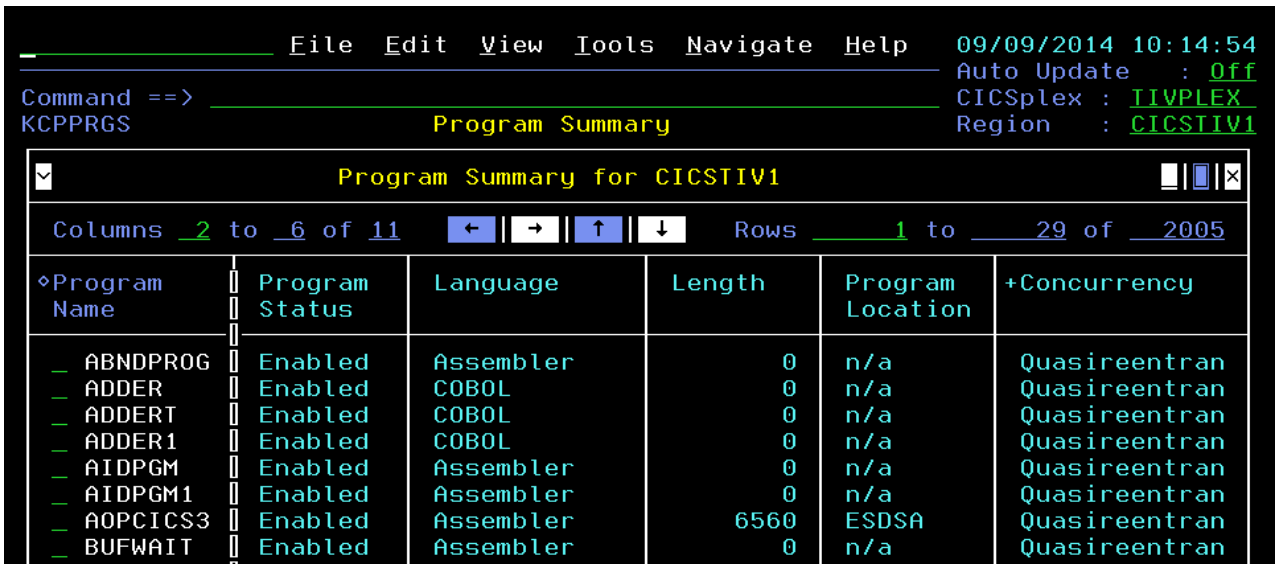


3.11 CICS Program Summary

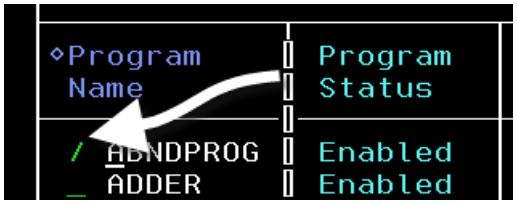
a) From the popup, **Position the cursor**, **enter P** and **Press Enter**



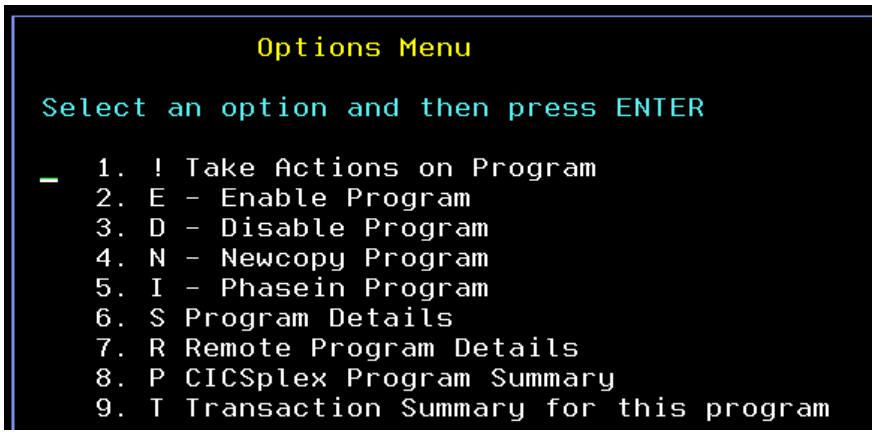
You are now looking at the Program Summary panel. From here you may drill into a CICS program for detail, or to issue commands.



b) **Position the cursor** by a Program Name, **enter /** and **Press Enter**

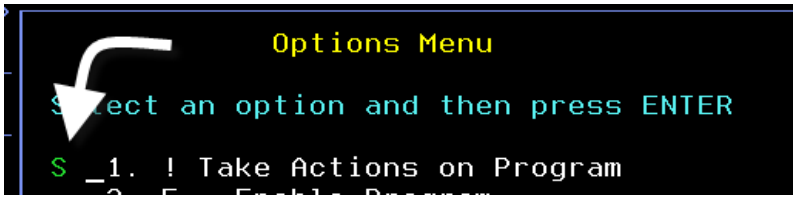


You will then see a popup with several navigation options.

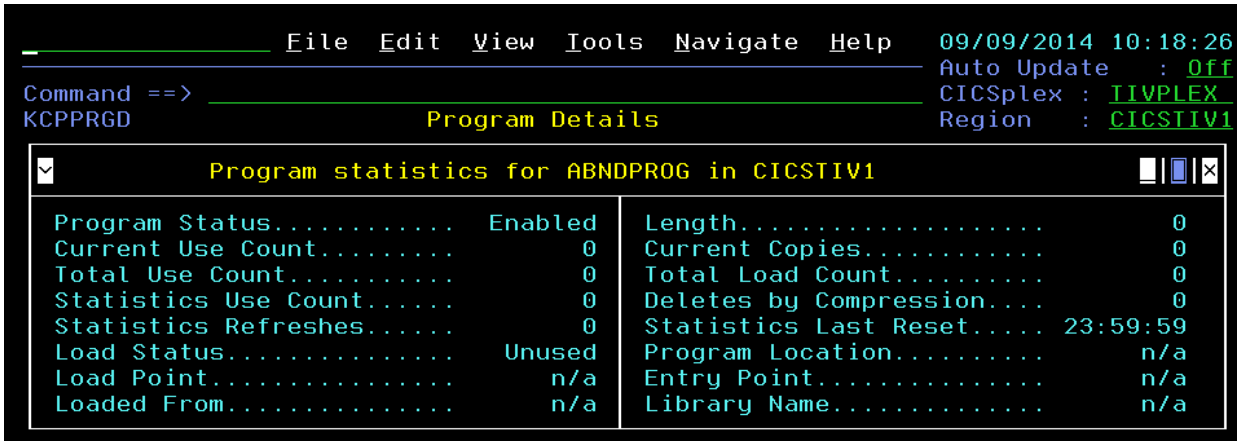


Note from this popup you may drill down to get more detail about the program, display transactions related to this program, or issue commands to the program.

c) **Position the cursor** **Enter S** and **Press Enter** to see details about the program.



You are now looking at the Program Details panel.



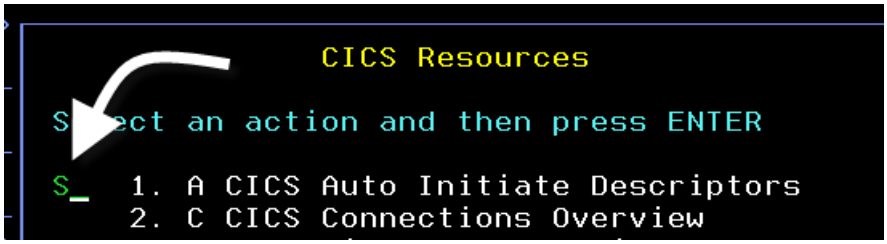
d) **Press F3** then **Press F3** again to return to the KCPRGNS panel

3.12 CICS Storage Summary (including history – New in V5.3)

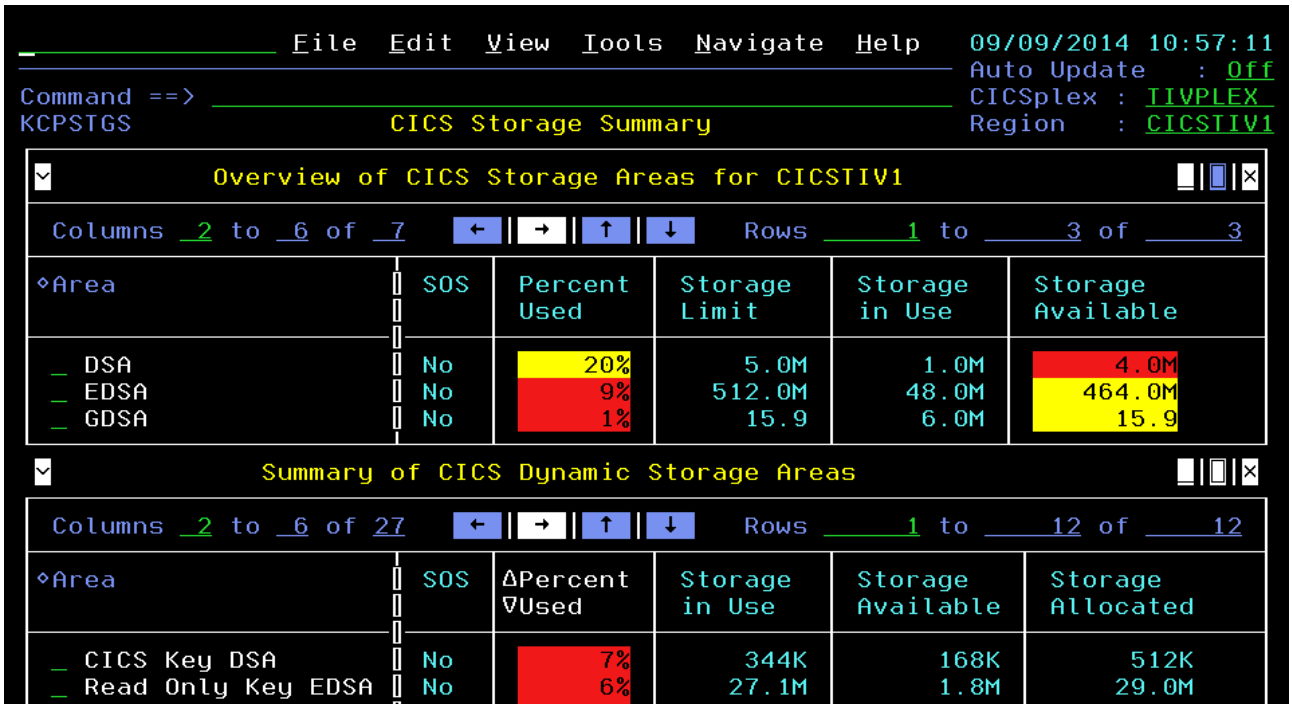
From the KCPRGNS panel you may drill down to see information on CICS region storage utilization.

a) Position the cursor, enter **R** and **Press Enter**

b) From the popup menu, **Position the cursor**, enter **S** and **Press Enter**

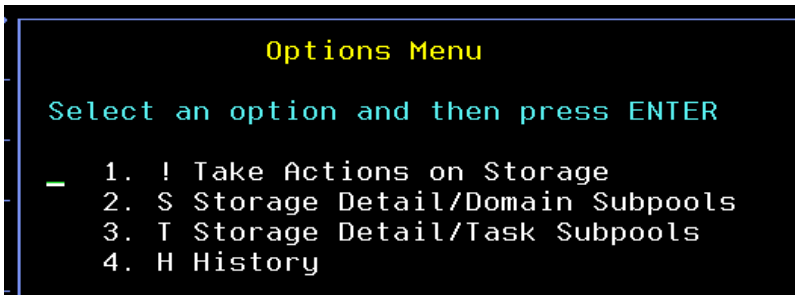


You are now looking at the CICS Storage Summary panel for the CICS region. From this display you can see storage details such as DSA and EDSA utilization for the region.

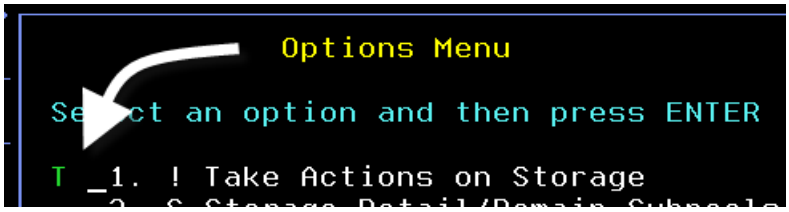


c) **Position the cursor** by DSA or EDA, enter / and **Press Enter**

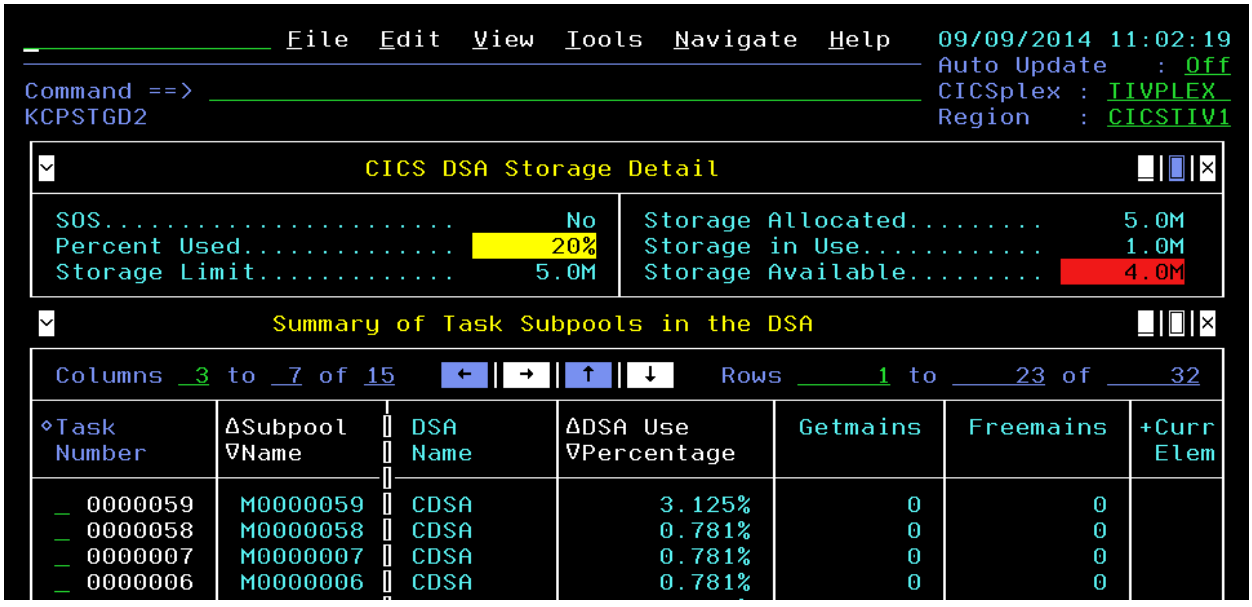
You will then see a popup with several navigation options. Note that in addition to the real time options, you also have the option to view the history of CICS storage utilization.



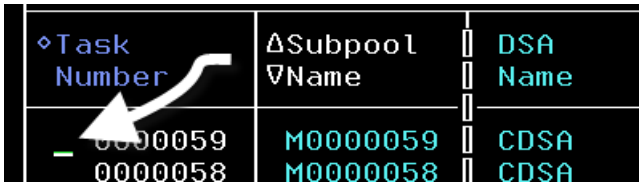
d) From the popup, **Position the cursor enter T** and **Press Enter**



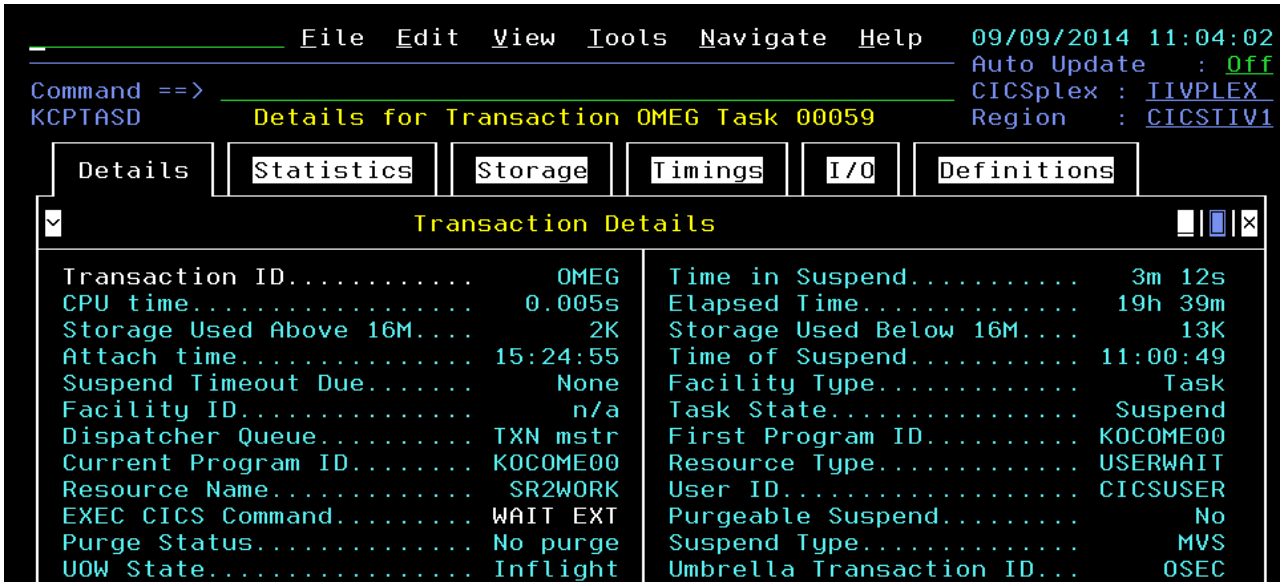
You are now looking at CICS storage utilization listed by task number.



e) To see details on a given task, **position the cursor** by a task on the list and **Press Enter**



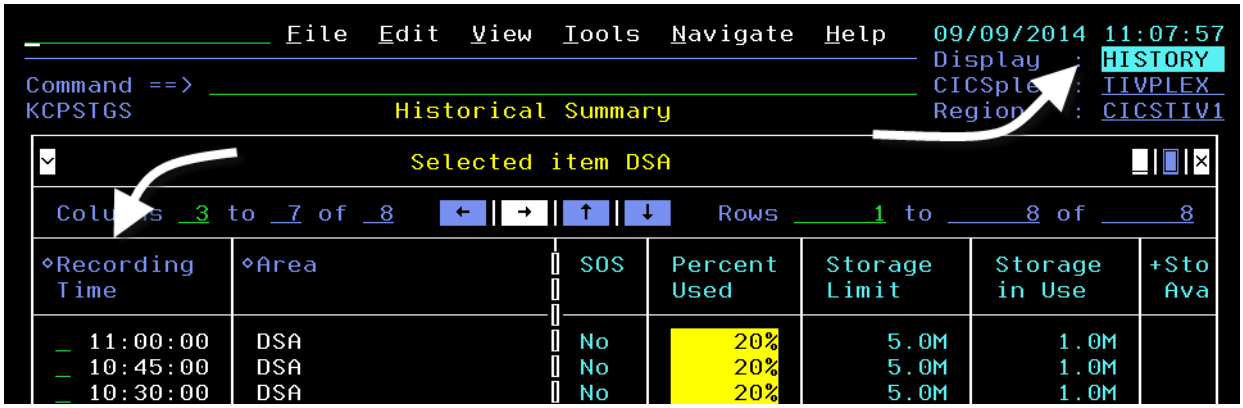
You are now looking at the Task Details panel for the task using the CICS storage.



f) **Press F3,** then **Press F3** again to return to the KCPSTGS panel.

g) Again **position the cursor** next to DSA **enter H** and **press Enter**

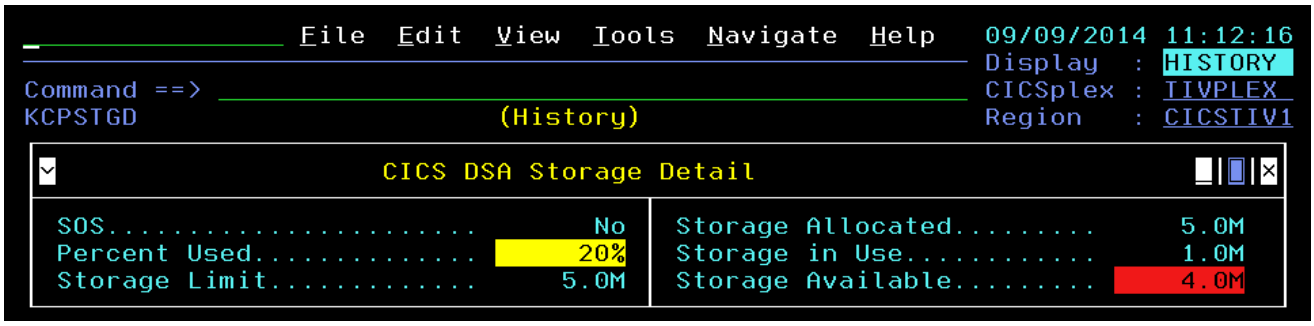
You are now looking at historical interval information for DSA utilization of the CICS region.



Note that the upper right portion of the panel indicates that this is historical information. The bottom portion of the panel shows a line for each history interval, with a drill down option for more detail.

h) **Position the cursor** next to a time interval and **press Enter**

You are now looking at the history information for the specific interval.



You may shift the history interval by using the history tool bar at the bottom of the panel.

i) **Position the cursor** on the time interval tool bar and **press Enter**

Note how the history time frame shifts each time you press enter.

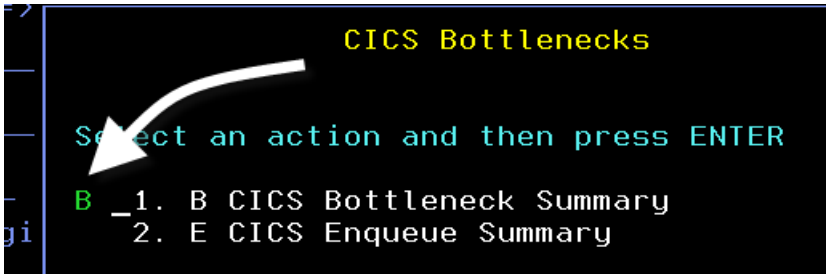
j) **Press F3** then **Press F3 again,** then **Press F3** one more time to return to the KCPRGNS panel.

3.13 CICS Bottleneck Analysis

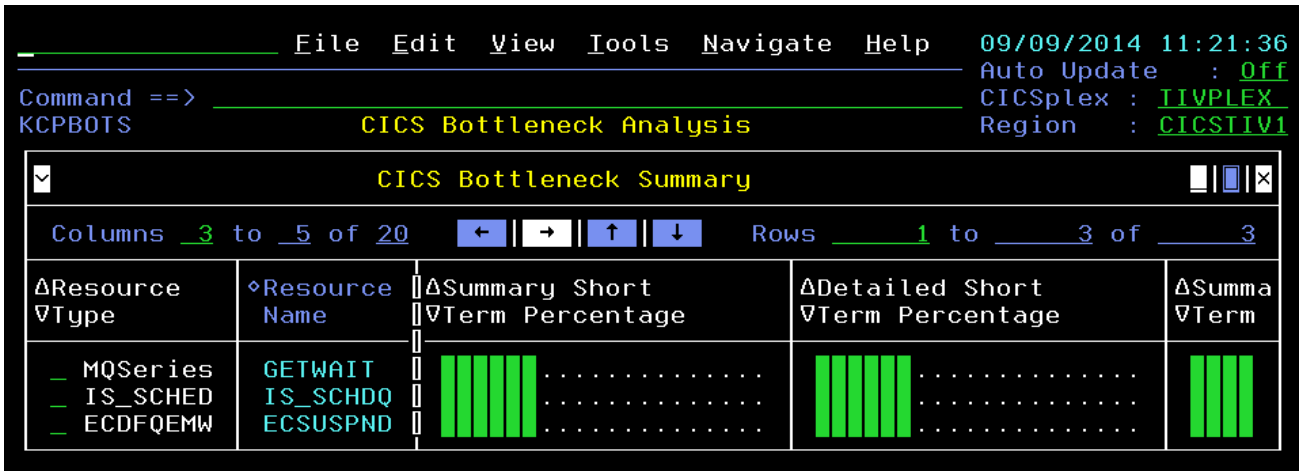
From the KCPRGNS display you may view bottleneck analysis information for a given CICS region.

a) Position the cursor, by a CICS region **enter B** (for CICS Bottlenecks) and **Press Enter**

b) From the CICS Bottlenecks Menu, **position the cursor**, **enter B** (for CICS Bottleneck Summary) and **Press Enter**



You are now looking at the CICS Bottleneck Summary panel. This panel will show the bottleneck analysis breakdown for the region. You can **Press F11** multiple times to see an explanation of each of the CICS resource types.



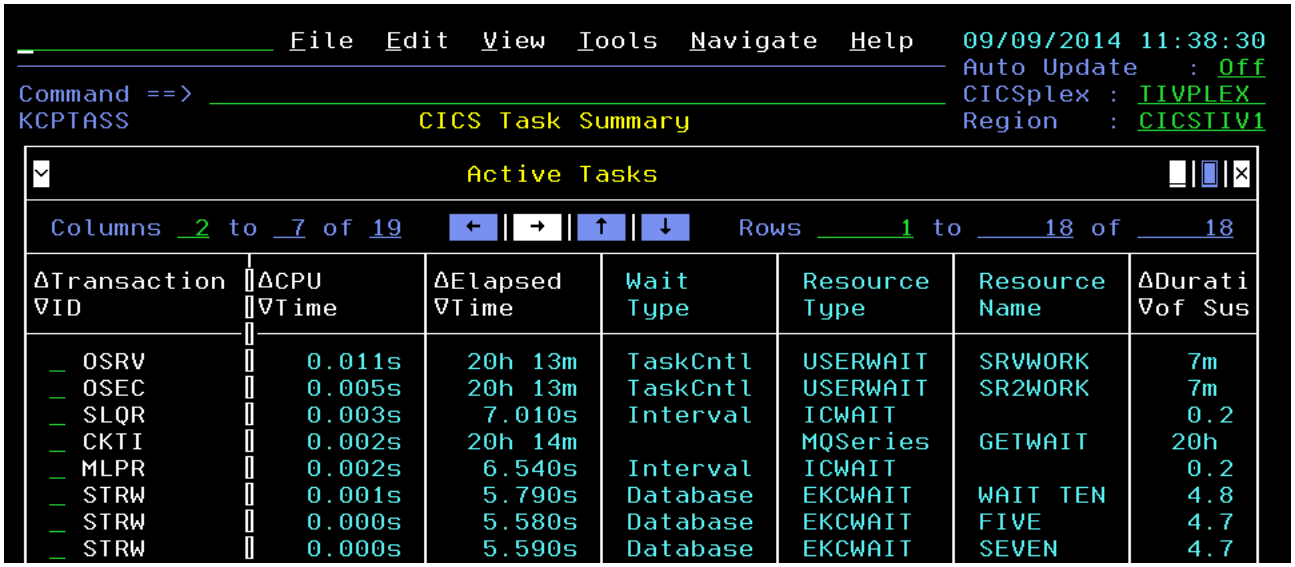
c) **Press F3** to return to the KCPRGNS panel.

3.14 CICS Task Analysis (including Task History – New in V5.3)

You may use OMEGAMON CICS to see details about the tasks currently active in the CICS region. You may also use OMEGAMON CICS task history to view task activity over time, with drill down for task details.

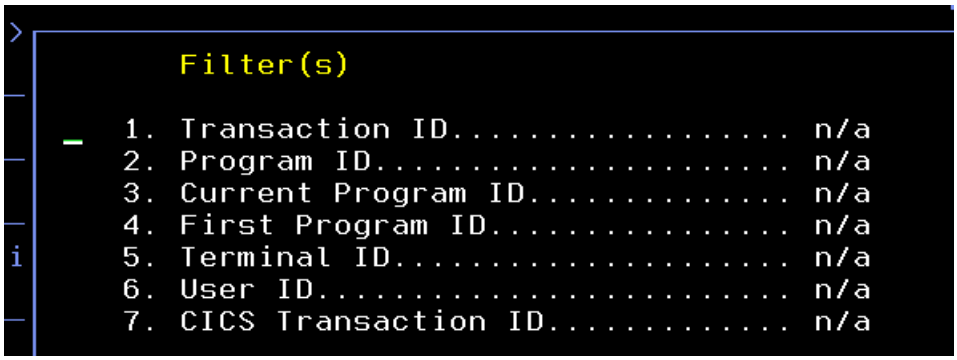
a) **Position the cursor** by a CICS Region Name, **enter T** and **Press Enter**

You are now looking at the CICS tasks running in the CICS region. You can sort the display by multiple columns, including CPU time, elapsed time, and task number.



b) To filter the display, **Press F4**

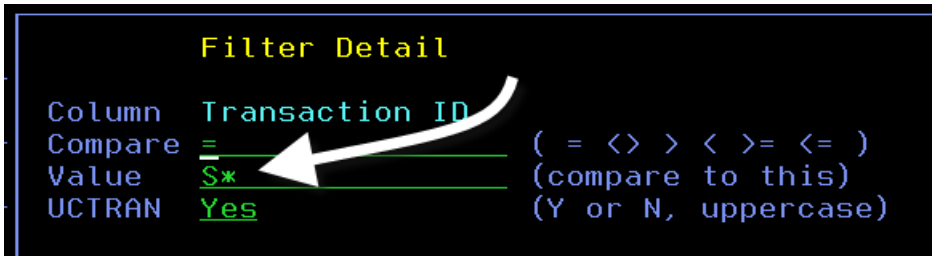
You are now looking at the filter popup for the CICS task panel.



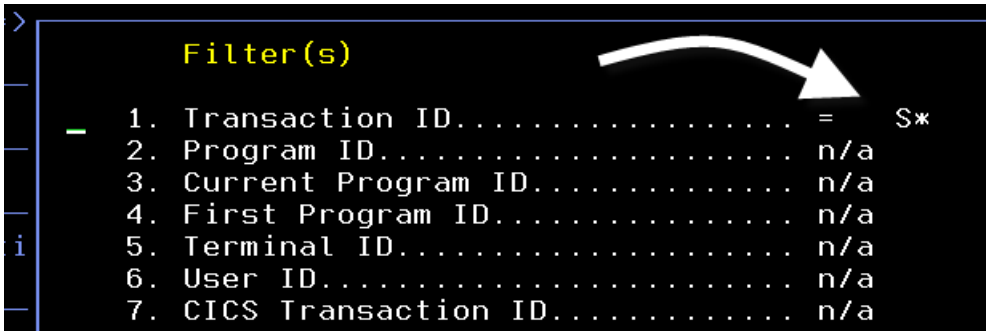
c) **Position the cursor**, **enter 1** (for Transaction ID) and **Press Enter**

You are now looking at the filter popup for the transaction filter.

d) **Enter a comparison** (for example try =) and then **Enter a value** for the transaction (for example S*). **Press Enter**

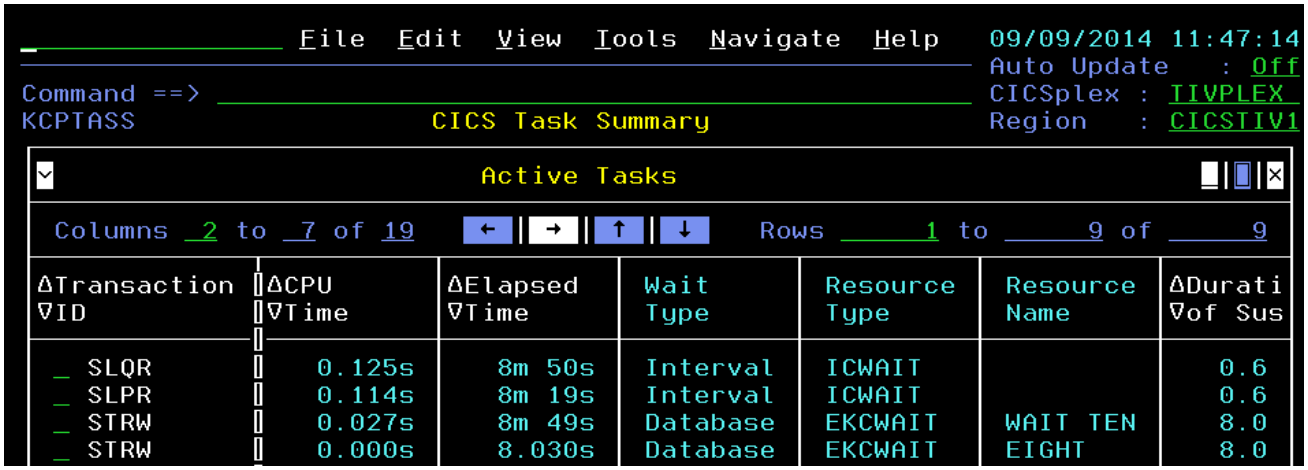


You will then see the filter specified in the popup.



e) Press F3

You are now looking at the filtered CICS task display.



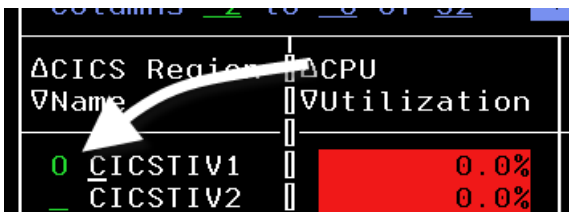
f) To reset the filters on the Task display, **Press F4** again.

g) In the filter popup, **enter 1** (for Transaction ID) and **Press Enter.** Blank out the filter and **Press F3.** You should now see the unfiltered CICS task display.

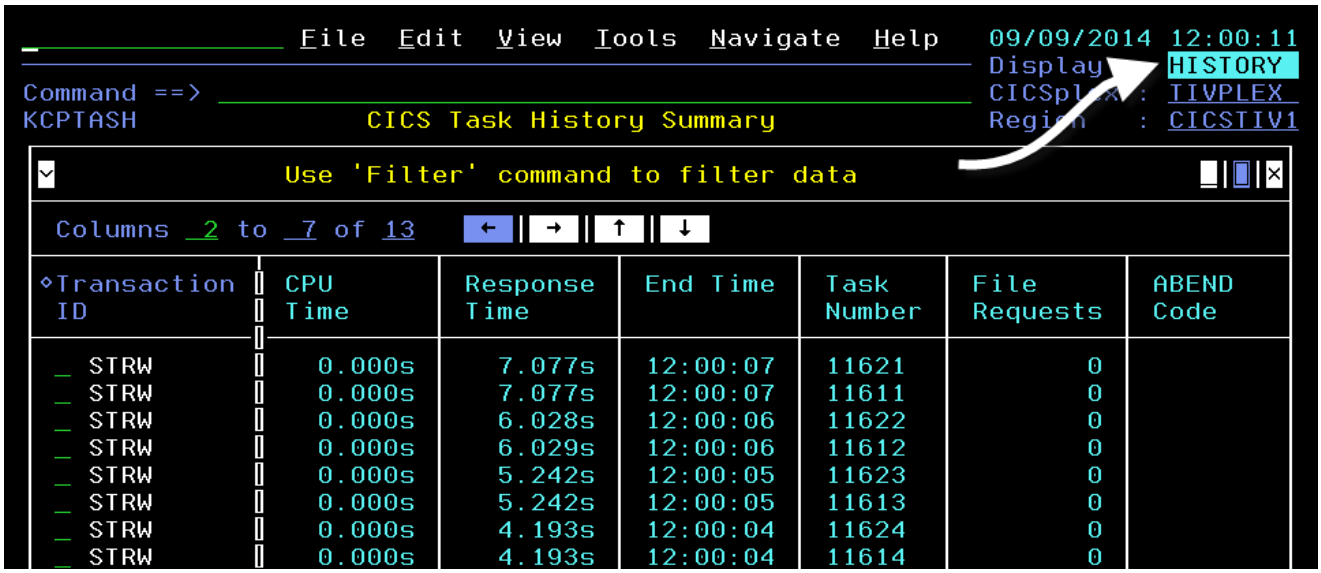
h) **Press F3** to return to the KCPRGNS panel

From the KCPRGNS display you may also look at CICS task history. Being able to see CICS task history is a new feature of the enhanced 3270 user interface. To see task history:

i) Position the cursor, next to CICS region (select CICSTIV1) **enter O** and **Press Enter**



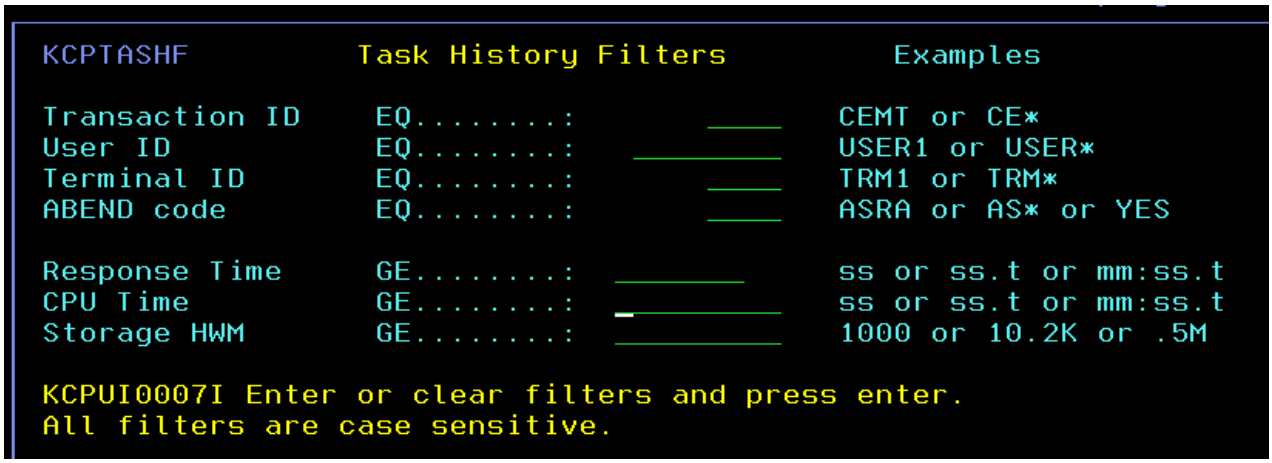
You are now looking at task history for the CICS region.



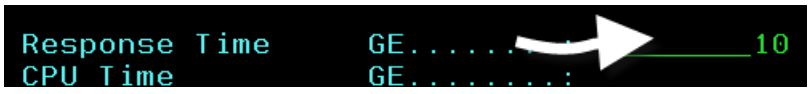
Note that in the upper right corner of the panel, history is indicated for the data content. You may filter the task history display to find specific transaction occurrences.

j) To filter the display, **Press F4**

You are now looking at the filter popup for the CICS task history panel.

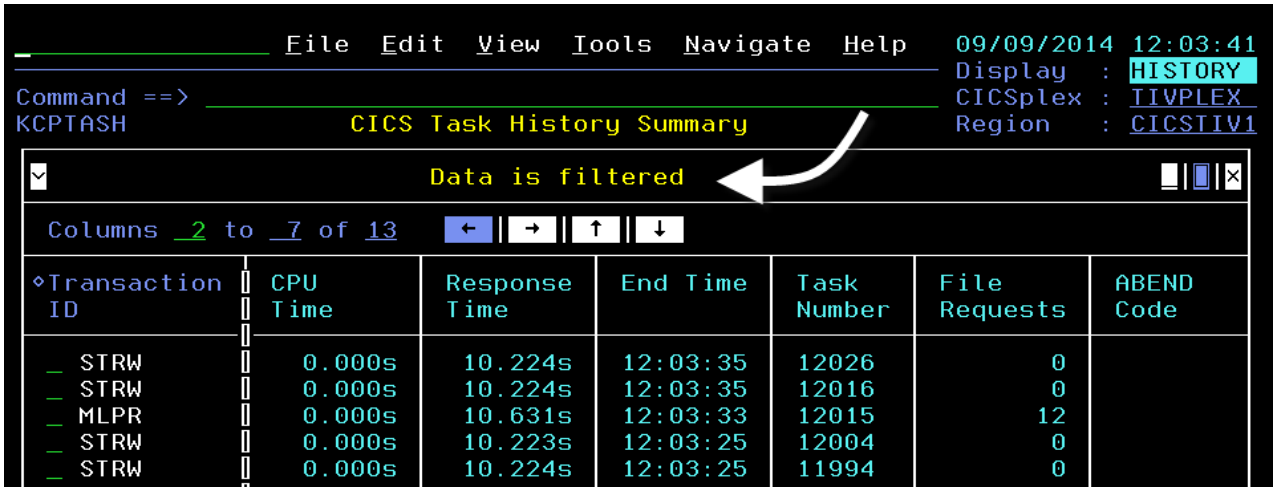


k) **Enter filter criteria**, (such as 10 in the response time field) and **Press Enter**



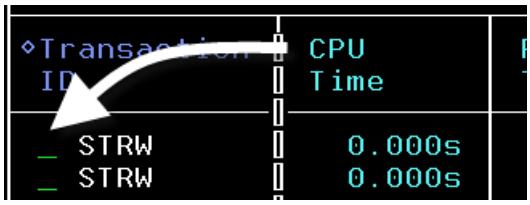
You are now looking at a filtered CICS task history display.

Note how the panel indicates that the data is filtered.

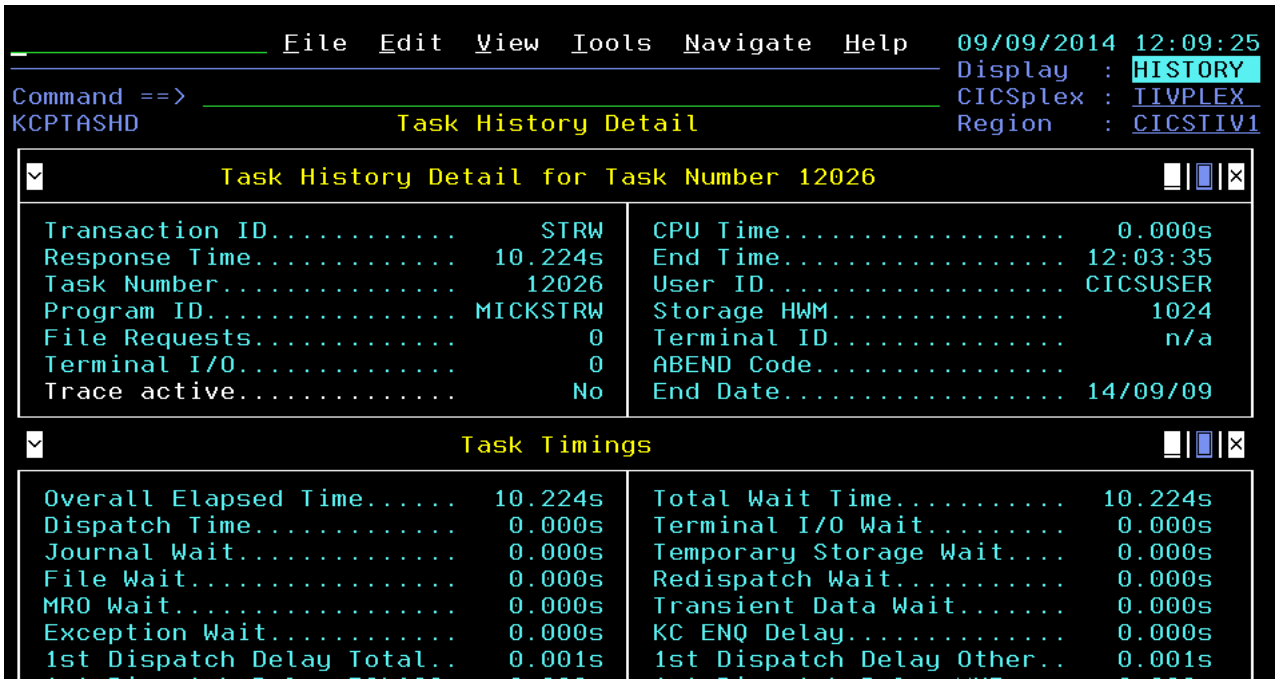


You may also drill down for detail on a specific transaction.

l) Position the cursor next to a transaction and **Press Enter**



You are now looking at the task history detail.

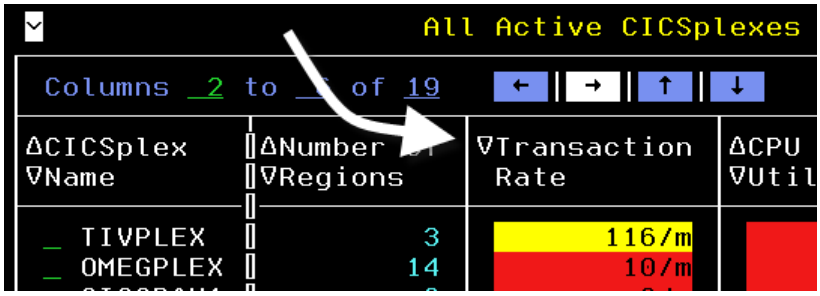


m) Press F3 multiple times until you return to the KOBSTART panel.

3.15 CICS Workload Analysis Scenario

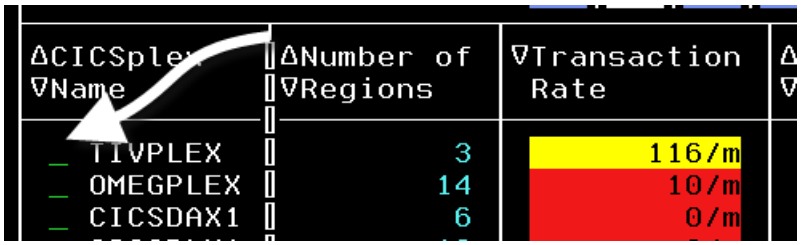
In this scenario you will see how to use the tool to analyze CICS workload relative to the various CICS regions in the system.

a) Position the cursor on the sort arrow on the Transaction Rate column and **Press Enter.**

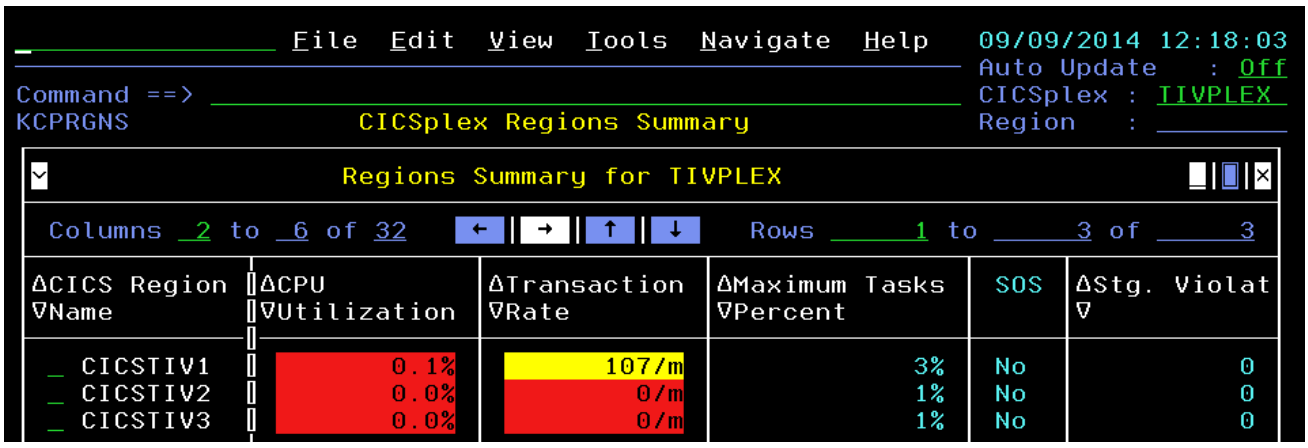


You are now looking at the various CICSplexes sorted by transaction rate.

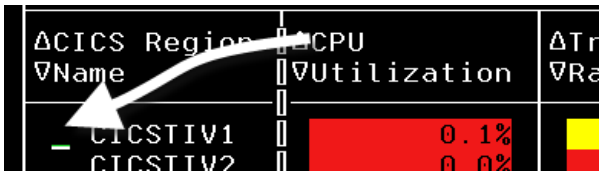
b) Position the cursor, by the CICSplex with the highest transaction rate and **Press Enter.**



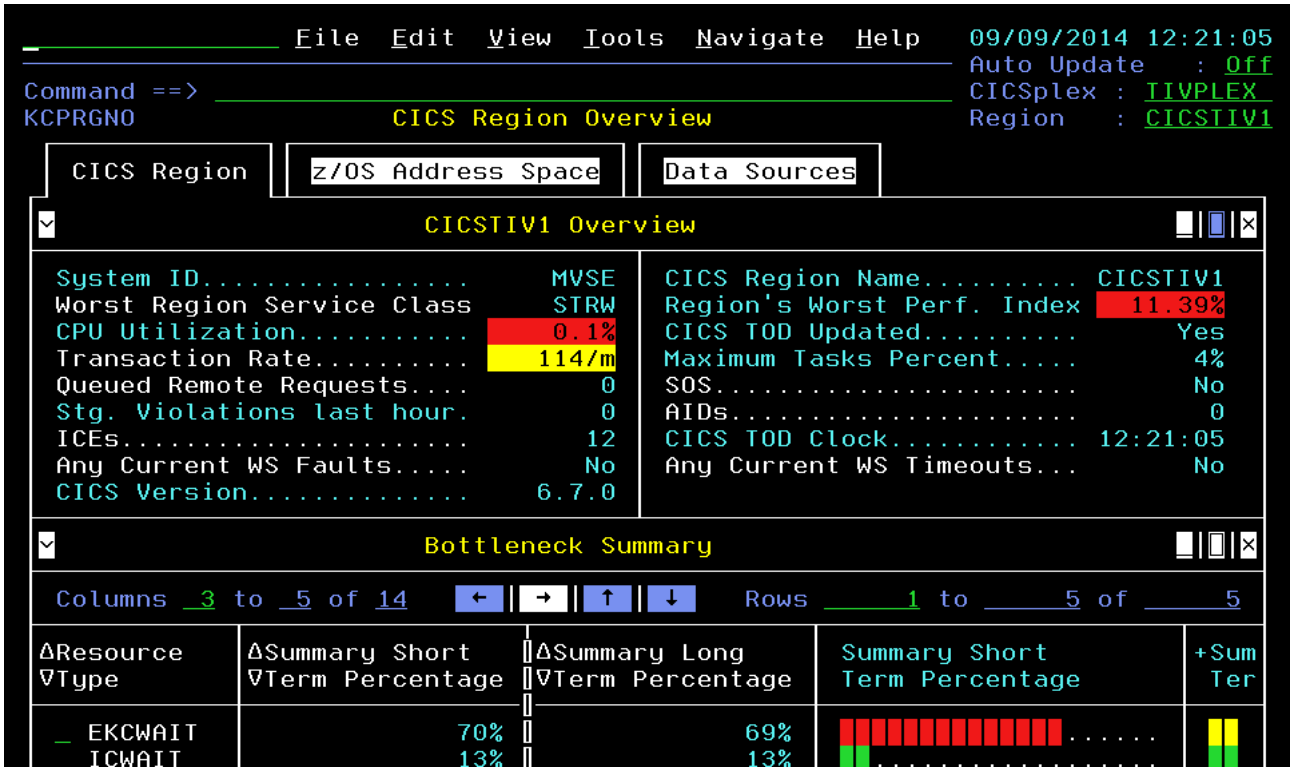
You are now looking at the CICS Region Summary for the CICSplex.



c) **Position the cursor** by the highest transaction rate CICS region and Press **Enter**



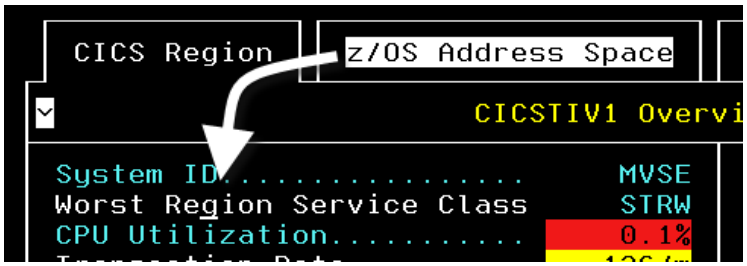
You are now looking at the CICS Region overview panel (KCPRGNO). This display provides a summary overview from a single set of panels of much of the critical analysis information for the CICS region.



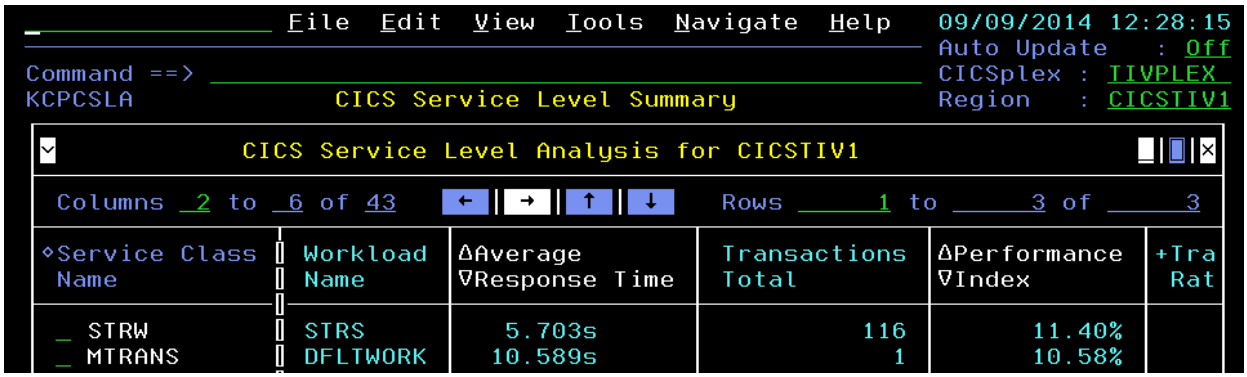
Note that there are several fields highlighted in white on this panel. Fields highlighted in white indicate an area to drill down for analysis. That makes this panel powerful as a tool to do drill down analysis when looking at CICS region activity.

What are the poorest performing transactions in the CICS region?

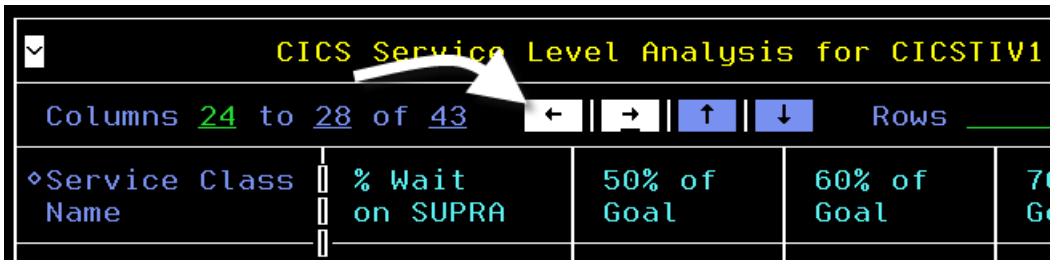
d) **Position the cursor** on the “Worst Region Service Class” text and **Press Enter**



You are looking at the Service Level Analysis display that shows average transaction response time and transaction counts.

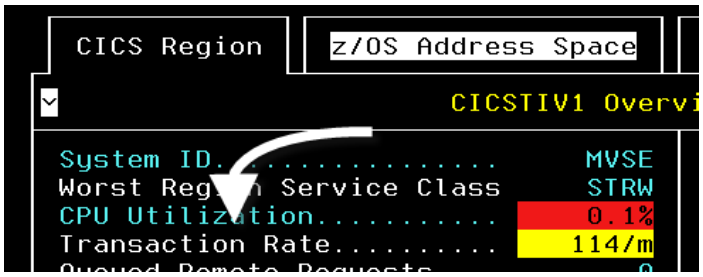


You may use the arrows or F11 to scroll the information to the right to see the delay %s as measured by service level analysis for the CICS workload.

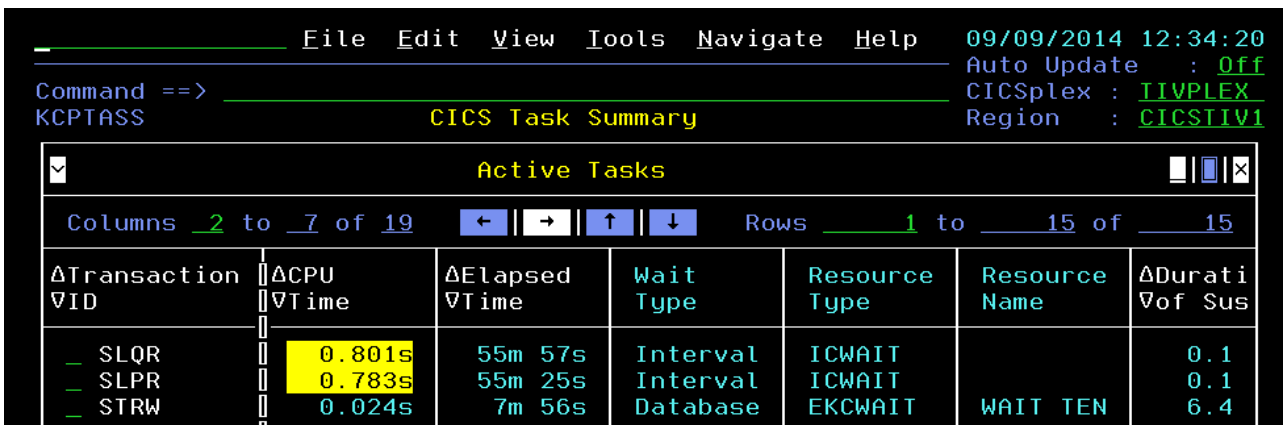


e) **Press F3** to return to the KCPRGNO panel

f) **Position the cursor** on the “Transaction Rate” text and **Press Enter**



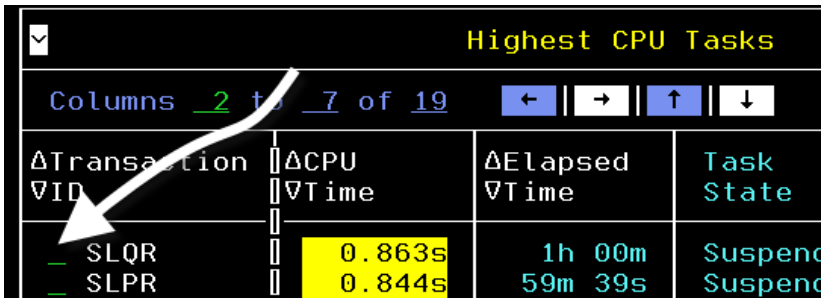
You are now looking at the Task Summary display for the CICS region.



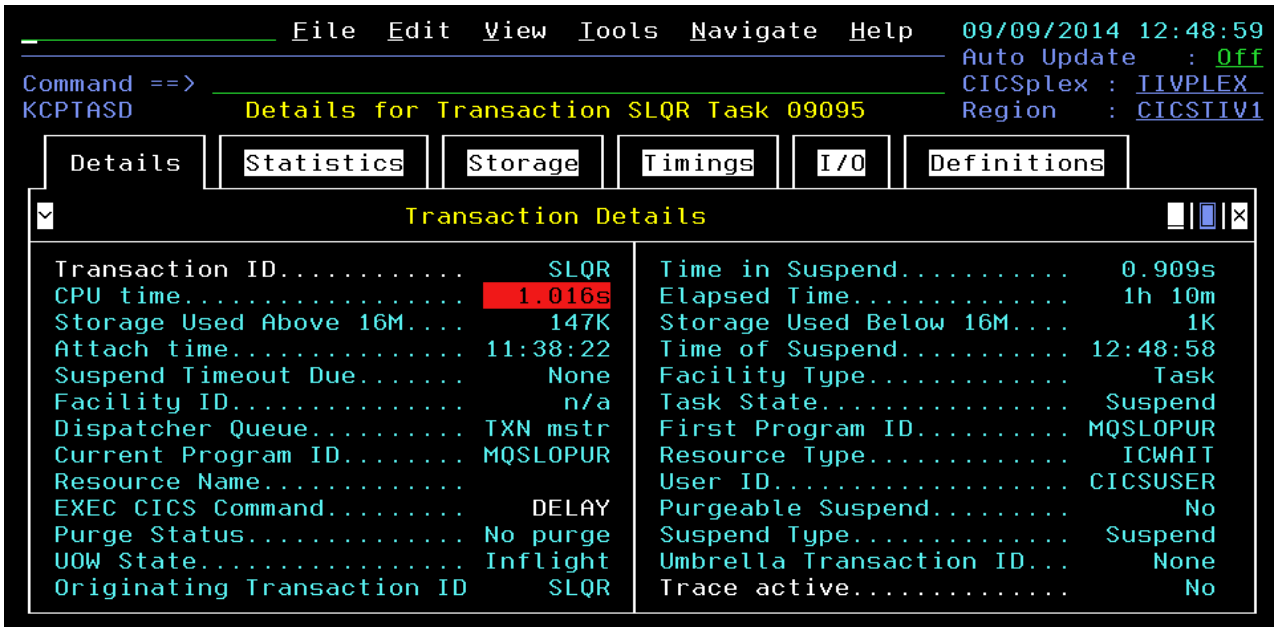
g) **Press F3** to return to the KCPRGNO panel

h) **Press F8** to scroll the panel to find the Highest CPU Tasks in the region

i) **Position the cursor** by the highest CPU task in the CICS region and **Press Enter**.

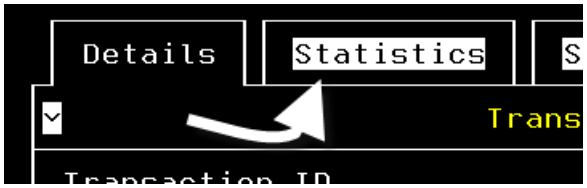


You are now looking at the task details for the selected CICS task. This panel shows a huge amount of information for the CICS task, including Transaction ID, CPU time, program information, storage utilization, and much more.

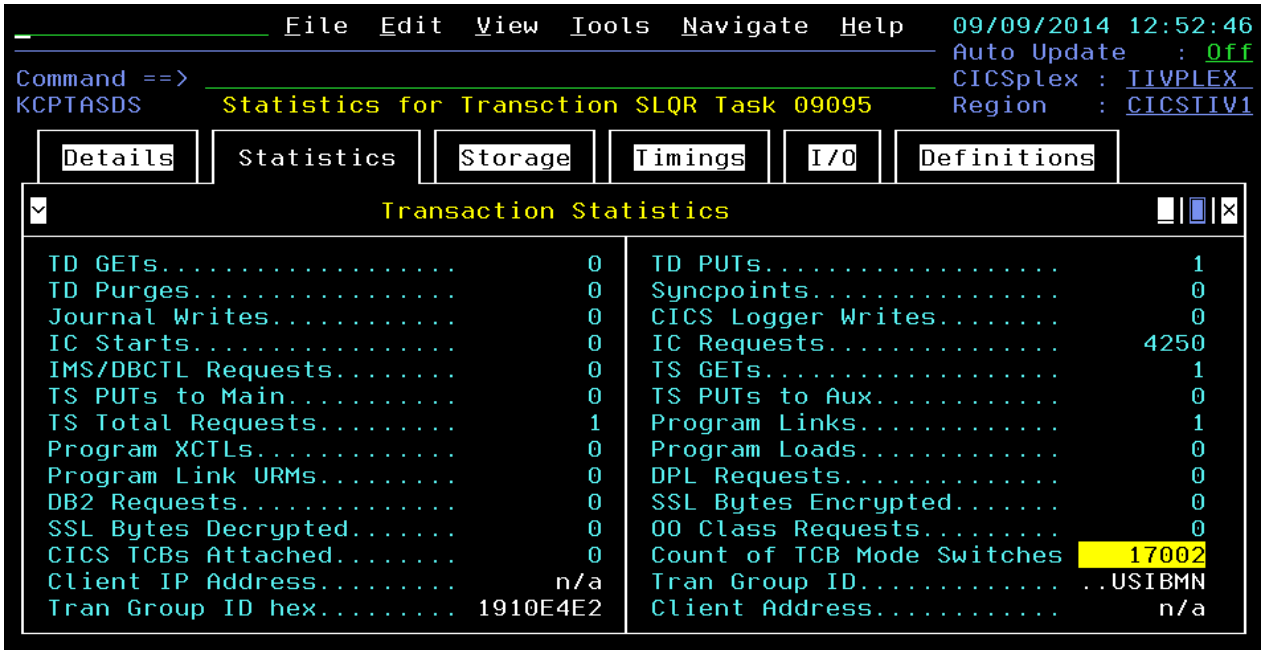


Note that there are tabs on the display to display the various categories of task detail. To see task statistics:

m) Position the cursor on the “Statistics” tab and **Press Enter**



You are now looking at the statistics counters for the CICS task.



n) Try the other tabs on the KCPTASDS panel to see the additional task details available

o) **Press F3** and then **Press F3** again to return to the KCPRGNS panel

You have now completed a top down scenario including the following:

Identified the busiest CICSplex

Drilled in on the CICSplex to see the CICS regions within the CICSplex

Identified the busiest CICS region

Drilled in for detail on processing within the CICS region

Identified the highest CPU transaction within the region

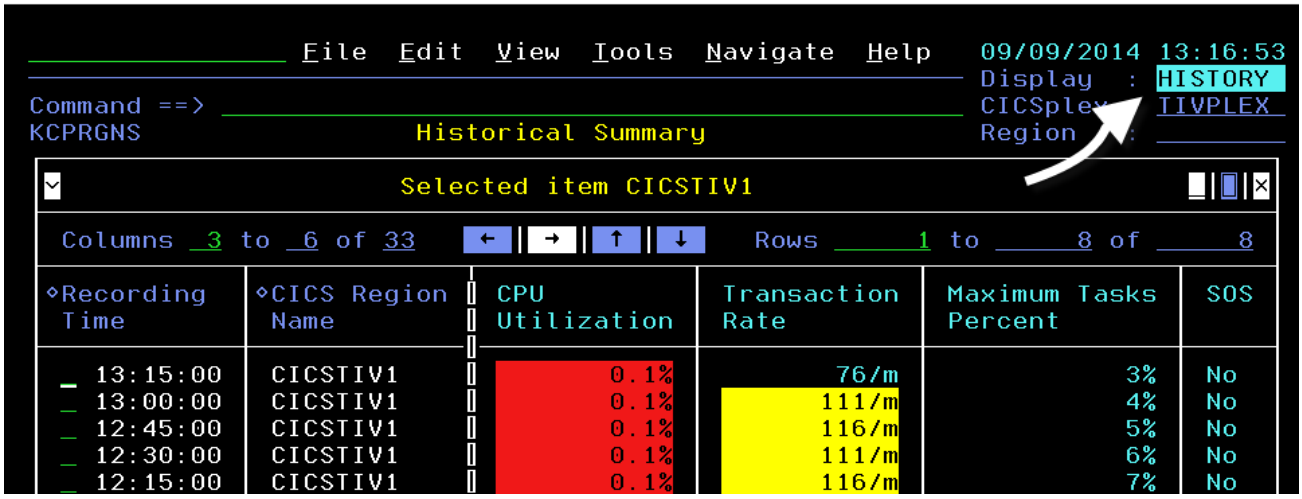
Drill down on the transaction for more detail

3.16 CICS Historical Region Analysis – New in V5.3

In this scenario you will see how to use the tool to analyze CICS workload relative to historical performance information captured over time. This scenario will demonstrate how you can look at CICS region activity over time. This scenario assumes you are on the KCPRGNS panel.

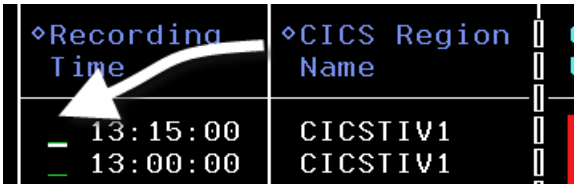
a) **Position the cursor** next to the CICS Region (select CICSTIV1) and **enter H** and **Press Enter**

You are now looking at CICS region level history over time. Each line represents a time interval.

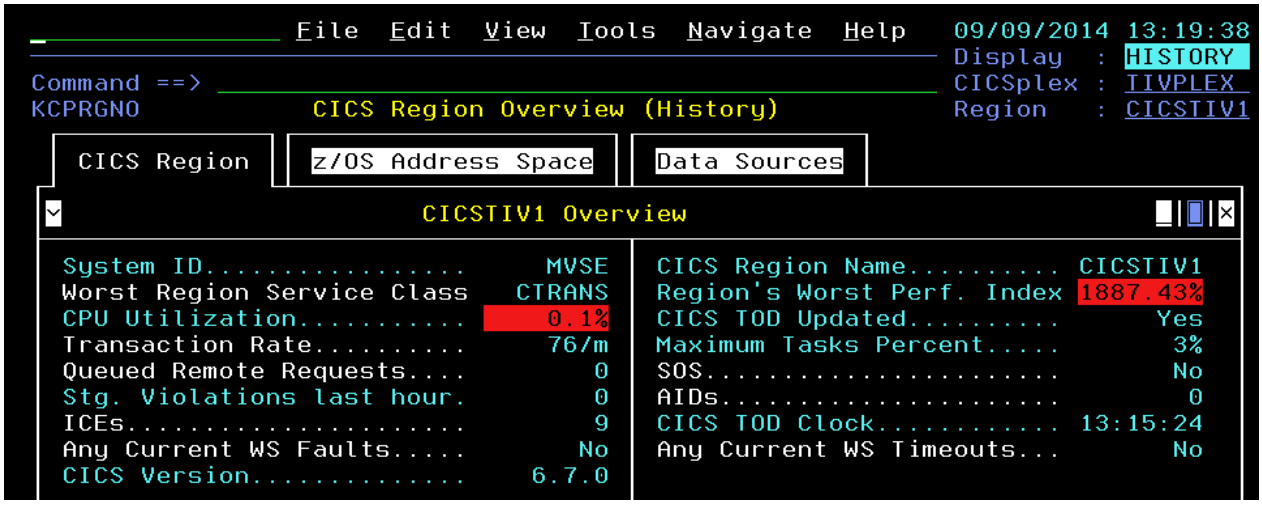


To see the detail for a given time interval:

b) **Position the cursor** next to a time interval and **Press Enter**



You are now looking at the CICS region information for the time period.



As you may have noted in the earlier history example, you may shift the history interval by using the history tool bar at the bottom of the panel.

c) **Position the cursor** on the time interval tool bar and **press Enter**

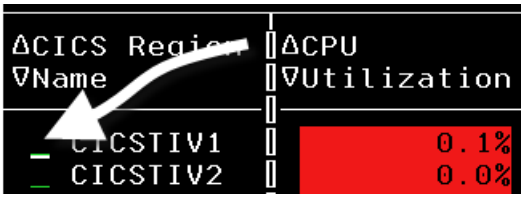
Note how the history time frame shifts each time you press enter. By viewing the history you may be able to see variations in workload activity, and different high usage CICS tasks over time.

d) **Press F3** and then **Press F3** again to return to the KCPRGNS panel

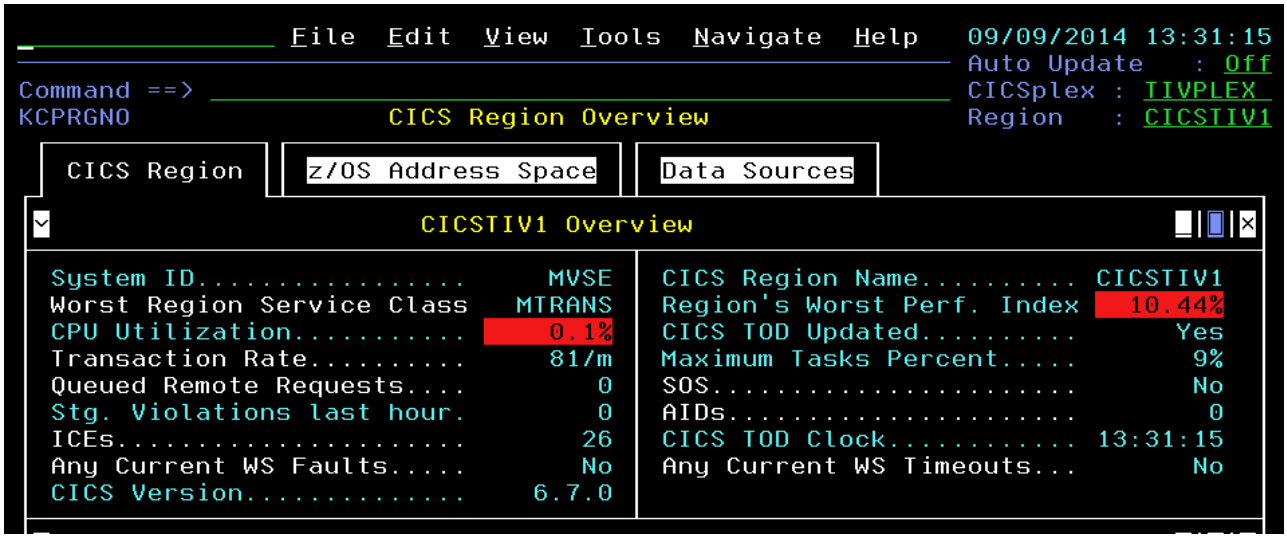
3.17 CICS Integration Through Embedded Data – New in V5.3

In this scenario you will see how OMEGAMON supports easy cross monitoring component navigation through a mechanism called embedded data. Embedded data allows the user to easily navigate from one monitoring component to another.

a) **Position the cursor** next to the CICS Region (select CICSTIV1) and **Press Enter**

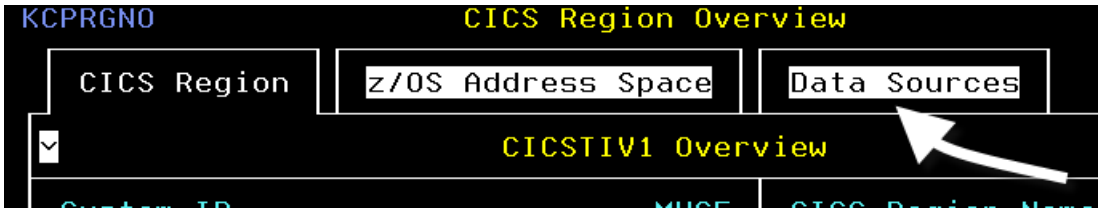


You are now looking at the KCPRGNO CICS region overview panel.

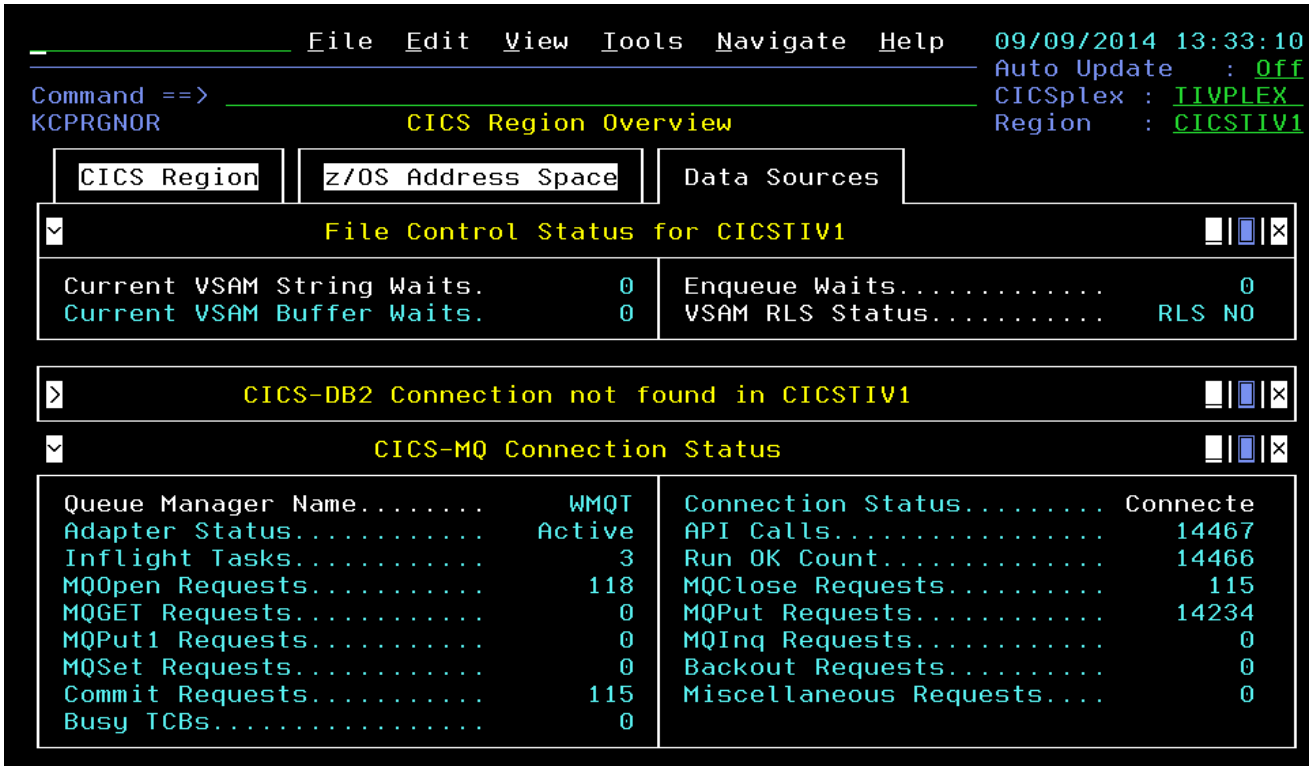


The KCPRGNO panel provides tabs for additional information on the CICS region.

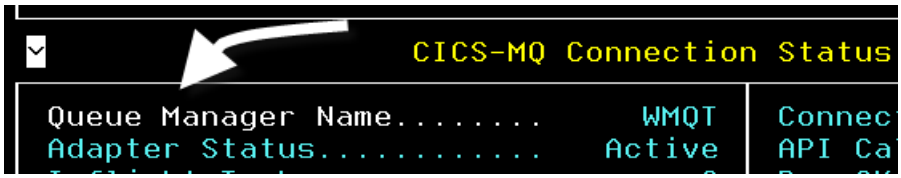
b) **Position the cursor** on the “Data Sources” tab and **Press Enter**



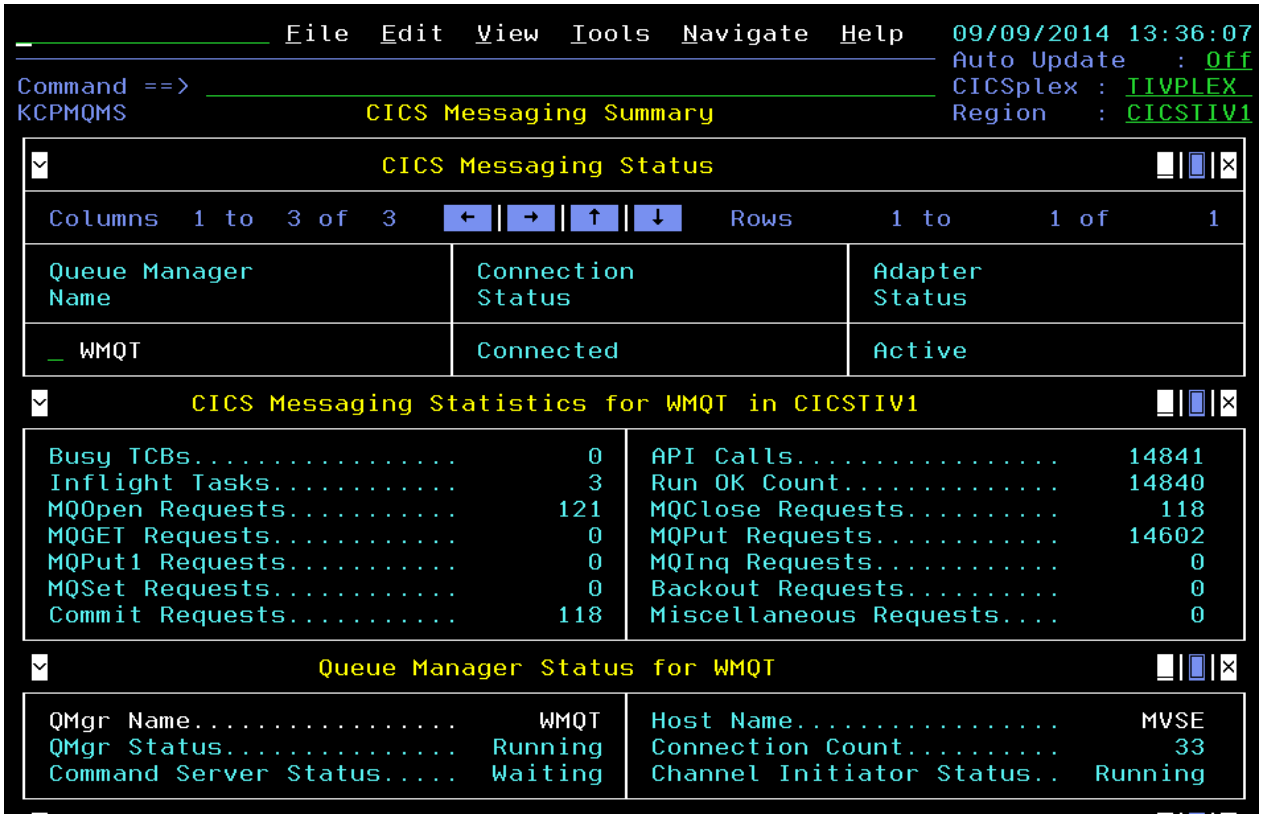
You are now looking at the CICS region data sources panel. Note that in this example the CICS region is connected to MQ Series.



c) **Position the cursor** on the white “Queue Manager Name” and **Press Enter**

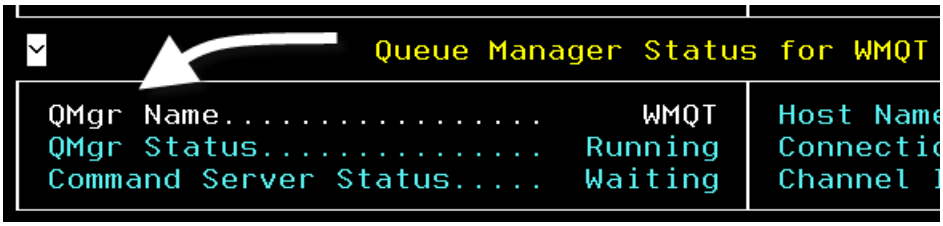


You are now looking at more information on the CICS to MQ messaging status.



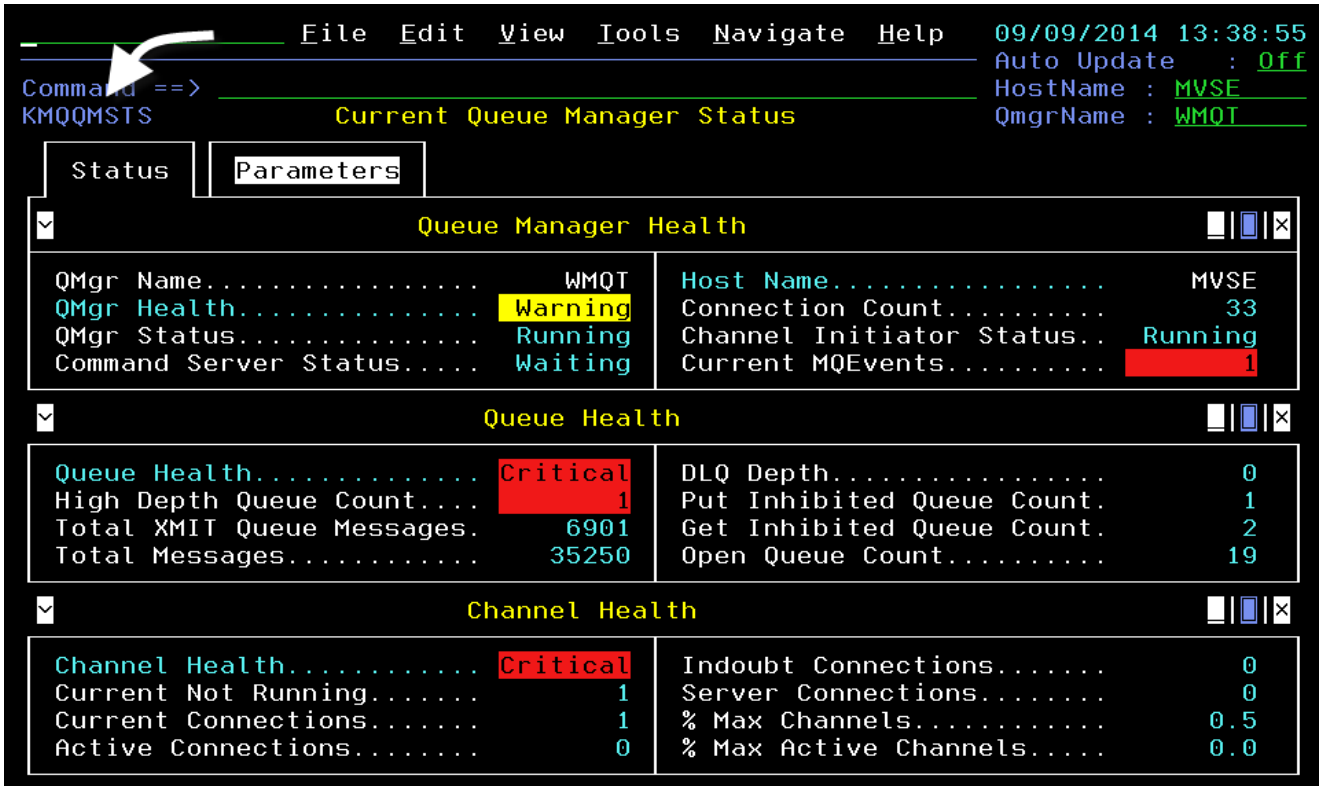
There are additional drill downs from the KCPMQMS panel.

d) **Position the cursor** on the white "QMgr Name" and **Press Enter**



You are now looking at monitoring detail on the MQ Series Queue manager. Note that the panel name is KMQQMSTS. This indicates that the monitoring information is coming from OMEGAMON Messaging. From the here the user may do more detailed drill down analysis of MQ activity.

This scenario demonstrates how embedded data functions to expedite navigation within the enhanced 3270 user interface.



e) **Press F3** multiple times to return to the KCPRGNS panel

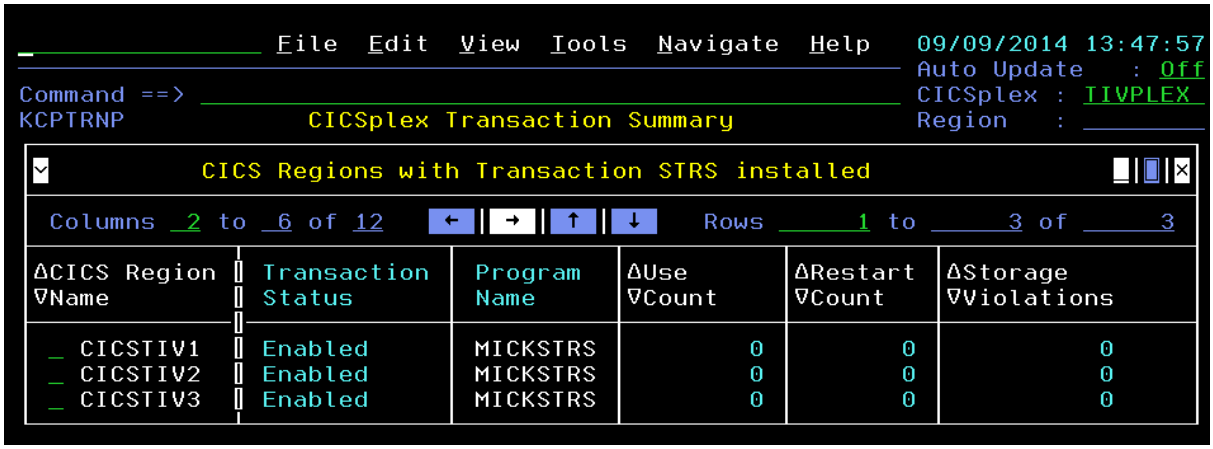
3.18 CICS Resource Analysis Scenario Using the FIND Command

One of the new commands added in OMEGAMON CICS V5.1 is the FIND command. With the FIND command you can have OMEGAMON CICS search across the CICSplex and locate CICS related resources defined across various CICS regions. The resources could include such things as transactions, programs, databases or other components.

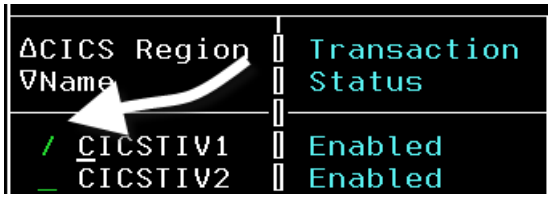
This exercise assumes you are on the KCPRGNS panel.

a) **Position the cursor** on the Command line and **enter the FIND command** (for example – find tran STRS)

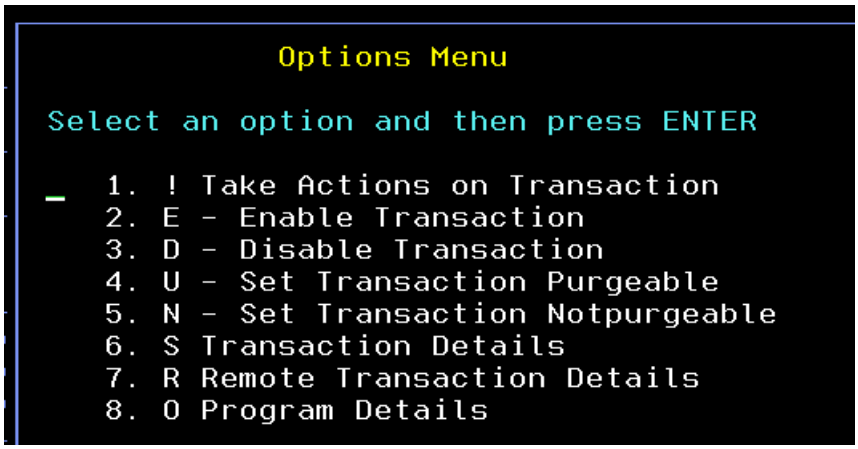
You are now looking at a panel that shows every CICS region in the CICSplex where the specified transaction is found. From the panel you may do various drill downs for analysis, or issue commands.



b) **Position the cursor** by a CICS Region Name, enter / and **Press Enter**



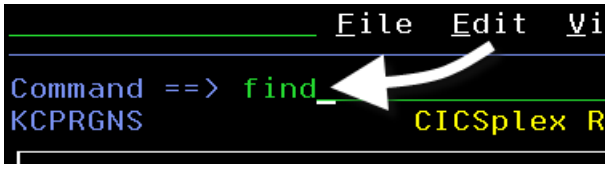
You will then see a popup with several navigation options.



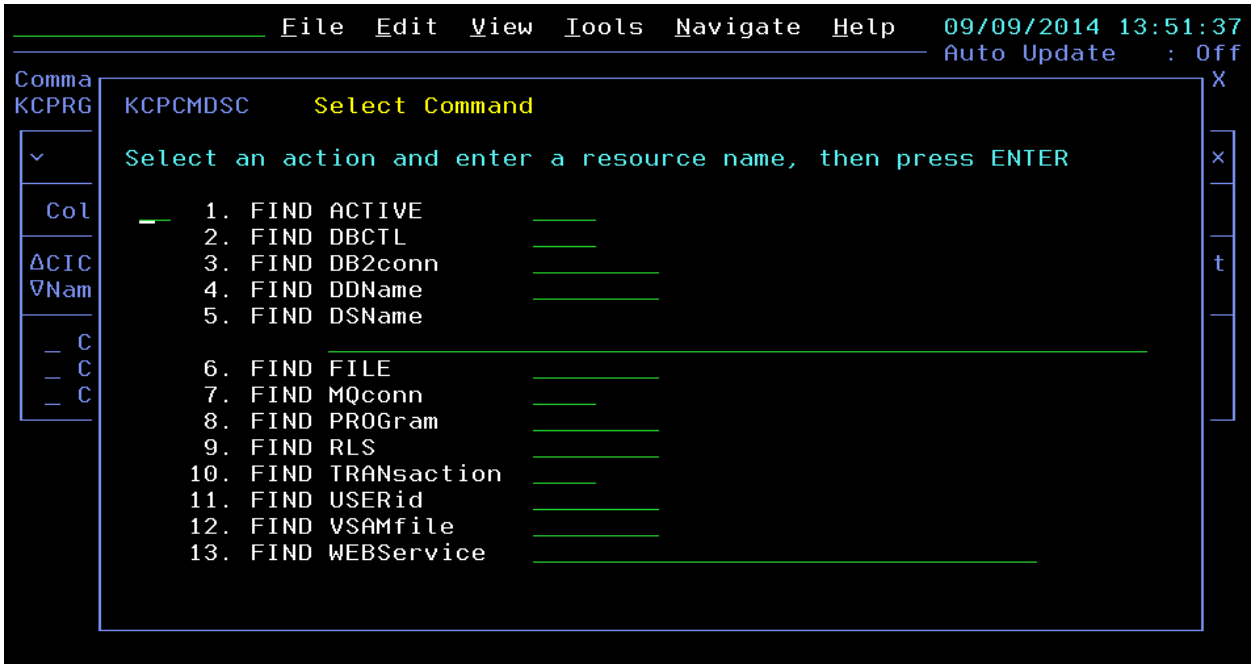
You are now looking at transaction details for the select transaction.

c) **Press F3** and then **Press F3** again to return to the KCPRGNS panel.

d) To see what else you can use the FIND command for, **position the cursor** on the Command line and **enter the FIND command** (this time with no other parms)



You are now looking at the FIND command popup. Notice that you can apply the FIND command to a variety of CICS resources, including programs, files, users along with transactions.



e) **Press F3** to return.

Congratulations. You have now completed the OMEGAMON CICS V5.3 lab exercise. Feel free to explore or to try other lab exercises.

Appendix A. Documentation Revision History

Date of Revision	Number	Completed by	Revision Log
9/9/2014	V6.0	Ed Woods	Combined Intro, z/OS, and CICS into one doc file. Updated for OM V5.3 content.
9/19/2014	V530	Lih Wang	Edits for Enter-prise2014 confer-ence Lab session.

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