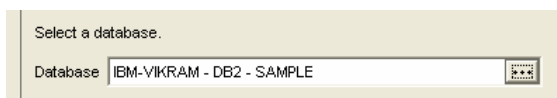


## LAB 11 – ACTIVITY MONITOR

### A. ACTIVITY MONITOR – ACTIVITY TEST

We created the STRAWMAN table in the Health Center lab exercise. We will do some queries and updates against this table to show activities through the Activity Monitor. Before we can begin running these queries, we need to set-up the monitoring tasks in the Activity Monitor. Please follow the steps given below:

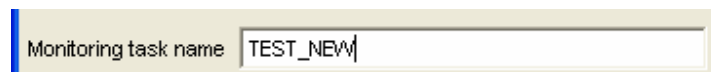
1. Start the Activity Monitor by typing command **db2am** from DB2 command window.
  - or Start ⇒ IBM DB2 ⇒ Monitoring ⇒ Activity Monitor
  - or right click option from within the Control Center on the instance name
2. Click the ellipse button and select the SAMPLE database. Click on [Next].



Select a database.

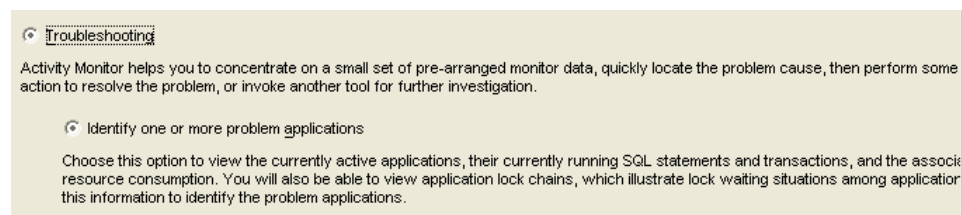
Database

3. On the next window, create a new monitoring task by clicking on the [New] button. Name it as you like. Click on [Next]



Monitoring task name

4. Select “Troubleshooting” and “Identify one or more problem applications”. Click on [Next].



☒ Troubleshooting

Activity Monitor helps you to concentrate on a small set of pre-arranged monitor data, quickly locate the problem cause, then perform some action to resolve the problem, or invoke another tool for further investigation.

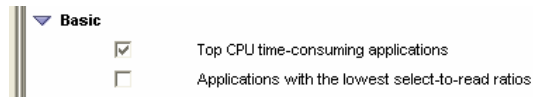
☒ Identify one or more problem applications

Choose this option to view the currently active applications, their currently running SQL statements and transactions, and the associated resource consumption. You will also be able to view application lock chains, which illustrate lock waiting situations among applications. This information is used to identify the problem applications.

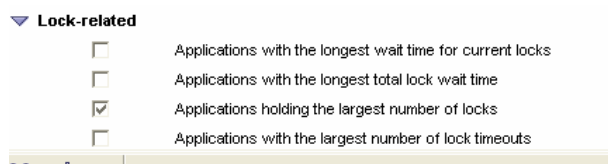
5. On next window, choose all applications. Click on [Next]

6. From the next window, named “Application Reports,” select the following monitoring tasks:

- Top CPU time consuming applications (under basic)



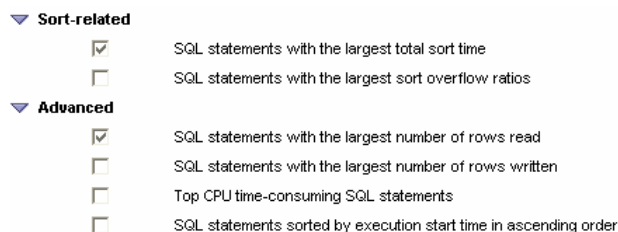
- Applications holding largest number of locks (under lock related)



[Next]

7. From the next window, named “SQL Statement Reports,” select the following monitoring tasks:

- SQL statements with the largest total sort time (under sort related)
- SQL statements with the largest number of rows read (under advanced)



[Next]

8. Skip Transaction reports [Next]

9. On the Summary Page click “Show Commands”

```
CONNECT TO SAMPLE;
CALL SYSPROC.AM_SAVE_TASK('C', 0, 'TEST_NEW', NULL, 'N', '1,8,11,13');
UPDATE DBM CFG USING DFT_MON_SORT ON;
UPDATE DBM CFG USING DFT_MON_LOCK ON;
UPDATE DBM CFG USING DFT_MON_STMT ON;
CONNECT RESET;
```

10. Click on [Finish] button to activate these reports.

You are now in the Activity Monitor you defined. You have chosen four reports for this monitor. You can select one from the GUI dropdown. If you want to see the individual reports simultaneously, you can set up reports in different Activity Monitors and run them simultaneously.

From a DB2 command window, run `Activity11001`:

- `C:\POT\11 Activity>Activity11001`
- As above command runs, watch the output in the activity monitor.

## B. ACTIVITY MONITOR – SHOW LOCK CHAINS

The lock waiting arising from the applications connected to the database can be analyzed easily with the Activity Monitor. To demonstrate this, we created the following test scenario:

Create four tables T1, T2, T3 & T4 under schema 'JOHN' and create two rows in each table by using the following setup:

User Name	Updated table	Selected Table	Script Name
First DEFAULT user on your laptop	T1		Activity11004.DDL
Second user 'TOM'	T2	T1	Activity11005.DDL
Third user 'LISA'	T3	T2	Activity11006.DDL
Fourth user 'ALEX'	T4	T3	Activity11007.DDL
Fifth user 'JEFF'	T3		Activity11008.DDL
Sixth user 'ART'	T4		Activity11009.DDL
Seventh user 'HARRY'	T4		Activity11010.DDL

We will execute all seven of the above scripts simulating different applications connected to the database. The command `Activity11003` executes all the above scripts. This command script spawns seven different DB2 command line windows after a sleep of 5 seconds.

We should already have Activity Monitor running from the last test. If it is not, start the Activity Monitor using command `db2am` and configure it for a report called "Applications holding the largest number of locks".

1. With Activity Monitor started, run this command to kick off everything:

```
C:\POT\11 Activity>Activity11003
```

2. Go to the Activity monitor and right click on one of the db2 command showing lock waiting.

Report: Applications holding the largest number of locks

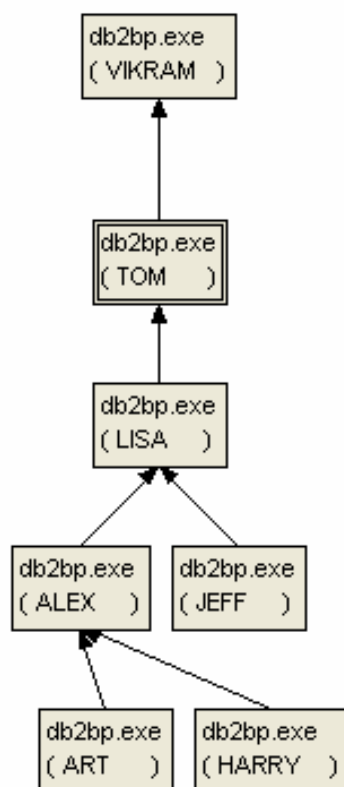
Filter: All

Maximum number of applications displayed: 10

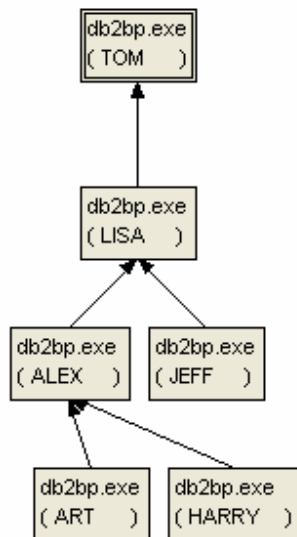
No automatic refresh

Application Handle (agent ID)	Application Name	Authorization ID	Application ID	Locks Held	Lock Wait Start Time	Total Lock Wait Time
	Force	K	*LOCAL DB2.0410...	8	10/13/2004 3:16:07 PM	944
	Show Latest Statements		*LOCAL DB2.0410...	8	10/13/2004 3:15:57 PM	1045
	Show Lock Chains	RY	*LOCAL DB2.0410...	8	10/13/2004 3:16:02 PM	994
119 db2bp.exe		JEFF	*LOCAL DB2.0410...	5	10/13/2004 3:16:23 PM	792
121 db2bp.exe		ART	*LOCAL DB2.0410...	5	10/13/2004 3:16:12 PM	893
114 db2bp.exe		VIKRAM	*LOCAL DB2.0410...	4		843
126 javaw.exe		VIKRAM	*LOCAL DB2.0410...	4		

3. Select “Show Lock Chains” and you will see the “Application Lock Chain” window showing the graphical representation of applications on lock wait.



4. Go to one of the DB2 CLP command window where the application is not waiting and you can see the command prompt. If you issue a COMMIT, the application lock chain will change. If you refresh the application lock chain window, you will see the lock chain as shown below:



5. If you go to other DB2 command windows and commit the result, the application lock chain will reduce.

### C. EXTRA EXERCISES

1. To see applications from a line command  
Command Prompt ⇒ **db2 list applications**
2. To see applications the Control Center  
Control Center ⇒ All Systems ⇒ DB2 (instance) ⇒ Right Click ⇒ Applications

### D. CLEANUP

Please run the following script to clean up objects that we created to demonstrate lock chain waiting.

```
C:\POT\11 Activity>Activity11011
```