Optymalizacja wydajnościowa na styku SAS RTDM z bazą Oracle

Paweł Olesiuk

Copyright © SAS Institute Inc. All rights reserved.

AGENDA

Analiza wydajnościowa SAS RTDM

Zwiększenie wydajności SAS RTDM z Oracle

Copyright © SAS Institute Inc. All rights reserved.

AGENDA

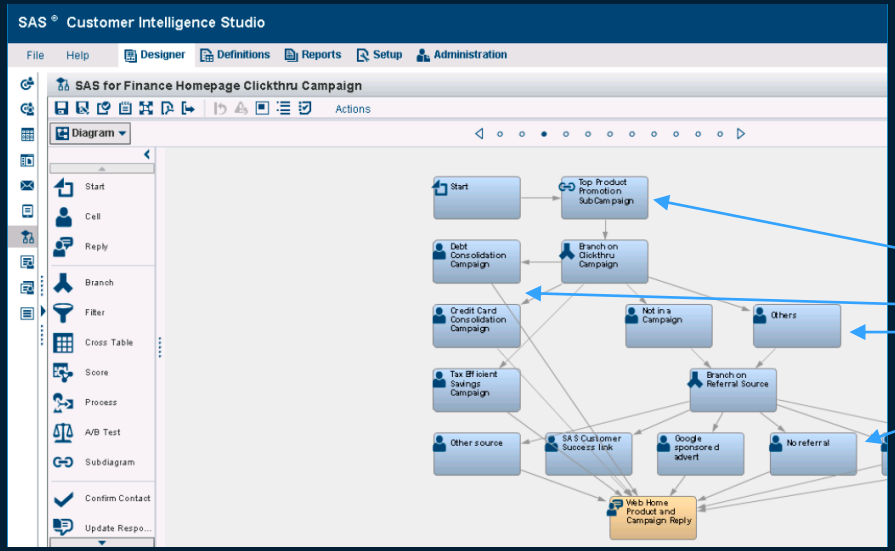
Analiza wydajnościowa SAS RTDM

Zwiększenie wydajności SAS RTDM z Oracle

Copyright © SAS Institute Inc. All rights reserved.

SAS RTDM i Oracle

500
zapytań/sekundę



Copyright © SAS Institute Inc. All rights reserved.

Logi w SAS RTDM

1. DSEngineServer-Perf.log

2020-10-27 15:54:20,820|ACTIVITY_TIME|WiVAgOco7FeVsz1OI4dRi|Activity ODCZYT_Z_BAZY took 345530 nanos

2020-10-27 15:54:20,820|ACTIVITY_TIME|WiVAgOco7FeVsz1OI4dRi|Activity GROOVY took 65505 nanos

2020-10-27 15:54:20,820|ACTIVITY_TIME|WiVAgOco7FeVsz1OI4dRi|Activity JYTHON took 70706 nanos

2020-10-27 15:54:20,821|ACTIVITY_TIME|WiVAgOco7FeVsz1OI4dRi|Activity ZAPIS_DO_BAZY took 345530 nanos

2020-10-27 15:54:20,821|FLOW_TIME|WiVAgOco7FeVsz1OI4dRi|Flow DIAGRAM_GLOWNY took 68392814 nanos

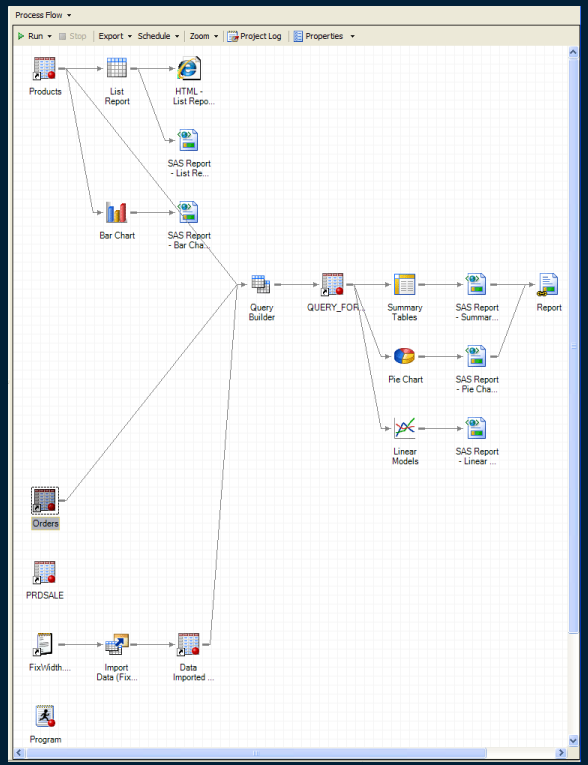
2. DSEngineServer-SQL-Perf.log

2020-10-27 15:54:20,820|TableCacheJDBCLoader|WiVAgOco7FeVsz1OI4dRi|TableCacheJDBCLoader.select() times(nanos)[Prepare: 7701 Execute: 947581 SQL: SELECT COLUMN FROM A WHERE ID = ?]

2020-10-27 15:54:20,821|TableCacheJDBCLoader|WiVAgOco7FeVsz1OI4dRi|TableCacheJDBCLoader.select() times(nanos)[Prepare: 7701 Execute: 947581 SQL: INSERT INTO TABLE A(ID) VALUES (?)]

Copyright © SAS Institute Inc. All rights reserved.

Narzędzie do analizy wydajnościowej SAS RTDM

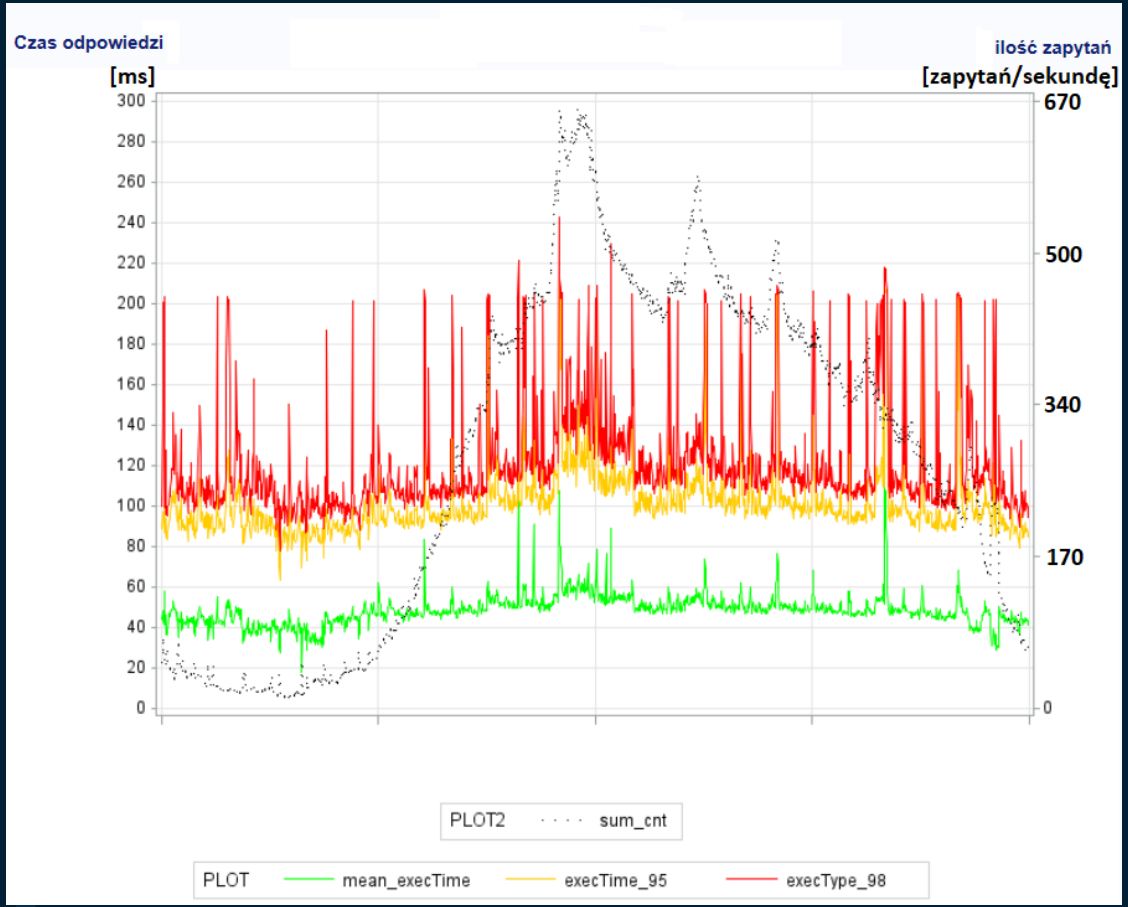


Analizujemy czasy i ilości wykonań:

- diagramów
- poddiagramów
- data procesów
- SAS procesów (groovy, jython)
- WEB procesów
- zapytań SQL

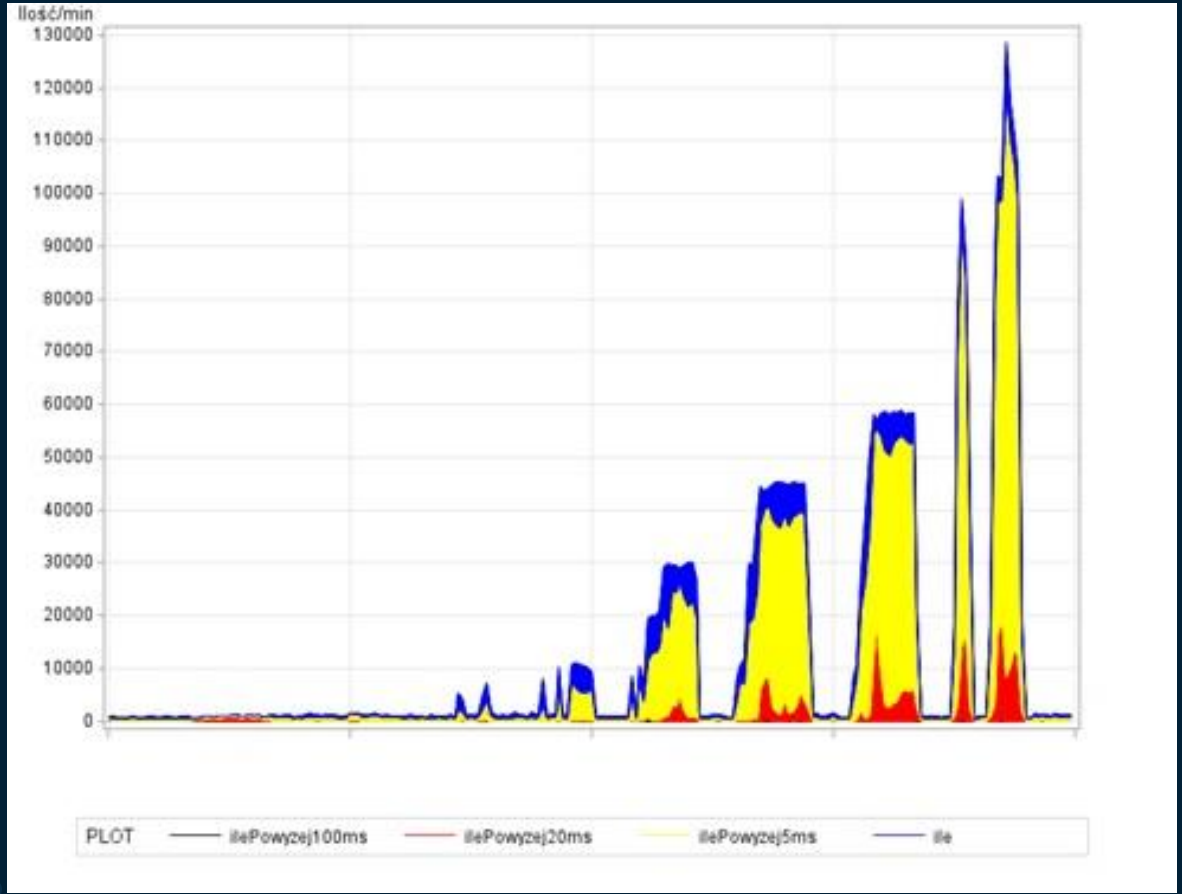
Copyright © SAS Institute Inc. All rights reserved.

Wykresy wydajnościowe SAS RTDM



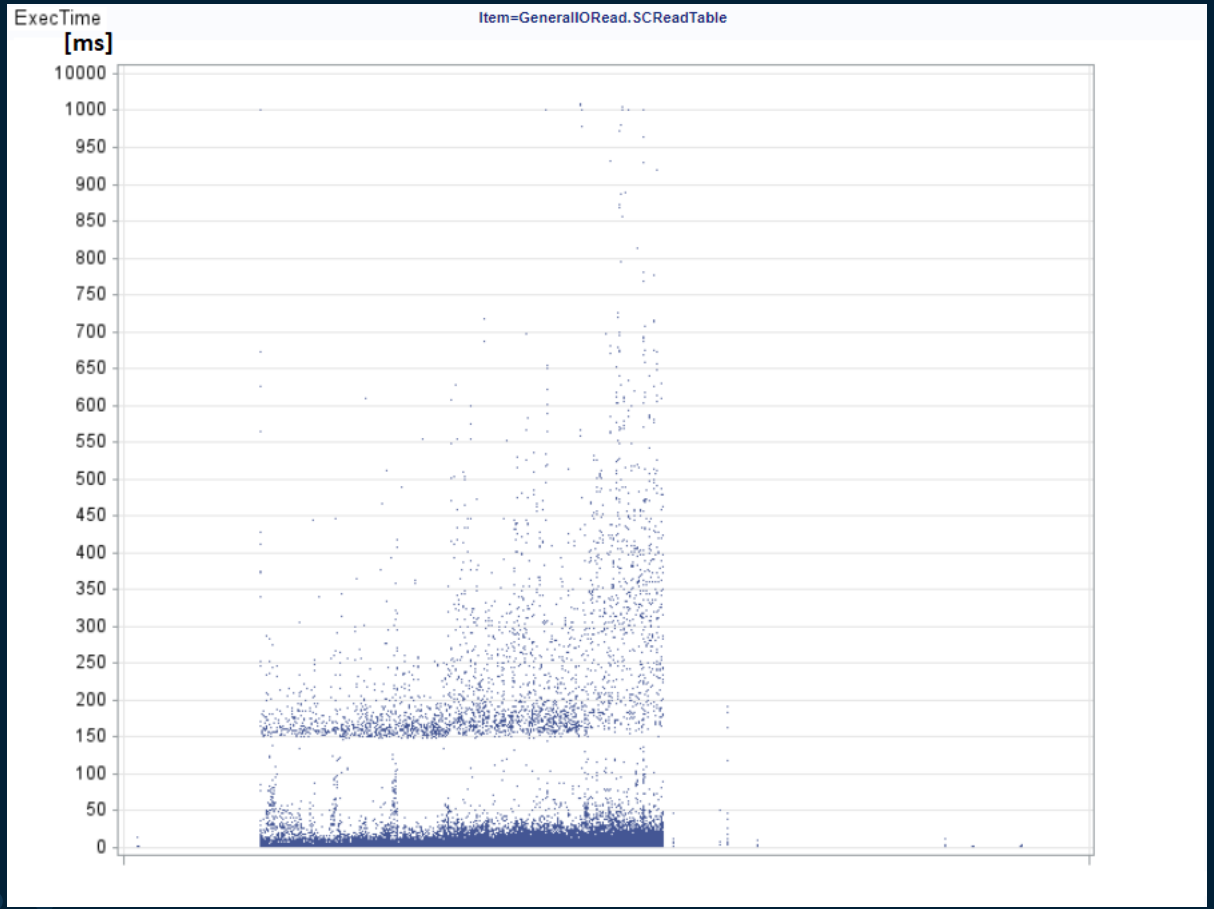
Copyright © SAS Institute Inc. All rights reserved.

Wykresy wydajnościowe SAS RTDM



Copyright © SAS Institute Inc. All rights reserved.

Wykresy wydajnościowe SAS RTDM



Copyright © SAS Institute Inc. All rights reserved.

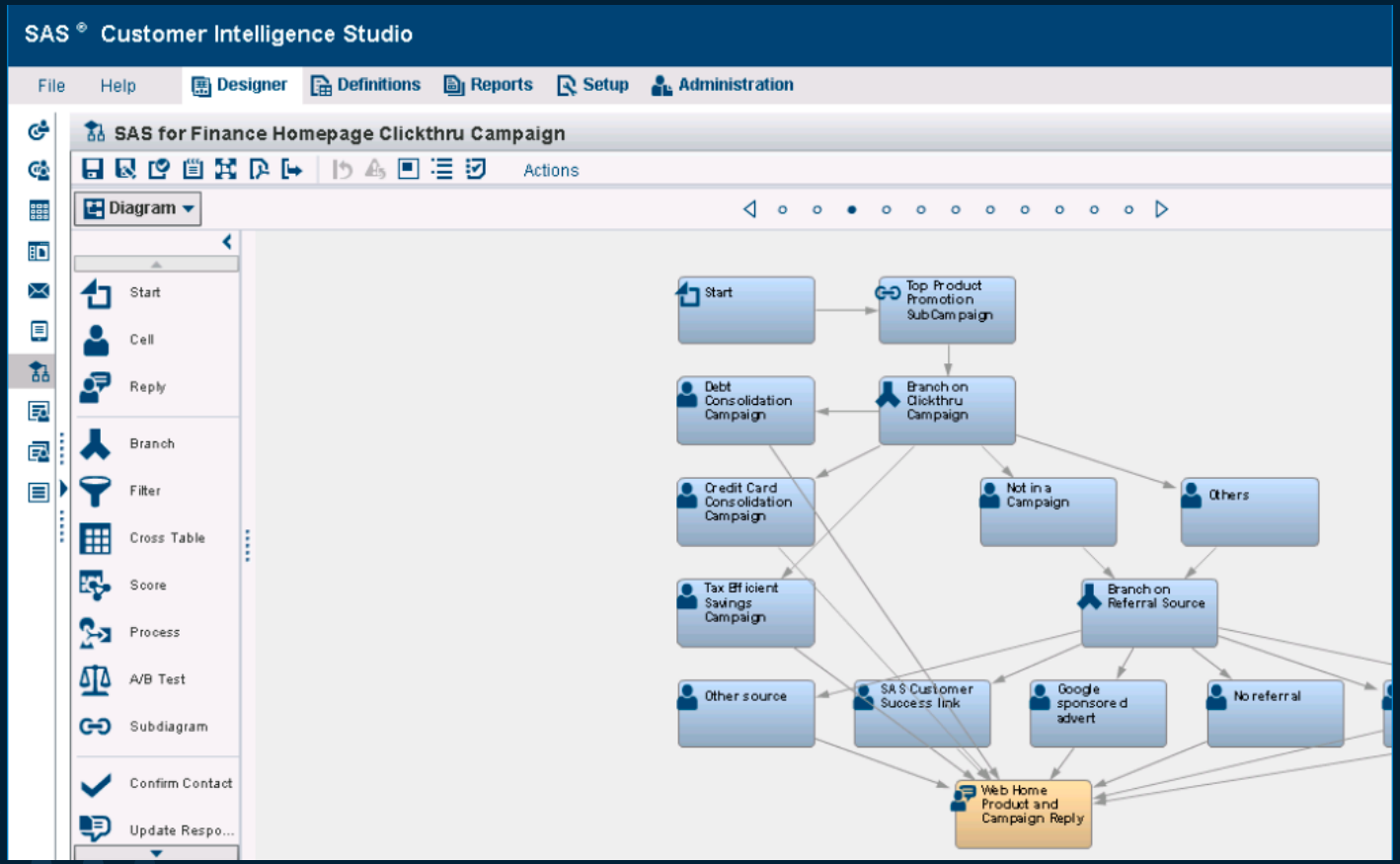
AGENDA

Analiza wydajnościowa SAS RTDM

Zwiększenie wydajności SAS RTDM z Oracle

Copyright © SAS Institute Inc. All rights reserved.

1. Timeout odpowiedzi diagramów w SAS RTDM

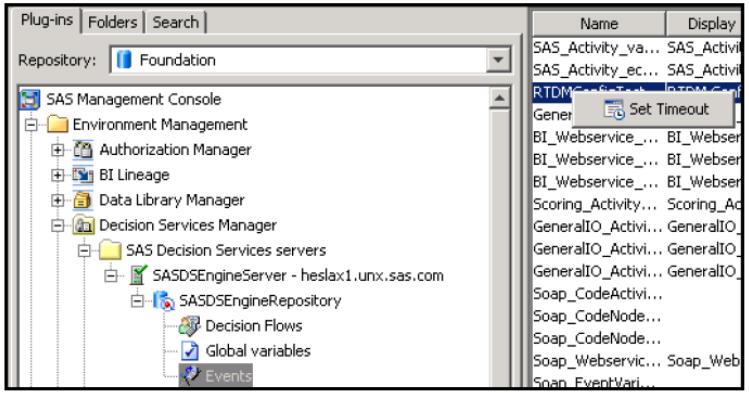


Copyright © SAS Institute Inc. All rights reserved.

1. Timeout odpowiedzi diagramów w SAS RTDM

1. Launch SAS Management Console.
2. Expand the **Decision Services Manager** and **SAS Decision Services servers** folders.

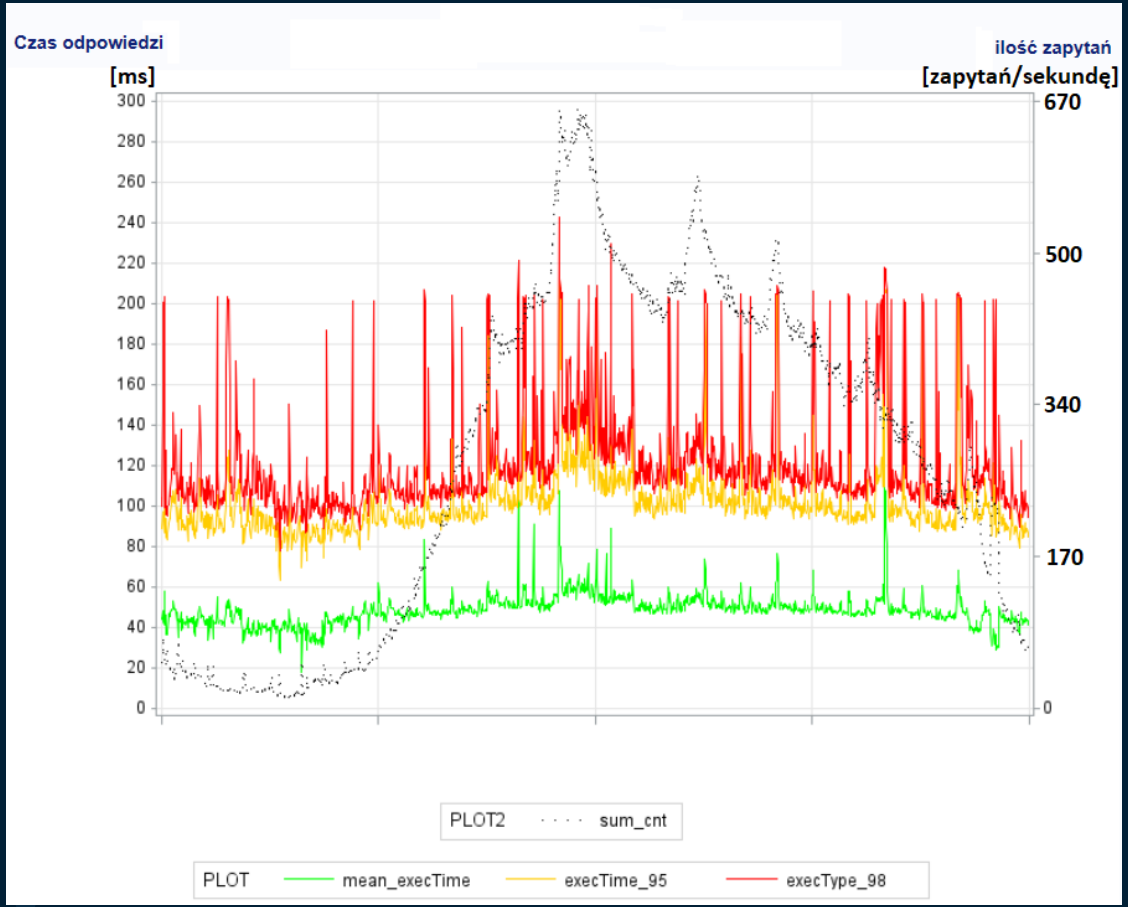
   Expand the system that contains the event that you want to update. Expand the **Events** folder and the repository.
3. Right-click the event that you want to change, and select **Set Timeout**.



4. Select **Enable** to edit the time-out value, enter the value in milliseconds, and click **OK**. If **Enable** is cleared, then the time-out value for the event is disabled.

Copyright © SAS Institute Inc. All rights reserved.

1. Timeout odpowiedzi diagramów w SAS RTDM



Copyright © SAS Institute Inc. All rights reserved.

2. Commit asynchroniczny dla zapisów do Oracle z SAS RTDM

Commit w Oracle działa dwufazowo:

1. zapis danych na dysk – bez zmian synchronicznie
2. zapis do logów – zmiana na zapis asynchroniczny

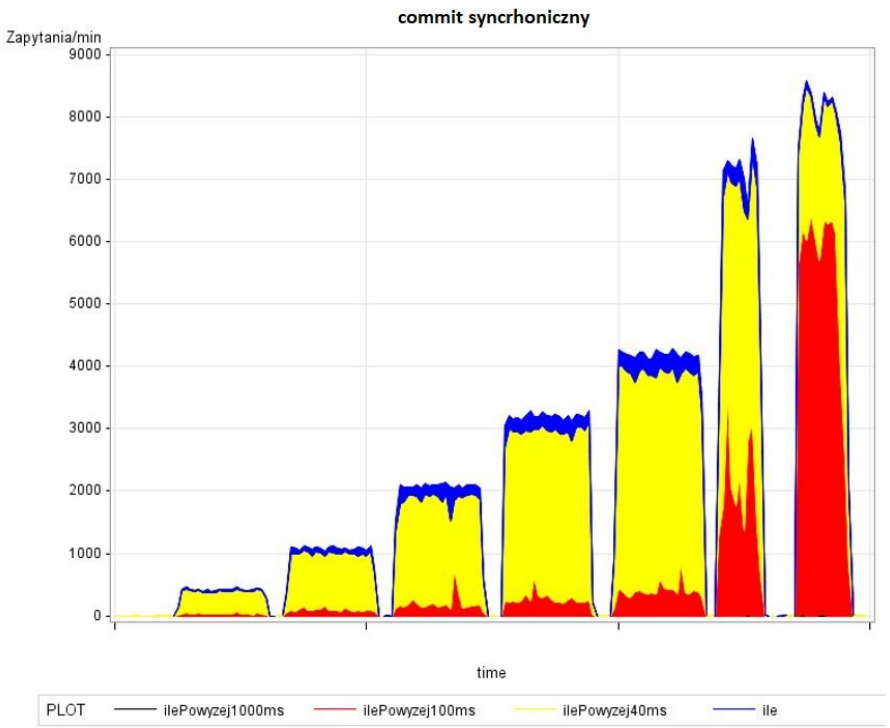
```
ALTER SESSION SET COMMIT_LOGGING = BATCH;
ALTER SESSION SET COMMIT_WAIT = NOWAIT;
```

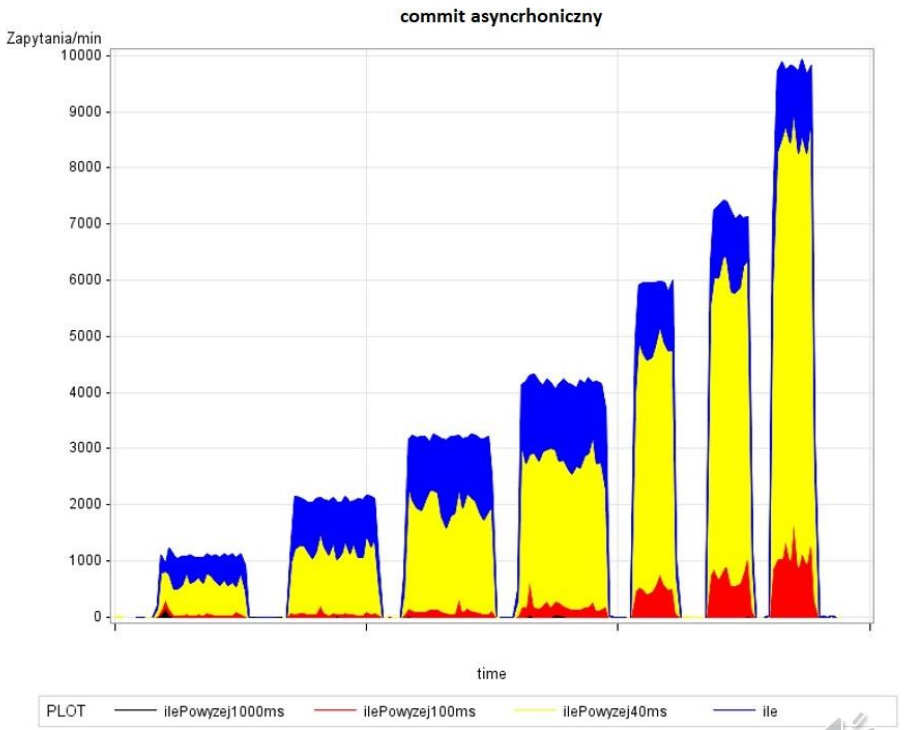
Uwaga

Może to naruszyć trwałość transakcji ACID (Atomicity, Consistency, Isolation, Durability), jeśli baza danych zostanie nieoczekiwanie zamknięta.

Copyright © SAS Institute Inc. All rights reserved.

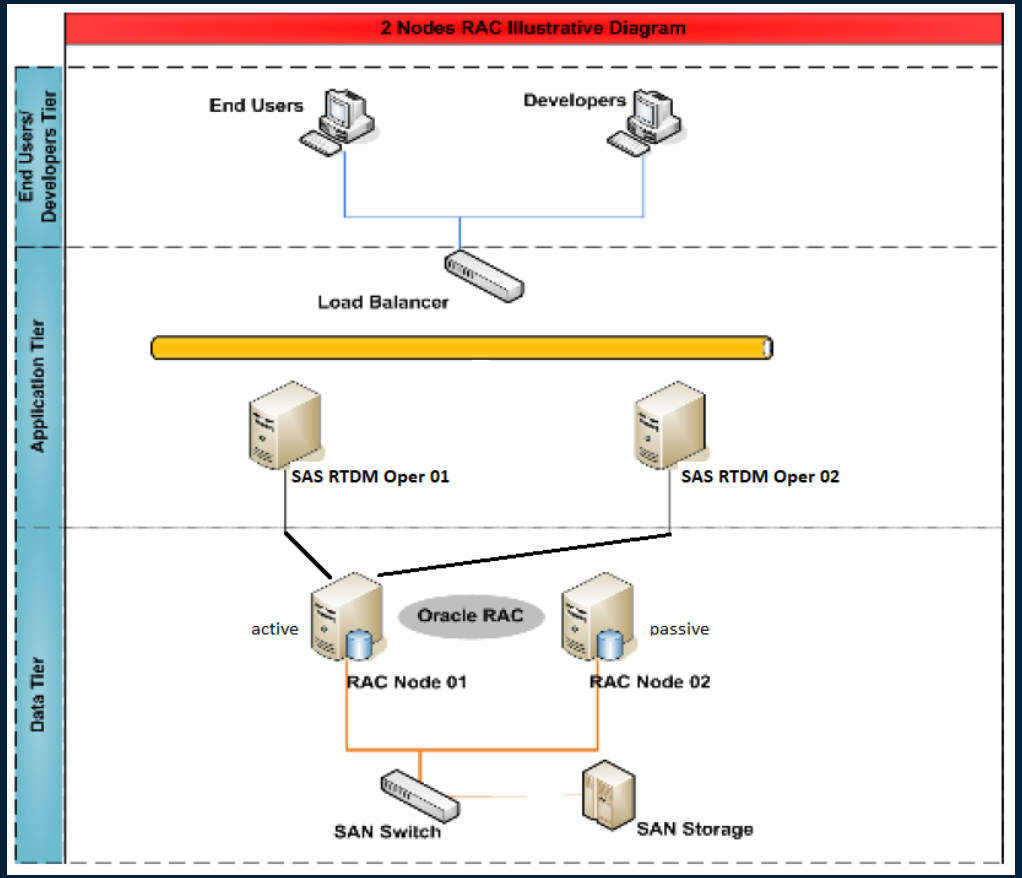
2. Commit asynchroniczny dla zapisów do Oracle z SAS RTDM





Copyright © SAS Institute Inc. All rights reserved.

3. SAS RTDM z dwoma aktywnymi nogami Oracle RAC

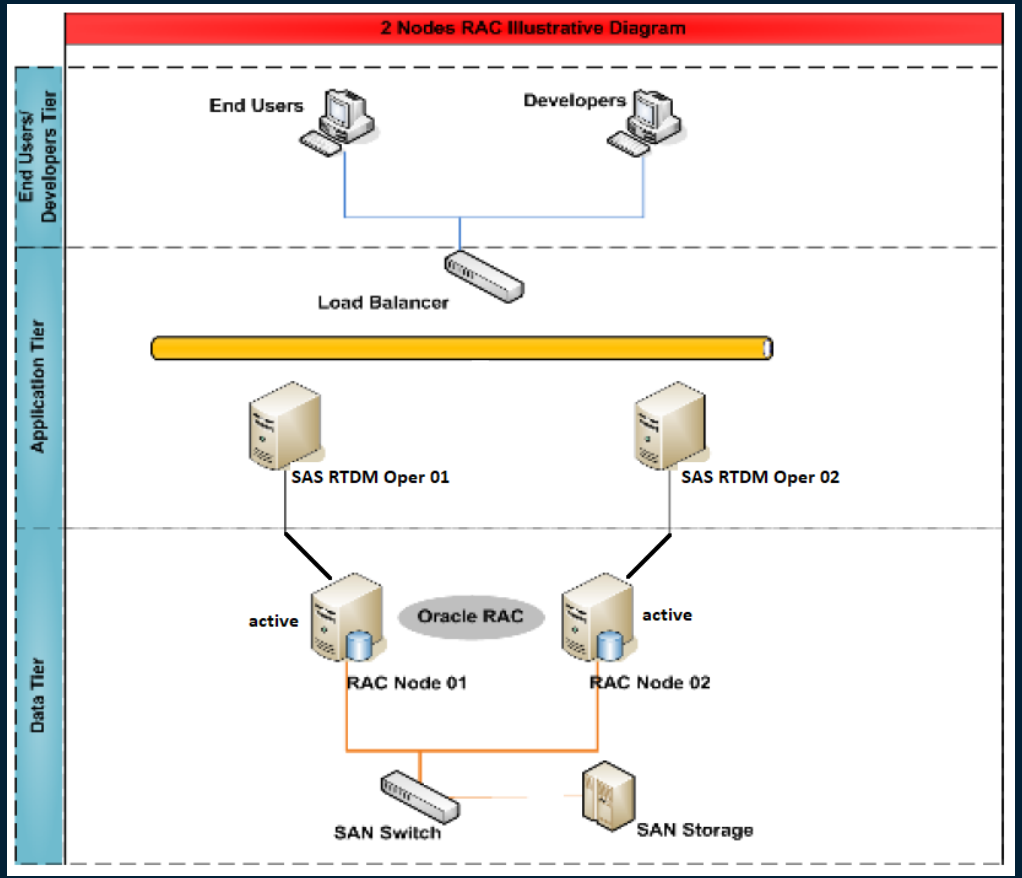


Źródło:

https://www.oracle.com/technetwork/database/availability/racdbawareapplications-1933522.pdf

Copyright © SAS Institute Inc. All rights reserved.

3. SAS RTDM z dwoma aktywnymi nogami Oracle RAC



Źródło:

https://www.oracle.com/technetwork/database/availability/racdbawareapplications-1933522.pdf

Copyright © SAS Institute Inc. All rights reserved.

3. SAS RTDM z dwoma aktywnymi nogami Oracle RAC

Quick Checklist

Item	Recommendations	Checked
1	**Scalability Checks**	
1.1	Did applications scale well on Oracle Single instance before considering to migrate on to RAC Database?	
1.2	If Applications are using Advanced Queuing, has load partition been considered?	
1.3	Have the applications and schema been designed keeping into consideration of running them on RAC database?	
1.4	Are the applications well tested for scalablity?	
1.5	Considerations for XA Applications?	
1.6	Considerations while using Oracle Sequences on a RAC database?	
1.7	Considered Automatic Space Segment Management for RAC Database?	
2	**High Availability Checks**	
2.1	Leverage service features of RAC by configuring Applications to use services?	
2.2	Using of Standard Oracle Pools?	
2.3	Evaluated Connection Time and Run time Load balancing?	
2.4	Building Retries in the Application?	
2.5	Integrate Applications using FAN API?	
3	**Functionality Considerations Checks**	
3.1	Applications using DBMS_PIPE	
3.2	Applications accessing external files from within the DB	
3.3	Applications using External Tables feature	
3.4	Applications using System Views	
3.5	Applications using DBMS_JOB	

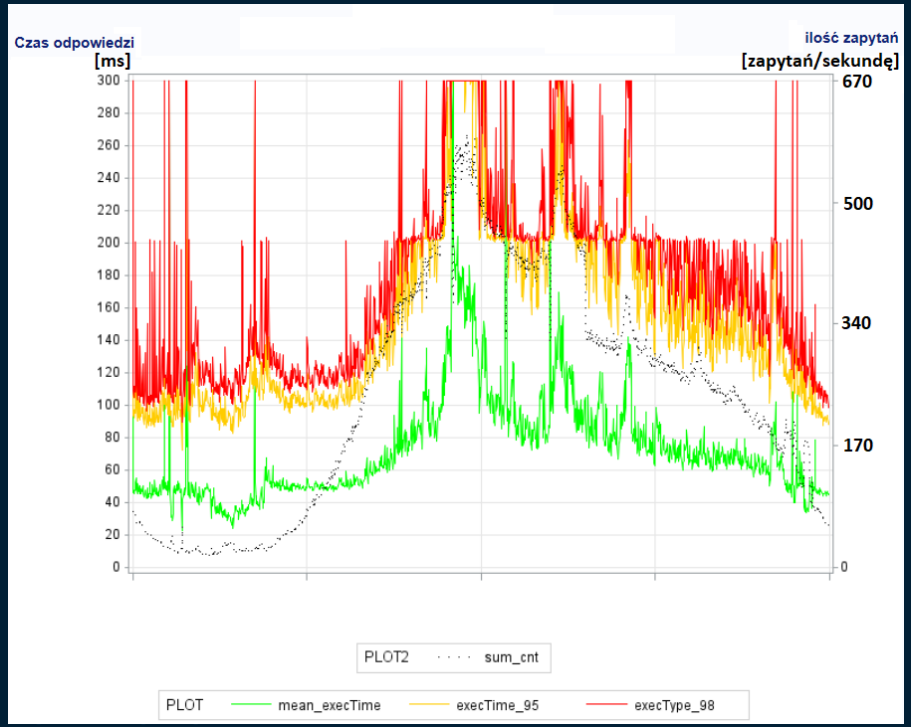
Źródło:

https://www.oracle.com/technetwork/database/availability/racdbawareapplications-1933522.pdf

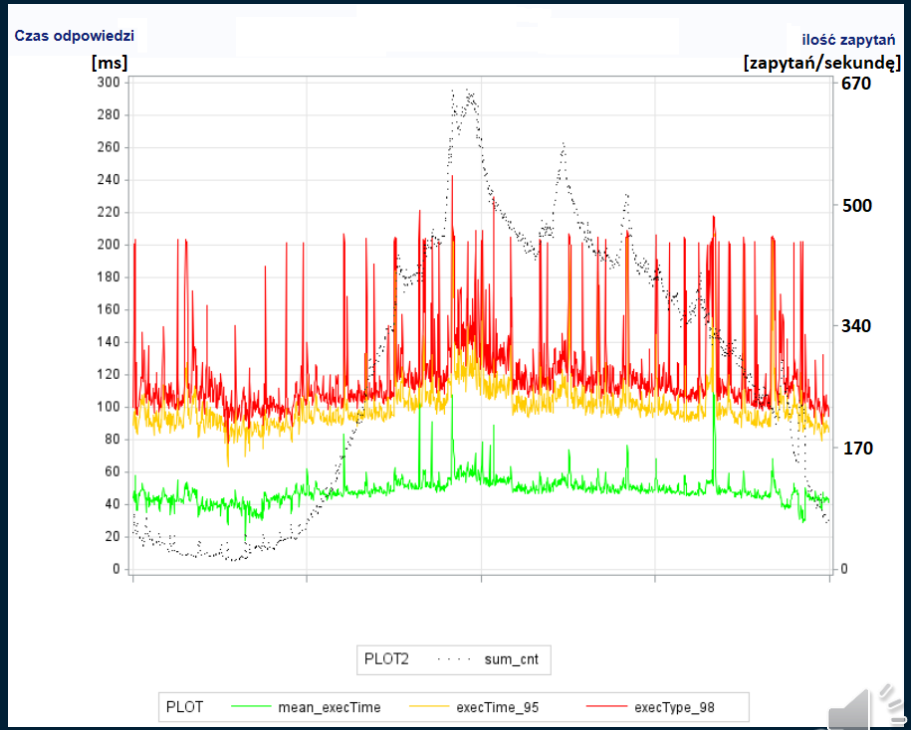
Copyright © SAS Institute Inc. All rights reserved.

3. SAS RTDM z dwoma aktywnymi nogami Oracle RAC

SAS RTDM z 1 aktywną nogą Oracle RAC



SAS RTDM z 2 aktywnymi nogami Oracle RAC



Copyright © SAS Institute Inc. All rights reserved.

PODSUMOWANIE

Analiza wydajnościowa SAS RTDM

Zwiększenie wydajności SAS RTDM z Oracle

Copyright © SAS Institute Inc. All rights reserved.

Dziękuję

pawel.olesiuk@sas.com

sas.com

Copyright © SAS Institute Inc. All rights reserved.