

4Foils RUG 2004

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LET'S MAKE SURE

Agenda

- DB2 Connect
- AIV Extender
- Slagit i taket?
- Övrigt smått o gott

LET'S MAKE SURE

DB2 Connect

- RUG 2003, alternativ till DB2 Connect?
- Nu nytt avtal på en 'rimligare' nivå som ger oss flexibilitet
- Konsolidering av Mainframe till Göteborg
 - Gateway maskiner med DB2 Connect fortfarande distribuerade
 - Stort antal applikation servers (UX/Win)
 - Externa kunder

DB2 Connect

- Konsolidering av Connect Gateways till zLinux
- Installerat för test på zVM G5-maskin
- Performance?
 - Enkla frågor, ingen skillnad
 - Testat via VB-script med mycket läsningar till klienten, skillnad!

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DB2 Connect Performance

	A	B	C	D	E	F
1	Response time in ms					
2		OLEDB	ODBC			
3	zLinux	779,971	652,253		Via DB2 Connect EE V7/V8	
4	W2K	385,434	415,304		Via DB2 Connect EE V7	
5	W2K	184,655	274,910		Från DB2 Connect PE V7	
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

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DB2 Connect

- Ny maskin för zLinux z990, IFL dedikerad Linux
- 64bit
 - No 64 bit support for DB2 Connect
 - Currently running in 32bit Red Hat
 - No test done yet

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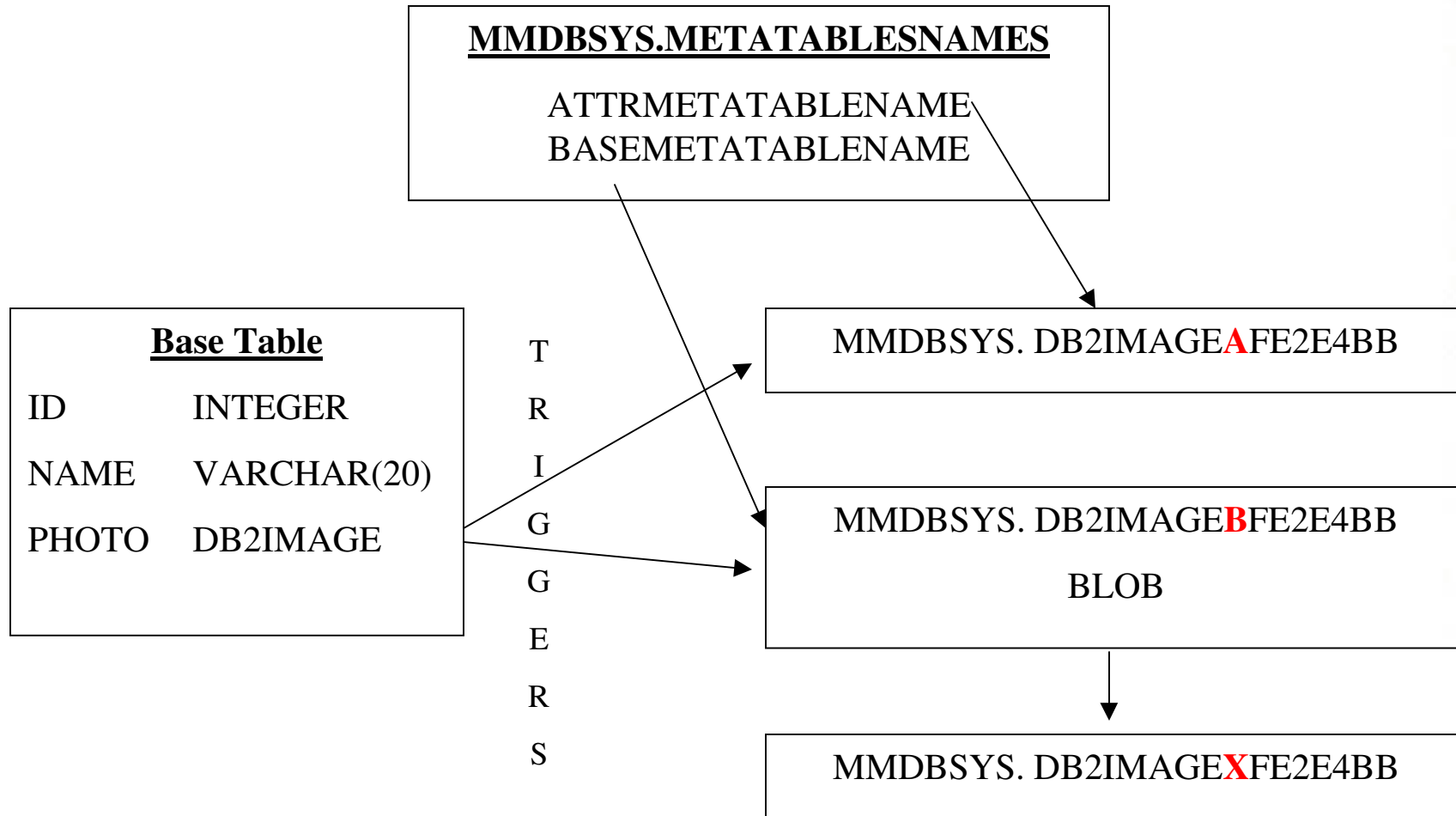
DB2 Connect

- Analysis Services användes för att ladda en kub från DB2
- Utvecklarna klagade på att det tog alldeles för lång tid
 - Total tid ca 5 timmar
 - Analys av query, Star Join, queryn tog ca 25 min i DB2
 - Analys av deras miljö, de körde DB2RTC V7
 - Installation av DB2 Connect EE V8
 - Total tid blev nu ca 1 timme
- Användare som kör tunga applikationer bör ha Connect men framförallt borde applikationerna ligga på en applikationsserver

AIV Extenders

- Audio Image Video
- Installerat på PC resp zOS för att bilda oss en uppfattning av vad det är....
- Består av UDTs, tex DB2IMAGE
- En massa UDFs, för att hantera dessa objekt
- Samt triggers för att koppla ihop source tabellen med AIV Extendersns Meta-data tabeller

AIV Extenders



AIV Extenders

- Går ej att välja SCHEMA för triggers, allt hamnar på MMDBSYS
- Vad händer om man måste göra drop/create? Trigger'n försvinner....
- Någon som har testat?
- Används AIV Extender, referenser?

Fel uppstod vid Reorg

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```
DSNU428I -Dxxx DSNUBAFI - DB2 IMAGE COPY SUCCESSFUL FOR TABLESPACE D9999.SXXXX
DSNU050I   DSNUGUTC - REORG TABLESPACE D9999.SXXXX PART 4 LOG NO SORTDATA
DSNU251I   DSNURULD - UNLOAD PHASE STATISTICS - NUMBER OF RECORDS UNLOADED=407
DSNU250I   DSNURULD - UNLOAD PHASE COMPLETE, ELAPSED TIME=00:05:59
DSNU398I -Dxxx DSNURWBF - UNEXPECTED PROCESSING ERROR, REASON=X'00E40318' ON T
DSNT500I   DSNUGBAC - RESOURCE UNAVAILABLE
              REASON 00C90099
              TYPE 00000210
              NAME D9999   .SXXXX   .00000004
```

Max partition size

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<p>Maximum size of a partition (table space or index)</p>	<p>For table spaces that are not defined with LARGE or a DSSIZE greater than 2G:</p> <ul style="list-style-type: none"> 4 gigabytes, for 1 to 16 partitions 2 gigabytes, for 17 to 32 partitions 1 gigabyte, for 33 to 64 partitions <p>For table spaces that are defined with LARGE:</p> <ul style="list-style-type: none"> 4 gigabytes, for 1 to 254 partitions <p>For table spaces that are defined with a DSSIZE greater than 2G:</p> <ul style="list-style-type: none"> 64 gigabytes, for 1 to 254 partitions

Max partition size

- Extended Format. Ändrat i SMS eftersom
 - Compress hjälpte bara på kort sikt
 - Och inte för indexet som snabbt närmade sig avgrunden
- DB2 dataset
- Ts resp Ix får nytt format vid nyskapande eller delete/define vid tex reorg
- Berör endast partitionerade tablespace med DSSIZE
- Erfarenheter?
 - Ändring av DSSIZE kräver DROP/CREATE
 - Går ej att gå tillbaka till standard dataset

Extenter

- Ligger fortfarande kvar test på om mer än 5 extents (ibland tom på > 1) I våra rutiner.
- ?
 - 20, 50, 100 övriga bud?

Skalbergaren

- We're still working the business case of making Multili a PRPQ.
- There is no plan to make it part of DB2.
- Christian has some improvements he needs to make before we do this.
- This would make it a priced tool they would have to buy and would include service.
- Någon som kör den idag?

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Visual Explain [Window Title]

Subsystem Tools Properties Windows Help

List Databases

Database Alias	Status	Database Name	Comment	User ID	Qualifier
D2A0	⚡	SEVOL0D2D2A000	Data Sharing Productio...		
D2A1	⚡	SEVOL0D2D2A000	Data Sharing Produktio...		
D2A2	⚡	SEVOL0D2D2A000	Data Sharing Productio...		
D2A3	⚡	SEVOL0D2D2A000	Data Sharing Productio...	G064224	G064224
D2A4	⚡	SEVOL0D2D2A000	Data Sharing Productio...		
D2B2	⚡	SEVOL0D2D2B201	VCE Test		
D2BM	⚡	SEVOL0D2D2BM01	VCE Production		
D2D2	⚡	SEVOL0D2D2D201	V2 Development ...		
D2F1	⚡	SEVOL0D2D2F101	VAC Production		
D2F2	⚡	SEVOL0D2D2F201	VAC Test		
D2H0	⚡	SEVOL0D2D2H000	Data Sharing Develop...		
D2H1	⚡	SEVOL0D2D2H000	Data Sharing Develop...		
D2H2	⚡	SEVOL0D2D2H000	Data Sharing Develop...		
D2NT	⚡	SEVOL0D2D2NT01	Gent Test		
D2NV	⚡	SEVOL0D2D2NV01	Gent Production		
D2O1	⚡	SEVOL0D2D2O101	Olofström production ...		
D2OT	⚡	SEVOL0D2D2OT01	Olofström Test		
D2P1	⚡	SEVOL0D2D2P101	V1 Production		
D2P2	⚡	SEVOL0D2D2P201	V2 Production	G064224	G064224
D2Q0	⚡	SEVOL0D2D2Q000	Data Sharing Test ...		
D2Q3	⚡	SEVOL0D2D2Q000	Data Sharing Test (mbr...		
D2Q4	⚡	SEVOL0D2D2Q000	Data Sharing Test (mbr...		

Connect...

Disconnect

Refresh

Update...

Catalog...

Uncatalog

Database Properties

Host name: v2301.volvo.se Protocol: tcpip

Node name: TCP0014 Port number: 462

Help

Visual Explain

- Existerande version fungerar ej ihop med V8 klient
- Hittade Visual Explain V8 beta
- Funkar även med V7
- Ett lyft jämfört med den tidigare versionen!

LET'S MAKE SURE

Visual Explain [Window Title Bar]

Subsystem Tools Properties Windows Help

Tune SQL D2A3 [Window Title Bar]

File Edit Action View

SQL Text | Access Plan | Execution Result | Report

QueryNo: SQLID:

Command history category:

Name	SQL Statement	Comment
Q1	select from q.s...	This query was saved at Wed Jan 14 08:51:08 GMT-
Q1	select id,name f...	This query was saved at Wed Jan 14 08:51:25 GMT-
Q2	select id from q...	This query was saved at Wed Jan 14 12:10:36 GMT-

Automatically save SQL in current command history category

Current degree:

Current refresh age:

Current maintained table types:

Input a SQL statement or select one from command history:

```
select * from q.staff
```

Messages for Execution and Explain

Visual Explain Subsystem Tools Properties Windows Help

Tune SQL - D2VT File Access Plan Selected Action View

SQL Text Access Plan Execution Result Report

DB2 Platform:Z/OS DB2 Version:v7 Explain Time:2004-01-14 12:48:40.461499

Columns

- column(SU76TAB.FTAG)
 - Coldist
 - Single column frequency distributio
 - column(SU76TAB.EXPLNR)
 - column(SU76TAB.PERIOD)**
- column(SU76TAB.KTO)
- column(SU76TAB.BE1.1)

Show attribute explanat... Views: cost estimation

Name	
Name	PERIOD
Cardinality	14
2nd High Key	198906
2nd Low Key	198801
Nullable	N
Default	N
Default Value	
Timestamp	1-01-01 00:00:00
Explain Time	2004-01-14 12:48:40.461499

Attribute explanation:
Name: Column name

```

graph BT
    Q1((1) QUERY) --> QB1((2) QB1)
    QB1 --> F3{{(3) FETCH}}
    F3 --> X4{{(4) XSCAN}}
    F3 --> S6[ (6) SU76TAB  
9310 ]
    X4 --> XS5{{(5) XSU76TAB_01  
9310}}
    
```

Save As... Print... Suggesti... Help Query Block 1

Visual Explain

Subsystem Tools Properties Windows Help

Tune SQL D2A3

File View

SQL Text Access Plan Execution Result Report

All the rows are displayed. The number of rows is 36.

ID	NAME	DEPT	JOB	YEARS	SALARY	COMM
10	SANDERS	20	MGR	7	18357.50	
20	PERNAL	20	SALES	8	18171.25	612.45
30	MARENGHI	38	MGR	5	17506.75	
40	O'BRIEN	38	SALES	6	18006.00	846.55
50	HANES	15	MGR	10	20659.80	
60	QUIGLEY	38	SALES		16808.30	650.25
70	ROTHMAN	15	SALES	7	16502.83	1152.00
80	JAMES	20	CLERK		13504.60	128.20
90	KOONITZ	42	SALES	6	18001.75	1386.70
100	PLOTZ	42	MGR	7	18352.80	
110	NGAN	15	CLERK	5	12508.20	206.60
120	NAUGHTON	38	CLERK		12954.75	180.00
130	YAMAGUCHI	42	CLERK	6	10505.90	75.60
140	FRAYE	51	MGR	6	21150.00	
150	WILLIAMS	51	SALES	6	19456.50	637.65
160	MOLINARE	10	MGR	7	22959.20	
170	KERMISCH	15	CLERK	4	12258.50	110.10
180	ABRAHAMS	38	CLERK	3	12009.75	236.50
190	SNEIDER	20	CLERK	8	14252.75	126.50
200	SCOUTTEN	42	CLERK		11508.60	84.20
210	LU	10	MGR	10	20010.00	
220	SMITH	51	SALES	7	17654.50	992.80
230	LUNDQUIST	51	CLERK	3	13369.80	189.65
240	DANIELS	10	MGR	5	19260.25	
250	WHEELER	51	CLERK	6	14460.00	513.30
260	JONES	10	MGR	12	21234.00	

Access Path Report

[Query Summary](#)

[Table Summary](#)

Access Path Description

◆ Query Block 1

- ◊ [STAFF \(table\) \(4\)](#)
- ◊ [TBSCAN \(3\)](#)
- ◊ [QB1 \(2\)](#)
- ◊ [QUERY \(1\)](#)

STAFF (table) (4)

Attribute	Value	Explanation
Name	STAFF	Table name
Creator	Q	Table creator authorization ID
Correlation Name		Table correlation name within the query
Rows	10000(default)	Number of rows in the table
Pages	501(default)	Number of pages used by the table
Compressed Row Percentage		Percentage of compressed rows
Timestamp	1-01-01 00:00:00.0	Timestamp when the last invocation of RUNSTATS
Explain Time	2004-01-14 12:31:28.98	Timestamp when explaining the query

Columns

column(STAFF.ID)

Attribute	Value	Explanation
Name	ID	Column name
Cardinality	25(default)	Number of distinct values in the column
2nd High Key		2nd highest value of all distinct values in the column