

DB2 for Linux, Unix, and Windows

Survival Guide



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Agenda

- Jak předejít problémům?
- Jak řešit problém?
- Co nikdy nedělat?



Jak předejít problémům?

- Backup & recovery
- Nastavení storage
- Autonomní operace

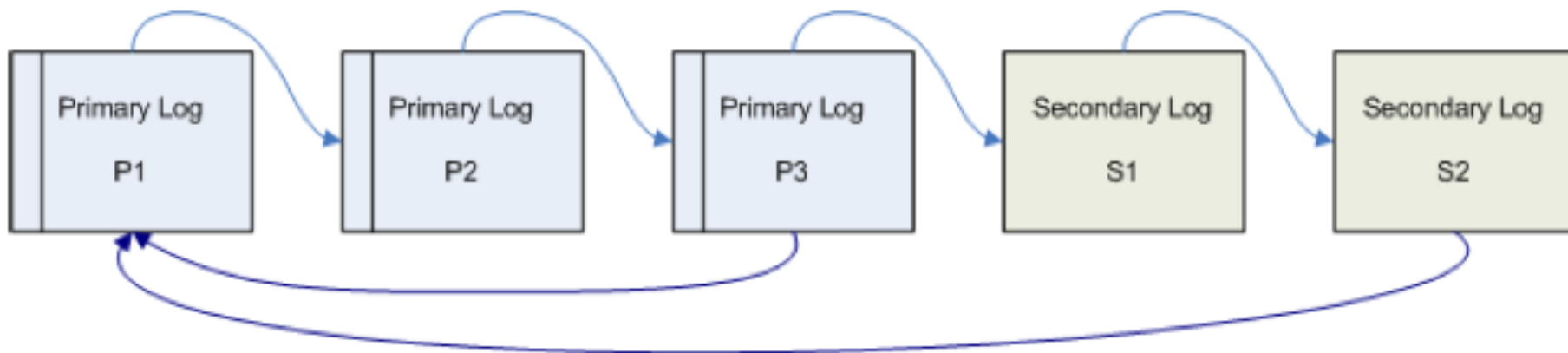


Source : *Flowingdata.com*

Backup & recovery

▪ Kruhové logování

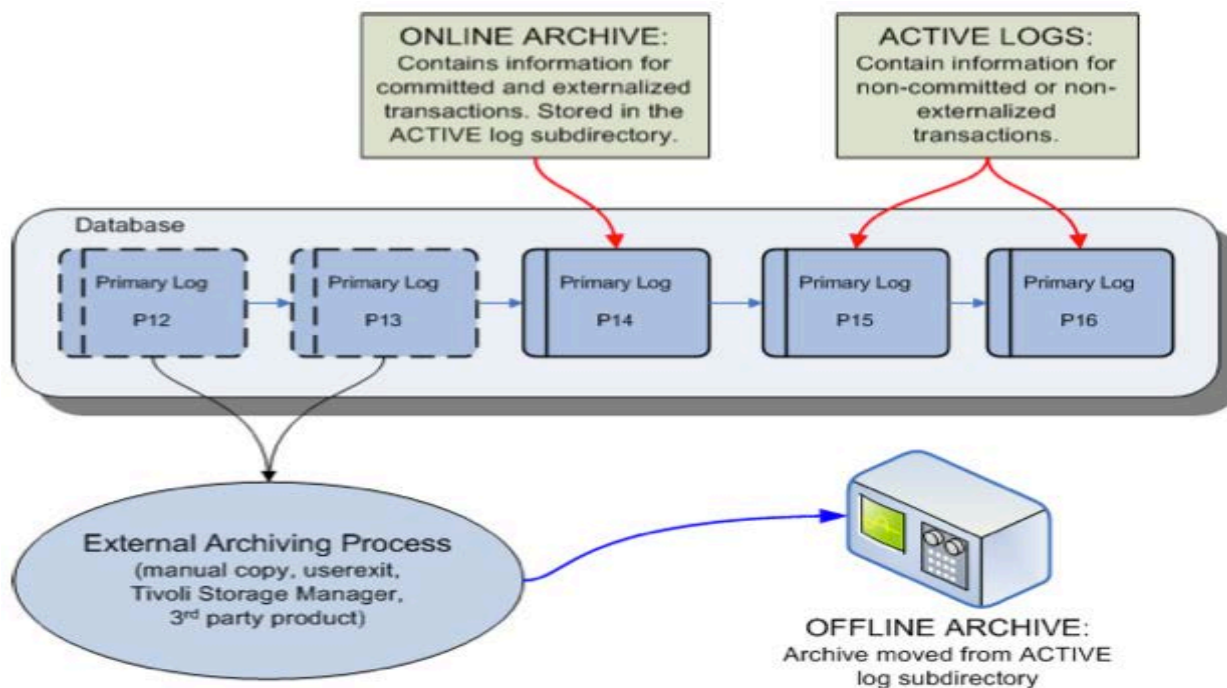
- Parametry LOGARCHMETH1 a LOGARCHMETH2 nastaveny na OFF



Backup & recovery

■ Archivní logování

- Parametry LOGARCHMETH1 nebo LOGARTMETH2 nastaveny na ON



Update db cfg using logarchmeth1 DISK:/u/dbuser/archived_logs

Backup & recovery

Záloha databáze

- Online – pouze full db backup, nutno zapnout archivní logování
- Offline – inkrementální, delta, full backup, archivní i kruhové log.

BACKUP DATABASE <název_databáze> [TO <cesta>]

db2 BACKUP DB sample TO C:\BACKUPS ONLINE COMPRESS INCLUDE LOGS

| Alias | Instance | | | Rok | Den | Minuta | Sekvence |
|----------|----------|----------|-----------------|------|-------|--------|----------|
| SAMPLE.0 | DB2 | NODE0000 | CATN0000 | 2010 | 11 | 28 | 105511 |
| | Typ | Uzel | Katalogový uzel | | Měsíc | Hodina | Vteřina |

Backup & recovery

Obnovení databáze

- Obnovení po havárii nebo restartu
- Obnovení verze nebo obrazu
- Obnovení roll-forward

RESTORE DATABASE <název_databáze> [from <cesta>] [taken at <čas.razítko>]

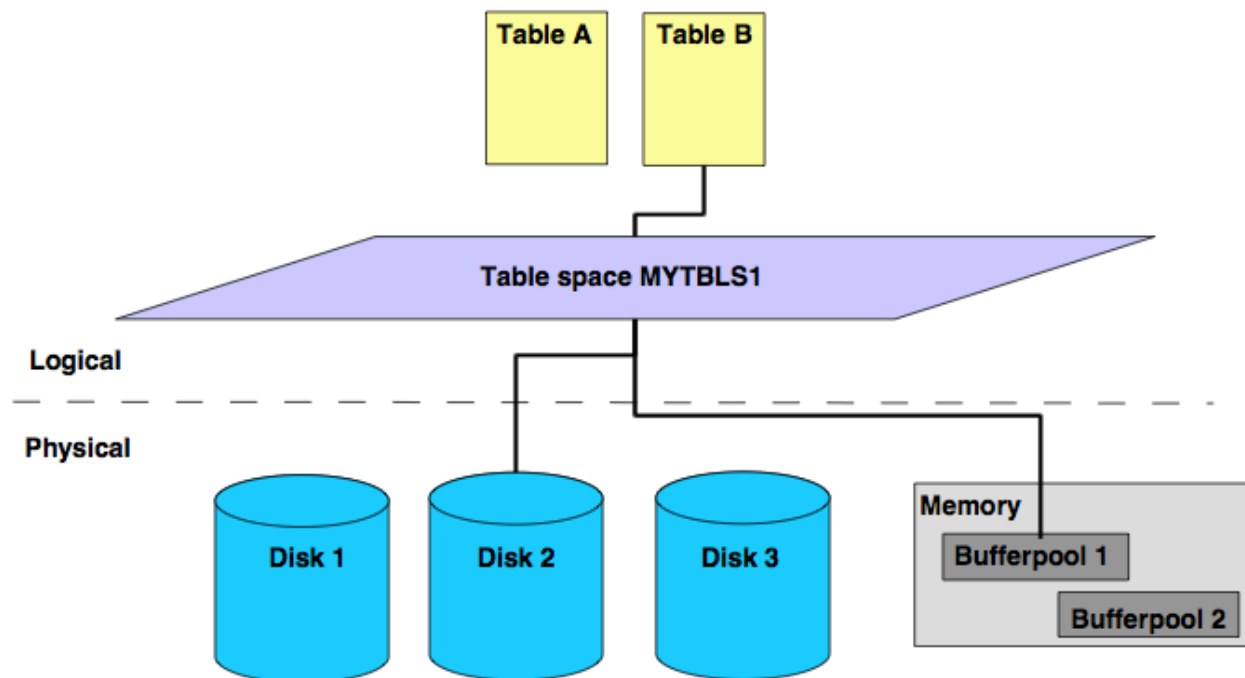
RESTORE DB sample FROM <cesta> TAKEN AT 20101128105511

Nastavení storage

Separace tablespace

- Separátní tablespace pro LOBy
- Separátní tablespace pro indexy

+ separátní bufferpooly



Nastavení storage

```
db2 create bufferpool testbufpool pagesize 32k
```

```
db2 "create tablespace tblspc pagesize 32k managed by automatic storage  
using ('/data/db2inst1/NODE0000/dbname/T0000002/')" bufferpool testbufpool
```

Table space management

- System Managed Storage
- Database Managed Storage
- Managed by Automatic Storage

Autonomní operace

| | |
|-----------------------------|-----------------------|
| Automatic database backup | (AUTO_DB_BACKUP) = ON |
| Automatic table maintenance | (AUTO_TBL_MAINT) = ON |
| Automatic runstats | (AUTO_RUNSTATS)= ON |
| Automatic reorganization | (AUTO_REORG) = ON |

```
UPDATE DB CONFIG USING AUTO_MAINT ON AUTO_TBL_MAINT ON AUTO_RUNSTATS ON  
AUTO_REORG ON
```

STMM = Self tuning memory manager

```
db2 update dbm cfg using instance_memory automatic
```

Jak řešit problém?

1. Nastal problém



2. Identifikace problému



3. Řešení problému



**An Error Has Occurred
In The Application**

Class: SQLData
Method: GetDataView
SQL Stmt: exec dbo.gb_getstutasklist 1028267, 1010913, '8/26/2009', '10/30
/2009', 1000411

Jak řešit problém?



Vysoká důležitost



PIC
IBM forum
APARy
IDUG



**Nižší důležitost, výstrahy,
varování, informace**

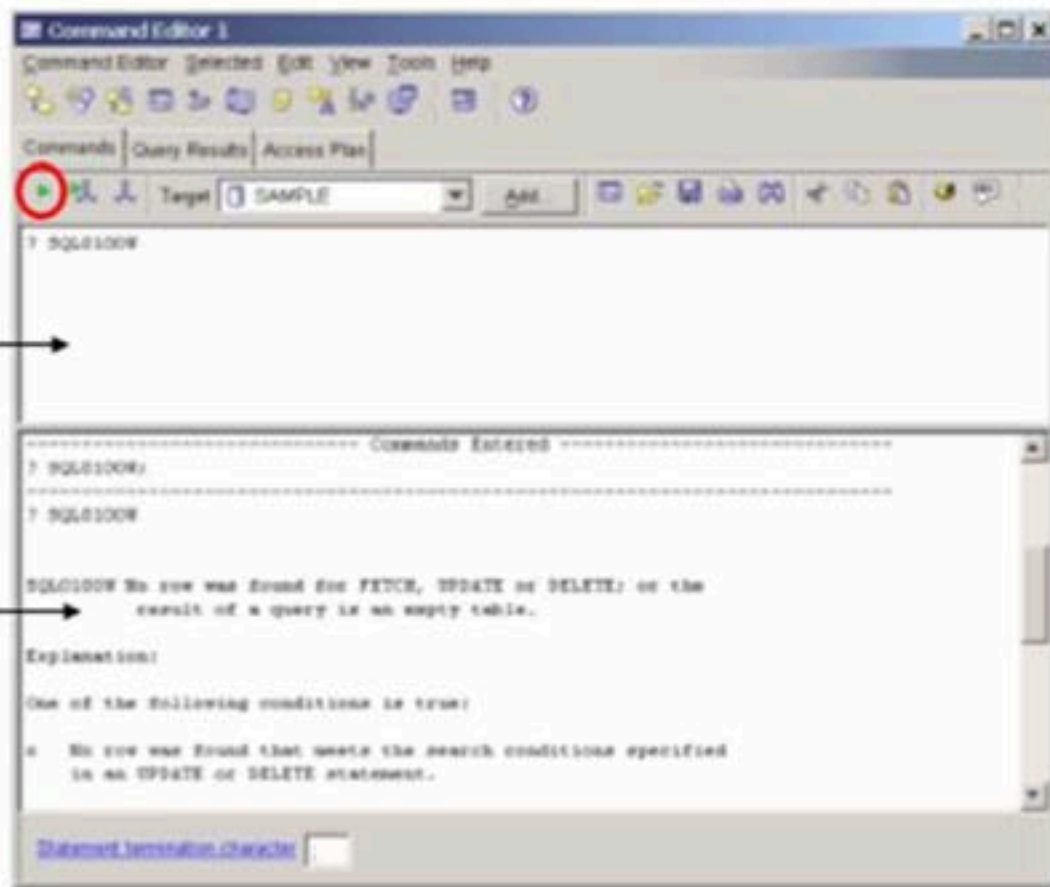


Identifikace problému

db2 ? command

Ve vstupním prostoru je otazník, za kterým následuje kód chyby.

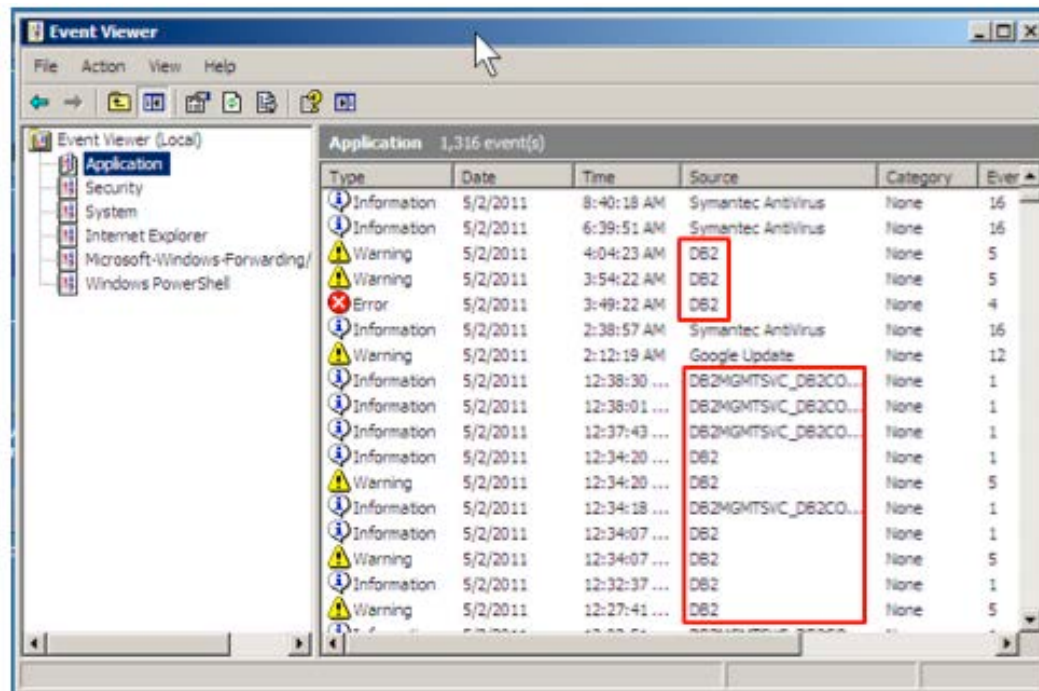
Více informací o chybě se zobrazí ve výstupní oblasti.



Identifikace problému

Administrační notifikační log

- Poskytování diagnostických informací o chybách v bodě selhání
- V systémech Linux/UNIX je to textový soubor pojmenovaný instance.nfy
- Ve Windows se všechny adm. notifikace zobrazují v Event Logu



Identifikace problému

db2diag.log

- Detailnější informace než notifikační log
- Používáno supportem nebo zkušenými DBA



Support může vyžadovat jeho zaslání

Timestamp when the problem occurred

Level: Be concerned when you see "Severe" or "Error" here.

Application name

Error message information. Use any of these for searching in "Google"

Windows (INST)

```

db2diag.log - Notepad
File Edit Format View Help
2008-09-03-08.17.46.078000-240 I382107H521
PID : 1552 TID : 6632
INSTANCE: DB2 NODE : 000
APPID : *LOCAL.DB2.080903121750
EDUID : 6632
FUNCTION: DB2 UDB, Automatic Table Maintenance,
AtmTable::local_stats_out_of_date, probe:100
MESSAGE : ECF=0x90000002=-1879048190=ECF_FAILED
Failed
DATA #1 : <preformatted>
AutoStats: For NICKNAME ARFCHONG.FEDTEST: Bad read of remote table stats_time:
Valid stats time flag = 0
  
```

Annotations in the image:

- A red circle around the timestamp: 2008-09-03-08.17.46.078000-240
- A red circle around the level: LEVEL: warning
- A red circle around the process name: PROC : db2fmp.exe
- A red circle around the error message: MESSAGE : ECF=0x90000002=-1879048190=ECF_FAILED Failed

Řešení problémů

IBM Support

1. Přihlášení do Passport Advantage
 - Zadání PMR/Service requestu

2. Volat na helpdesk

IBM Passport Advantage

Passport Advantage Online



Program overview

Passport Advantage Online

For customers

For Business Partners

Passport Advantage Online offers customers a secure Web experience to manage their Passport Advantage accounts online.

[→ Customer sign in](#)

The screenshot displays the IBM Passport Advantage 'Service requests (PMRs)' page. The main content area is titled 'Service requests (PMRs) Support for my selected products'. It features a 'Choose your products' section with a search box and a list of selected products: Lotus Notes Traveler 8.5.2 and Software support (general). Below this is a 'Send request to' form with a dropdown for 'United States', a 'Select type and submit' dropdown for 'Hardware', and a 'Select product and submit' dropdown for 'All hardware products'. A 'Submit' button is visible. The right sidebar contains a 'Search support' box, 'My bookmarks', and 'Support resources'. The bottom of the page has a footer with links for 'About IBM', 'Privacy', 'Contact', 'Term of use', 'Accessibility', 'IBM Feeds', and 'Jobs'.

Řešení problémů

Public Information Center = PIC

- pro verze 9.5, 9.7, 10.1

The screenshot shows a web browser window displaying the IBM Public Information Center (PIC) website. The search results for 'backup database' are shown on the left, and the detailed article for the 'BACKUP DATABASE command' is shown on the right.

Search Results:

- BACKUP DATABASE command – IBM DB2 9.7 for Linux, UNIX, and Windows**
Creates a backup copy of a database or a table space.
- BACKUP DATABASE using ADMIN_CMD – IBM DB2 9.7 for Linux, UNIX, and Windows**
Creates a backup copy of a database or a table space.
- ADM1827E**
There is no space left on raw device used for logging. User must make an offline backup of the database.
- backup_pending – Backup pending indicator configuration parameter – IBM DB2 9.7 for Linux, UNIX, and Windows**
This parameter indicates whether you need to do a full backup of the database before accessing it.
- db.db_backup_req – Database Backup Required health indicator – IBM DB2 9.7 for Linux, UNIX, and Windows**
This health indicator tracks the need for a backup on the database. Backups should be taken regularly as part of a recovery strategy to protect your data against the possibility of loss in the event of a failure.
- Performing a snapshot backup – IBM DB2 9.7 for Linux, UNIX, and Windows**
A snapshot backup operation uses the fast copying technology of a storage device to perform the data copying portion of the backup.
- Backup examples – IBM DB2 9.7 for Linux, UNIX, and Windows**
Example 1 In the following example database SAMPLE is backed up to a TSM server using 2 concurrent TSM client sessions. The backup utility will compute the optimal number of buffers. The optimal size will be computed.
- Using a split mirror as a backup image – IBM DB2 9.7 for Linux, UNIX, and Windows**
Use the following procedure to create a split mirror of a primary database.

Database administration > Interfaces (Tools, Commands, APIs) > Commands > CLP commands

DB2 Version 9.7 for Linux, UNIX, and Windows

BACKUP DATABASE command

Creates a backup copy of a database or a table space.

For information on the backup operations supported by DB2® database systems between different operating systems and hardware platforms, see "Backup and restore operations between different operating systems and hardware platforms".

Scope

In a partitioned database environment, if no database partitions are specified, this command affects only the database partition on which it is executed.

If the option to perform a partitioned backup is specified, the command can be called only on the catalog node. If the option specifies that all database partition servers are to be backed up, it affects all database partition servers that are listed in the `db2nodes.cfg` file. Otherwise, it affects the database partition servers that are specified on the command.

Authorization

One of the following:

- SYSADM
- SYSCTRL
- SYSAINT

Required connection

Database. This command automatically establishes an exclusive connection to the specified database.

Note: If a connection to the specified database already exists, that connection will be terminated and a new connection established specifically for the backup operation. The connection is terminated at the completion of the backup operation.

Command syntax

```
>>-BACKUP-+-DATABASE-+-database-alias----->>
      *-DB-----*
```

Řešení problémů



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[Login and view topic](#) [Back to All Topics](#)

DB2 - L
 Topic Threads
 Page 1 of 57

| Threads | Replies | Last Post Time |
|--|---------|-----------------------|
| Here is the way to set db-l nomail | 2 | Nov 02, 2011 10:50 AM |
| When does AUTOBIND Occur? | 10 | Nov 13, 2012 04:25 PM |
| BLOG: Java Database Exception Handling | 0 | Nov 13, 2012 03:10 PM |
| DB2 Gold Consultant and IBM Champion - what is the real way to get this honor? | 4 | Nov 13, 2012 02:18 PM |
| [AD] Cogito Webcast - Workload Centric Index Optimization with EZ-DB2 | 0 | Nov 13, 2012 12:48 PM |
| Data sharing with DB2 V10 and DB2 V9. | 14 | Nov 13, 2012 12:10 PM |
| IDUG DB2 Tech Conference Presentation Archive for Berlin 2012 | 6 | Nov 13, 2012 08:32 AM |
| OT: IBM 'on demand' & DB2 (?) | 3 | Nov 12, 2012 04:12 PM |
| Data Studio and Max OS X | 4 | Nov 12, 2012 04:10 PM |
| [AD] IBM DB2 for LUW Performance Tuning Class - Starts December 10th in Maryland | 0 | Nov 12, 2012 01:51 PM |
| Come join me at International DB2 Users Group shares DB2 10 upgrade experiences from users- 13th Nov | 0 | Nov 12, 2012 10:10 AM |
| D2 Express-C and Max OS X | 3 | Nov 12, 2012 09:16 AM |
| International DB2 Users Group shares DB2 10 upgrade experiences from users Webcast – November 13, 20 | 0 | Nov 12, 2012 09:06 AM |

Řešení problémů

APAR

= Authorized Program Analysis Report

= problém(bug) nahlášený a uznáný IBM supportem

- většinou vyřešen fix packem

IC83899: INSERTING BLOBS OF SIZE 32756 BYTES DOES NOT COMPLETE WHEN EXECUTED IN A TRANSACTION.

A fix is available

[DB2 Version 9.7 Fix Pack 7 for Linux, UNIX, and Windows](#)

Subscribe

You can track all active APARs for this component.

[Notify me when an APAR for this component changes.](#)

APAR status

Closed as program error.

Error description

inserting blobs of size 32756 bytes causes an application hang while server is waiting to read more information from the socket.

Problem reproduces on both Informix and DB2 servers

The problem appears to be with the EXTDTA OBJDSS and the corresponding NEXT DSS LOGICAL RECORD

Temporary fix

Downloads - My Comments

Version {

APAR Information

| | |
|-------------------------|-------------|
| APAR number | IC83899 |
| Reported component name | DB2 CONNECT |
| Reported component ID | DB2CONNECT |
| Reported release | 970 |
| Status | CLOSED PER |
| PE | NoPE |
| HIPER | NoHIPER |
| Special Attention | NoSpecatt |
| Submitted date | 2012-06-01 |
| Closed date | 2012-10-24 |
| Last modified date | 2012-10-24 |

APARs shipped for column value of 1 R was opened.

| | |
|--------------------|--------------------|
| DB2 9.5 | HIPER |
| DB2 9.7 Fix Pack 7 | Special Attention |
| DB2 Product Docum | Submitted date |
| | Closed date |
| 012..... | Last modified date |

APAR is sysrouted FROM one or more of the following:
 APAR is sysrouted TO one or more of the following:

Fix information

| | |
|----------------------|-------------|
| Fixed component name | DB2 CONNECT |
| Fixed component ID | DB2CONNECT |

Applicable component levels

R970 PSN UP

Co nikdy nedělat?

Nic nemazat

- Rozhodně nemazat logy nebo zálohy, pokud si nejsme 100% jistí, že nebude ohrožená případná obnova databáze
- Nemazat žádné systémové soubory/objekty databáze

Zadat v PMR vyšší severitu než opravdu je

- Support se bude primárně starat o service requests s nejvyšší severitou. Uvádění nepřesné (popřípadě záměrně vyšší) severity by mohlo vést k negativnímu přístupu supportu v případě budoucích problémů

Nepodceňovat význam zálohy a logování

- Archivní logování se může ukázat nadměrně užitečným v případě lidské chyby, stejně tak provádění pravidelné zálohy nám ušetří případnou práci s rollforwardem transakcí v případě havárie

Děkuji za pozornost



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