Upgrading DB2 from 8.2 to 9.1

DB2 offers a relatively easy upgrade from 8.2 to 9.1 database versions. This article describes the steps necessary to setup a new database server with DB2 9.1 fixpack 10 and migrate databases to this server from another.

Let's say we're migrating databases from oldserver to newserver. On oldserver, we're running DB2 8.2. A handy command to check which exact version you're running is: db2level. Run this as the owner of the database instance. The default owner is db2inst1. On oldserver, check the runlevel:

```
Su – db2inst1
# db2level

DB21085I  Instance "db2inst1" uses "32" bits and DB2 code release "SQL08020"
with level identifier "03010106".
Informational tokens are "DB2 v8.1.0.64", "s040812", "MI00086", and FixPak "7".
Product is installed at "/opt/IBM/db2/V8.1".
```

On the new server, we wish to run DB2 're running 9.1 fixpack 10. This is the highest version of DB2 supported by our applications.

```
# db2level

DB21085I  Instance "db2inst1" uses "64" bits and DB2 code release "SQL09019"
with level identifier "020A0107".
Informational tokens are "DB2 v9.1.0.10", "s110109", "MI00382", and Fix Pack
"10".
Product is installed at "/opt/ibm/db2/V9.1".
```

If no DB2 database existed before, create users in /etc/passwd for:
```
db2inst1:x:509:102::/home/db2inst1:/bin/ksh
db2fenc1:x:510:103::/home/db2fenc1:/bin/ksh
db2read:x:511:104::/home/db2read:/bin/bash
```

If DB2 exists on the machine….and you want a instance with a different version, you need a different userid than "db2inst1". This name can be anything…but ideally something easy to remember and identify what instance is being referenced. I'd prefer db2inst2 or db2inst91 rather than inst951

If you're _replacing_ an old instance with garbage left around, you'll need to cleanup files in
```
/home/db2inst1/sqllib/
/home/db2inst1/db2inst1
/home/db2inst1/db2crash*
/home/db2inst1/db2status*
```

Install the binaries on the machine. In our case, this will bring the machine up to 9.1.0.3
        Mkdir /tmp/db2inst
        Cd /tmp/db2inst
        Tar –xzf DB2_Express_Edition_V91_Linux_x86-64.tar
        ./db2_install

Create the database instance:
        /opt/ibm/db2/V9.1/instance/db2icrt -u db2fenc1 –p 50000 db2inst1

One of the challenges with DB2 is that you need to install fixpacks after installing the base version of DB2.   DB2 is helpful in not applying this fixpack to instances if you do not tell it to do so.   This allows you to run a 9.1 FP 3 on the same server as a DB2 FP10.   However, if you're running only one instance, it adds steps:

As the new owner, db2inst1, Start the database and do some rudimentary tests to ensure the base install is successful:
        ~/sqllib/adm/db2start

A simple test:
        Db2 restore database DB1
        Db2 connect to DB1
        Db2 list tables

Install the fixpacks:

        Su – db2inst1   Become the instance owner of the database
        db2stop   Stops the database

        su – root   Become root
        Mkdir /tmp/db291fp10/
        Cd /tmp/db291fp10/
        Tar –xzf v9fp10_linuxx64_universal_fixpack.tar.gz
        Cd universal/disk1/
        ./installfixpack

Update each instance you wish upgraded to the new fixpack level.   Also the DAS (Database Administration server) needs to be updated once:

        /opt/ibm/db2/V9.1/instance/db2iupdt –u db2fenc1 db2inst1   <- repeat this if multiple
                                                                       instances
        /opt/ibm/db2/V9.1/instance/dasupdt   <- Updates DAS

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Once here, database backup and restores are simple.   However, due to different transaction logs, you need to do a full backup and not online backups.   Repeat this for every database needed. We had 50 databases being migrated so I found it easier to backup all first, then restore all in a script.

```
<oldserver>#    db2 force applications all              <- get rid of existing apps using
<oldserver>#    backup database DB1
<oldserver>:#   scp DB1* newserver:/tmp/

<newserver>#   cd /tmp/
<newserver>#   db2 restore database  DB1
```

During this restore, Db2 will upgrade the database format from 8.2 to 9.1 seamlessly.

Test.   As a DBA, a simple test is to connect into the database on port 50000 usingToad:
     http://toadfordb2.com/