Main Document

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Basics

Document Type **Reference**
Subject **DB2 databases for Watson**
Category
Associated Event
Associated Subteam(s)

Reviewers (optional)

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Reviewers
<no reviewers>

There are the following databases in the Solution Lab at Rochester. Unless specified, all the databases are V10.5. All the access from outside of the cluster such as your PC needs to be SSL.

Database	System	Instance	non-SSL/SSL ports	Comment
WATSON	dbp03	db2inst2	50002/51002	Main development database -- temporary stopped HA
WATSON	dbp06	db2inst2	50002/51002	Main development database -- temporary copied due to active rollback connections
WATSONTD	HA, dbp03	db2inst2	50002/51002	Training Data
WTSNAPI	HA, dbp03	db2inst2	50002/51002	API database
SPSSCDS	dbp03	db2inst2	50002/51002	database for C & DS running on wrk33
INGEST	dbp04	db2inst1	50001/51001	Ingestion database
WATSONWK	dbp04	db2inst1	50001/51001	Sandbox database
CTM	dbp04	db2inst1	50001/51001	CTM projects, Jeff Nowicki
CTM	dbp01	db2inst1	50001/51001	CTM projects -- temporary relocated due to active rollback connections
WATSON	dbp01	db2inst1	50001/51001	Performance test: : NO AUTOMATIC MAINTENANCE
WATSON	tst04a	db2inst1	50001/51001	Main test database
WATSON	tst04b	db2inst1	50001/51001	Old test database (V9.7)

WATSONDV	tst04b	db2inst1	50001/51001	MDA test database
WATSON	tst03b	db2inst1	50001/51001	Oncology stress test for Darin's team: NO AUTOMATIC MAINTENANCE
MEDDB	wrkp159	db2inst1	50001/51001	WPA development
KGMASTER	wrkp159	db2inst3	50003/51003	Anshu's team
KGMSTR2-5	wrkp159	db2inst3	50003/51003	Mike Maurer / Tushar Fadale / Jacques Labrie
RR	wrkp159	db2inst3	50003/51003	Mike Maurer / Tushar Fadale
JC	wrkp159	db2inst3	50003/51003	Mike Maurer / Tushar Fadale
JC2-5	wrkp159	db2inst3	50003/51003	Mike Maurer / Tushar Fadale / Jacques Labrie
KGMSTRC	wrkp159	db2inst3	50003/51003	Mike Mayne
JCC	wrkp159	db2inst3	50003/51003	Mike Mayne
ANNSTORE	wrkp159	db2inst2	50002/51002	Annotation Store / Joel Dubbles, Dale Weber
KGMASTER	kgm01	db2inst3	50003/51003	Tushar Fadale ---- Intel DB2 with BLU
WATSON	lbsp001	db2inst1	50001/51001	Lab Services database
PATHLITE	lbsp001	db2inst1	50001/51001	
EY	lbsp001	db2inst1	50001/51001	
WATSONPA	lbsp001	db2inst1	50001/51001	CTM, Jeff N
KG_MSTR	lbsp001	db2inst1	50001/51001	
WDAACME	lbsp001	db2inst1	50001/51001	Joe Celi
WDAIGA	lbsp001	db2inst1	50001/51001	Joe Celi
WDAMDS	lbsp001	db2inst1	50001/51001	Joe Celi
PL_PWH	lbsp001	db2inst1	50001/51001	Joe Celi
KG_PWH	lbsp001	db2inst1	50001/51001	Joe Celi
WDALS01	lbsp001	db2inst1	50001/51001	Tushar Fadale
EMRA01	lbsp001	db2inst1	50001/51001	R Trotter, Bill Kerr

WDALSPL1	lbsp001	db2inst1	50001/51001	Tushar Fadale
WDALSJC1	lbsp001	db2inst1	50001/51001	Tushar Fadale
WDALSKG1	lbsp001	db2inst1	50001/51001	Tushar Fadale
LN_KG	lbsp001	db2inst1	50001/51001	Lexus Nexus project
LN_UI	lbsp001	db2inst1	50001/51001	Lexus Nexus project
TR_KG	lbsp001	db2inst1	50001/51001	Bill Griffith, Hassan Nadim
TR_UT	lbsp001	db2inst1	50001/51001	Bill Griffith, Hassan Nadim
ZOO_KG	lbsp001	db2inst1	50001/51001	Anna Chaney
ZOO_UI	lbsp001	db2inst1	50001/51001	Anna Chaney
WWMDEV01-04	lbs07	db2inst1	50001/51001	
?	edu01	db2inst1	50001/51001	edu01:/watson/installers/db2/ssl/watson_crts, password is watson
KGMASTER	wrkp300	db2inst1	50001/51001	Consolidated database of KGMASTER and JC
KGMASTER	wrkp349	db2inst1	50001/51001	IEEE: Dorian Miller, Terrence Nixa
JC	wrkp349	db2inst1	50001/51001	IEEE: Dorian Miller, Terrence Nixa
KGMASTER	wrkp228	db2inst1	50001/51001	IEEE: Rajesh P Ramachandran
CTM	wrkp366	db2inst1	50001/51001	CTM: Chris Schultz
BOSON	wrkp382	db2inst4	50004/51004	Boson: Nat Mills The home directory is /home/db2inst4. The tablespace is on local disk in /store/db2data
WATSON	vmey07	db2inst2	50002/51002	Earnest & Young, Dharmesh K Makwana
WATSON	sdbp01	db2inst2	51002	Secure PHI development -- Medtronics
WATSON	frtp01	db2inst2	51002	PHI -- Froedtart
WATSON	phip01	db2inst2	51002	PHI - Gaborone, Pankaj Sabharwal

IGS4UAC	dbp10	db2inst2	50002/51002	Under Armour, Chandramouli Maduri/Watson/IBM

End User Operations:

For those who want to install GUI, refer this document to install Data Studio and/or Control Center.
SSL connection will be required for public network access. See this document for SSL configuration.

To access databases:

You need to run db2_schema command as below to gain access.

Log in to the system such as watsondbp03 and run the following command.

If you know which schema you want to access:

$ db2_schema --dbName=*your-db* --schema=*your-schema* --grant-table=select,*your-id*

Otherwise:

$ db2_schema --dbName=*your-db* --grant-db=connect,*your-id*

There are the following ways depending on what you want to do with your database.

- Command line processor on systems with DB2 installed. (watsondev17 watsondevp05, and watsondbp02)
  Log in to the system and run the following command.

  $ source /localHome/db2inst1/sqllib/db2profile
  $ db2 connect to *your-db*
  $ db2 "select ....."
  $ db2 terminate

- GUI on your PC
  Install Data Studio or Control Center. See this document for detail.
  Data Studio is eclipse based GUI. Control Center is deprecated in 9.7 or later. For those who are new to DB2, I recommend to use Data Studio.

- GUI on dev systems
  Please install your own copy of Data Studio on watsondev17. Data Studio is not supported on Power system.

To create schema:

Log in to the db2 system where your desired database resides and run the following command.

db2_schema --db=*your-db* --create=*your-new-schema*

To list access to a schema / tables

Log in to db2 system where your desired database resides and run the following command.

db2_schema --db=*your-db* --schema=*your-schema* --list

db2_schema --db=*your-db* --schema=*your-schema* --listTable

To obtain access to a schema / tables

Log in to db2 system where your desired database resides and run the following command.

db2_schema --db=*your-db* --schema=*your-schema* --grant-schema=*{createin|alterin|dropin|all},user-id*

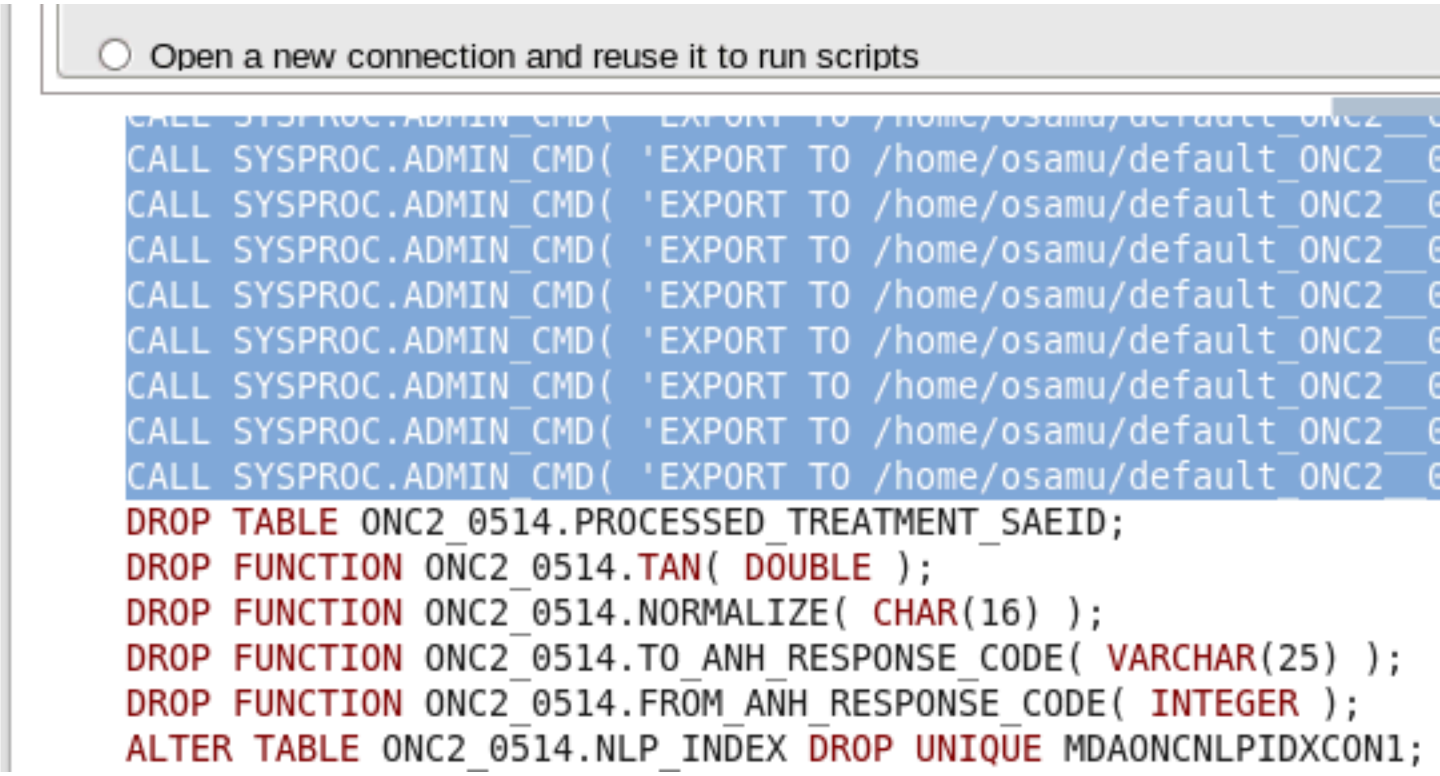
db2_schema --db=*your-db* --schema=*your-schema* --grant-table=*{select|control|all},user-id*

To drop tables and schemas

You can drop schemas via GUI or deleteSchema.pl. You'll need proper permission in either way,

DataStudio:

Connect to the database, list schemas, right click on the target schema, then select drop. When you execute the plan, click Edit to edit the SQL statements. Delete all the statement calling SYSPROC.ADMIN_CMD like below.



Open a new connection and reuse it to run scripts

```
CALL SYSPROC.ADMIN_CMD( 'EXPORT TO /home/osamu/default_ONC2__
CALL SYSPROC.ADMIN_CMD( 'EXPORT TO /home/osamu/default_ONC2__
CALL SYSPROC.ADMIN_CMD( 'EXPORT TO /home/osamu/default_ONC2__
CALL SYSPROC.ADMIN_CMD( 'EXPORT TO /home/osamu/default_ONC2__
CALL SYSPROC.ADMIN_CMD( 'EXPORT TO /home/osamu/default_ONC2__
CALL SYSPROC.ADMIN_CMD( 'EXPORT TO /home/osamu/default_ONC2__
CALL SYSPROC.ADMIN_CMD( 'EXPORT TO /home/osamu/default_ONC2__
CALL SYSPROC.ADMIN_CMD( 'EXPORT TO /home/osamu/default_ONC2__
CALL SYSPROC.ADMIN_CMD( 'EXPORT TO /home/osamu/default_ONC2__
DROP TABLE ONC2_0514.PROCESSED_TREATMENT_SAEID;
DROP FUNCTION ONC2_0514.TAN( DOUBLE );
DROP FUNCTION ONC2_0514.NORMALIZE( CHAR(16) );
DROP FUNCTION ONC2_0514.TO_ANH_RESPONSE_CODE( VARCHAR(25) );
DROP FUNCTION ONC2_0514.FROM_ANH_RESPONSE_CODE( INTEGER );
ALTER TABLE ONC2_0514.NLP_INDEX DROP UNIQUE MDAONCNLPIDXCON1;
```

After deleting the CALL statements, click Run to drop schema.

deleteSchema.pl:

Log in to db2 system where your desired database resides and run the following command.

deleteSchema.pl --dbName=*your-db* --schema=*your-schema* --noSave --dropAll

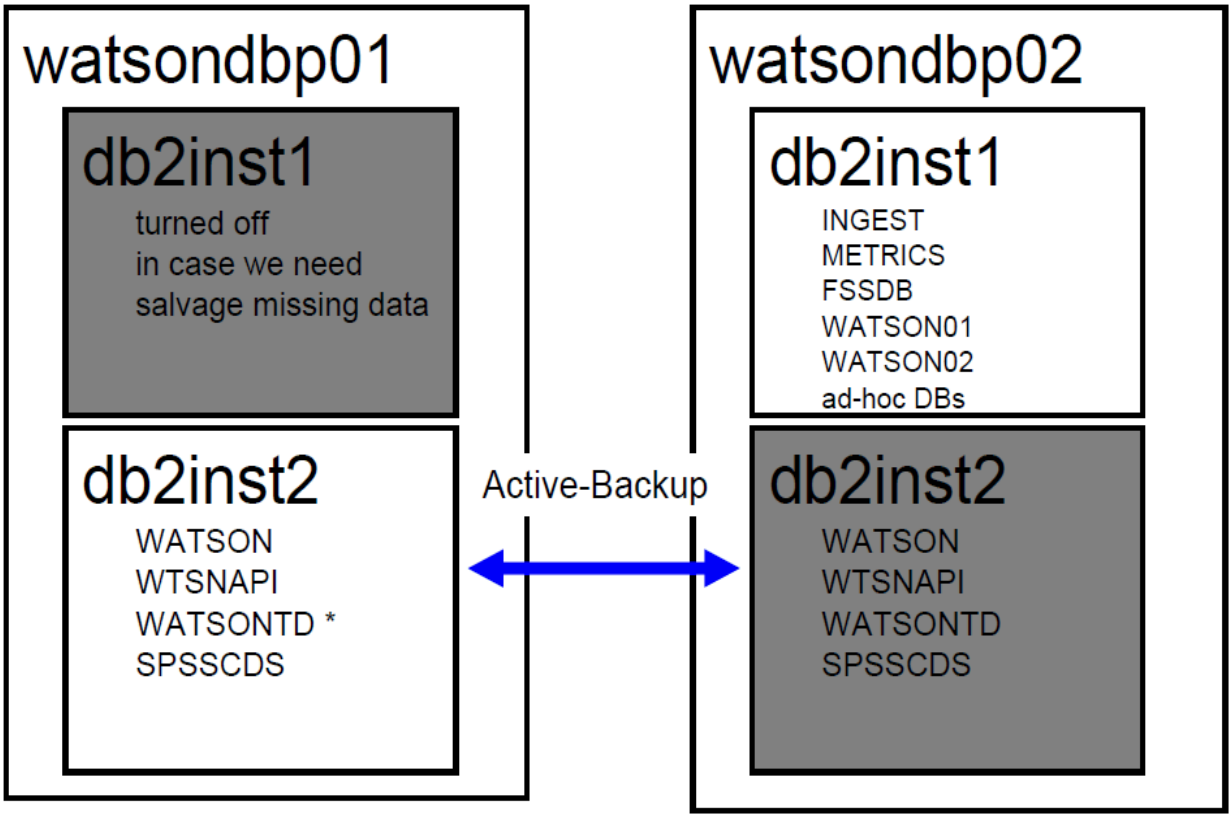
Old Archive:

Old Archive:

This document is intended to accumulate the latest and essential information of DB2 databases for Watson.

Our DB servers has been migrated HADR configuration. See this attachment

DB2_HA_20121116.pdf for detail.



* WATSONTD will have TRAININGDATA_V2 from METRICS.

The intentions of this configuration are
1. Separate development work between runtime pipeline and ingestion work.
2. Maximize the availability of development database
3. Maximize the utilization of hardware

This is a list of databases with its main schemas. This list occasionally referred when we transport them to the pilot site. An integrated packaging is planned, but not happened yet. This list will be a master list of databases and schemas for development and pilot systems.

Database	System	Schema(s)	Content
WATSON	HA, dbp01	MPCGxxxxxx	non-PHI medical - Alder pipeline
		FINANCExxx	non-PII finace
		UMLS_0_S_3	UMLS ontology annotators (will NOT be shipped to pilot)
		ONCOLOGY	non-PHI medical - Birch latest schema
		ONCxx_yyyy	Birch schema matching with code, xx = sprint, yyyy = month and date
		OEAx_yyyy	MDA schema
		NCCN	
		NSCL	
~~FSSDB~~	~~dbp02~~	~~DBANKV00~~	~~PII Deutsche Bank specific~~ Deleted on 03/04/2013
~~FSSCITI~~	~~HA, dbp01~~	~~ATTRITE~~	~~PII Citi specific~~ Deleted on 07/26/2013
~~SPSSCDS~~	~~HA, dbp01~~	~~(all)~~	~~SPSS repository for FSS - citi~~ Deleted on

			07/26/2013
MEDDB		(T.B.D.)	PHI Oncology -- patient / provider specific information ?
WTSNAPI	HA, dbp01	(any)	PHI/PII possible, API layer related
METRICS	dbp02		Analysis team - DDQB
WATSONTD	HA, dbp01		Training data
INGEST	dbp02		Ingestion team
WATSONWK	dbp02		All team member have access
MDA_PR	tst03b		
WATSONDV	tst04b		
WTSNDB01		(all)	will be removed
WATSONDB		(all)	will be removed
WATSON01		ONCOLOGY	performance test database for Stephan Roorda
WATSONPA	lbsp001	API_CTM_xxx CTM_xxx	

End User Operations:

For those who want to install GUI, refer this document to install Data Studio and/or Control Center.
SSL connection will be required for public network access. See this document for SSL configuration.

Here are the default user access authorities for each database.

Database	User	Authorities
WATSON	UWATSON	CONNECT, SELECT on tables (need grant for new tables)
WATSON	(assigned users)	CONNECT, CREATETAB, DATAACCESS
WTSNAPI	UWTSNAPI	CONNECT, CREATETAB, DATAACCESS
WTSNAPI	(assigned users)	CONNECT, CREATETAB, DATAACCESS
WATSONTD	(assigned users	CONNECT, CREATETAB, DATAACCESS
~~SPSSCDS~~	~~(assigned users)~~	~~CONNECT, CREATETAB, DATAACCESS~~
INGEST	UINGEST	CONNECT, CREATETAB, DATAACCESS
INGEST	UWATSON	CONNECT, SELECT on tables (need grant for new tables)
INGEST	(assinged users)	CONNECT, CREATETAB, DATAACCESS, LOAD
~~FSSCITI~~	~~CITIDB~~	~~CONNECT, CREATETAB~~
~~FSSCITI~~	~~(assigned users)~~	~~CONNECT, CREATETAB, DATAACCES~~
	~~DBANKDB~~	~~CONNECT, CREATETAB~~
~~FSSDB~~	~~(assigned users~~	~~CONNECT, CREATETAB, DATAACCES~~ Deleted on 03/04/2013
METRICS	UMETRICS	CONNECT, CREATETAB, DATAACCES
METRICS	(assigned users)	CONNECT, CREATETAB, DATAACCES
WATSONWK	all users	CONNECT, CREATETAB

To access databases:

You need either run db2_schema command as below or ask Osamu to gain access.

Log in to the system such as watsondbp01 and run the following command.

If you know which schema you want to access:
$ db2_schema --dbName=*your-db* --schema=*your-schema* --grant-table=select,*your-id*

Otherwise:
$ db2_schema --dbName=*your-db* --grant-db=connect,*your-id*

There are the following ways depending on what you want to do with your database.

- Command line processor on systems with DB2 installed. (watsondev17 watsondevp05, and watsondbp02)
  Log in to the system and run the following command.

  $ source /localHome/db2inst1/sqllib/db2profile
  $ db2 connect to *your-db*
  $ db2 "select ....."
  $ db2 terminate

- GUI on your PC
  Install Data Studio or Control Center. See this document for detail.
  Data Studio is eclipse based GUI. Control Center is deprecated in 9.7 or later. For those who are new to DB2, I recommend to use Data Studio.

- GUI on dev systems
  Please install your own copy of Data Studio on watsondev17. Data Studio is not supported on Power system.

To create schema:
Log in to dbp01 or dbp02 where your desired database resides and run the following command.

db2_schema --db=*your-db* --create=*your-new-schema*

To list access to a schema / tables
Log in to dbp01 or dbp02 where your desired database resides and run the following command.

db2_schema --db=*your-db* --schema=*your-schema* --list

db2_schema --db=*your-db* --schema=*your-schema* --listTable

To obtain access to a schema / tables
Log in to dbp01 or dbp02 where your desired database resides and run the following command.

db2_schema --db=*your-db* --schema=*your-schema* --grant-schema=

{createin|alterin|dropin|all},user-id

db2_schema --db=*your-db* --schema=*your-schema* --grant-table=*{select|control|all},user-id*

Admin Operations:

- Grant new user
  Run the following SQL statements or perform the equivalent via GUI. Please run appropriate grant option depends on the default permissions described in above table.

  $ db2 connect to *your-db*
  $ db2 grant connect on database to user *new-user*
  $ db2 grant createtab on database to user *new-user*
  $ db2 grant dataaccess on database to user *new-user*
  $ db2 terminate

- Export schema
  Login as a user with LOAD authority.
  ~~$ cd /watson/db2dbs/db2move~~
  ~~$ mkdir {dbName}_{schema}_{date} e.g. watson_oncology_20121109~~
  ~~$ cd watson_oncology_20121109~~
  $ /clusterManagement/scripts/exportSchema.pl --dbName *your-db* --schema *your-schema*
  If you failed with db2look as below, run 'db2_schema --dbName=your-db --sysSchema=your-id' and retry.
  SQL1092N The requested command or operation failed because the user ID does not have the authority to perform the requested command or operation. User ID:

- Import Schema
  Copy exported directory by exportSchema.pl to your target system
  $ cd {your-directory}
  $ vi Makefile to update / verify target database name (TGT_DB) and schema (TGT_SCHEMA)
  $ make import

- Stop / Start HADR DB2
  WATSON, WATSONTD, and WTSNAPI are HADR configured. The primary is db2inst2 on dbp01 and the standby is db2inst2 on dbp02.
  [Check there is no connection to DB2 servers]
  (db2inst2) db2 list applications

(db2inst2) db2 list utilities
[Stop HADR on dbp02]
(db2inst2@dbp02) db2 deactivate db watson
(db2inst2@dbp02) db2 deactivate db watsontd
(db2inst2@dbp02) db2 deactivate db wtsnapi
(db2inst2@dbp02) db2 stop hadr on db watson
(db2inst2@dbp02) db2 stop hadr on db watsontd
(db2inst2@dbp02) db2 stop hadr on db wtsnapi
[Stop HADR on dbp01]
(db2inst2@dbp01) db2 stop hadr on db watson
(db2inst2@dbp01) db2 stop hadr on db watsontd
(db2inst2@dbp01) db2 stop hadr on db wtsnapi
[Stop DB2]
(db2inst2@dbp01) db2stop
(db2inst2@dbp02) db2stop

Installation Procedure:

The most part of the installation will be executed as root. /localHost and /db2dbs need to be mounted via SAN or created in local file ssytem.

1. Run /clusterManagement/scripts/configureKernelParameterForDB2.pl
2. Enable su command temporarily for the DB2 installation
   # vi /etc/crontab
   comment out copyConfigFiles.sh to prevent system security files to be updated
3. # vi /etc/pam.d/su
   Uncomment the following line or add the line. This line should be commented out.
   auth sufficient pam_rootok.so
4. # cd /localHome
5. # cp -pR /clusterManagement/localHomeForDB2/dasusr1 .
6. # cp -pR /clusterManagement/localHomeForDB2/db2inst1 .
7. # cp -pR /clusterManagement/localHomeForDB2/db2fenc1 .
8. # cd /clusterManagement/installers/db2/prereq/vacpp.rte.121.linux_ppc
9. # yum install vacpp.rte-12.1.0.0-120323.ppc64.rpm xlsmp.msg.rte-3.1.0.0-120315a.ppc64.rpm xlsmp.rte-3.1.0.0-120315a.ppc64.rpm
10. # cd /clusterManagement/installers/db2/prereq/vacpp.rte.121.linux_ppc.apr2013.update
11. # yum install vacpp.rte-12.1.0.3-130410.ppc64.rpm xlsmp.msg.rte-3.1.0.3-130222.ppc64.rpm xlsmp.rte-3.1.0.3-130222.ppc64.rpm
12. # yum install pam-devel.ppc
13. # mkdir /root/installers
14. # cd /root/installers
15. # tar -xzvf /clusterManagement/installers/db2/ese_10_5/v10.5fp3_linuxppc64_server.tar.gz
16. # cd ese
17. # ./db2setup
18. Select 'Install a Product' and click 'Install Now' for DB2 Enterprise Server Edition Verion 10.5
19. Follow the instruction, do NOT create new users / groups. Use the following existing users / groups
    Do not install SA MP (for non-HA enverionment)
    DB2 Administrator user: dasusr1 (group=dasadm1)
    Create DB2 Instance as Single partition instance
    DB2 Instance Owner: db2inst1 (group=db2iadm1)

DB2 Fenced User: db2fenc1 (group=db2fadm1)
TCP/IP port: db2c_db2inst1 = 50001
Prepare DB2 tools catalog in TOOLSDB and SYSTOOLS

20. # /opt/ibm/db2/V10.5/bin/db2val
21. save the log file like /tmp/db2val-04_01_11:30:16.log
22. # cd /root/installers
23. # tar -xzvf /clusterManagement/installers/db2/ese_10_5/v10.5fp4_linuxppc64_server_t.tar.gz
24. # cd ese
25. # ./installFixPack
26. # sudo -i -u db2inst1
    $ db2start
    04/01/2013 11:32:38 0 0 SQL1063N DB2START processing was successful.
    SQL1063N DB2START processing was successful.

SQL0805N

Hoa's note: Install DB2 V9.7 fixpak 8 on tst24a.txt

Problem Determination Procedures:

SQL2044N occurred with local 4 disks on watsontst04b during 'load from tab5.ixf of ixf INSERT into "MPCG12_4QF"."CUISCORES" COPY NO'.

$ db2 connect to watson
$ db2 'load from tab5.ixf of ixf restart into "MPCG12_4QF"."CUISCORES" COPY NO'