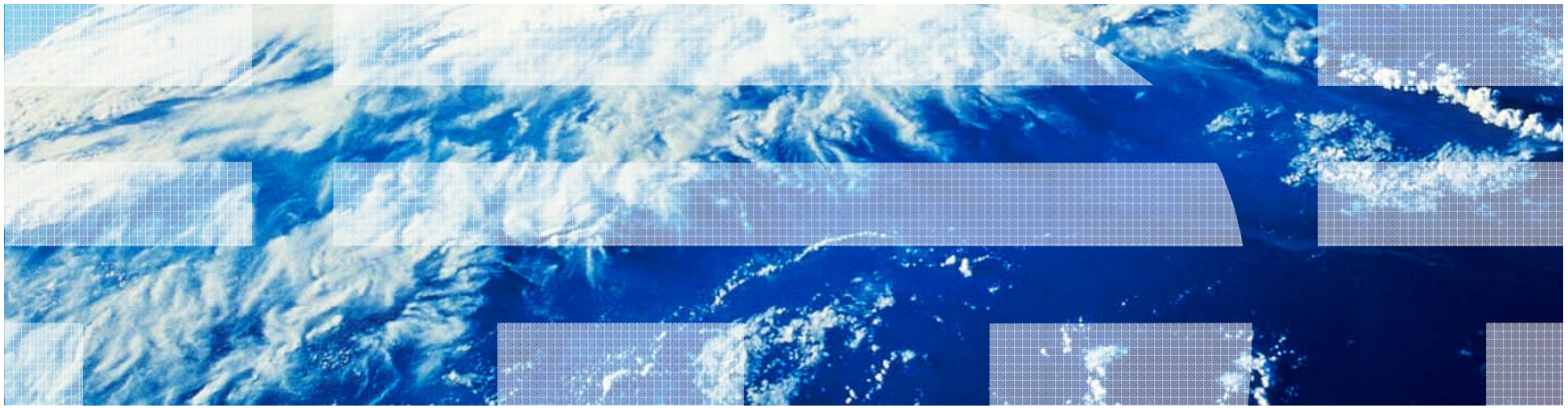
IBM

Information Management

The DB2 Database Manager Instance

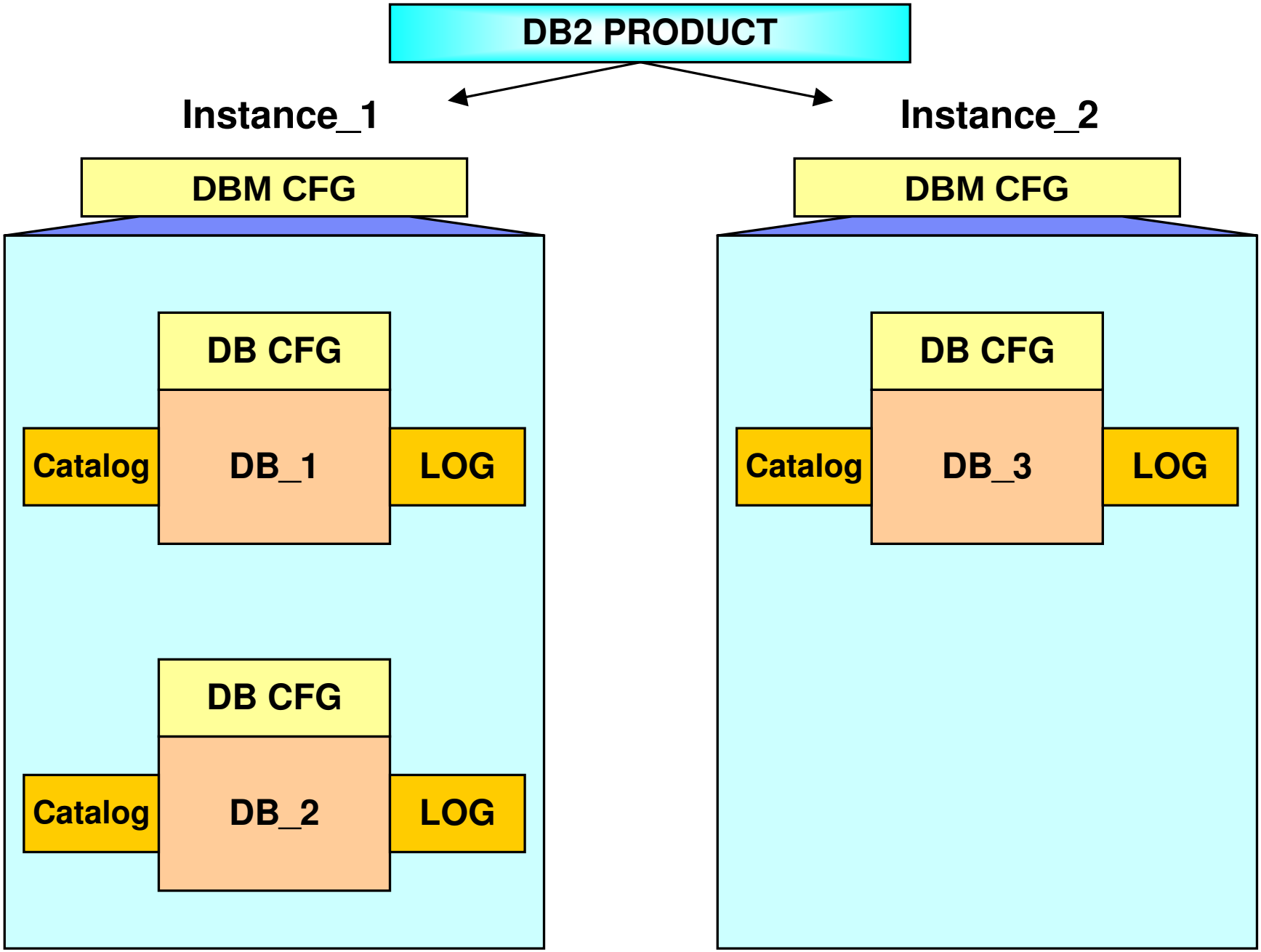


Unit objectives

After completing this unit, you should be able to:

- Specify the key features of an Instance
- Create and drop a DB2 Instance
- Use db2start and db2stop commands to manage a DB2 instance
- Display and set DB2 registry variables
- Describe and modify the Database Manager Configuration

What is an instance?



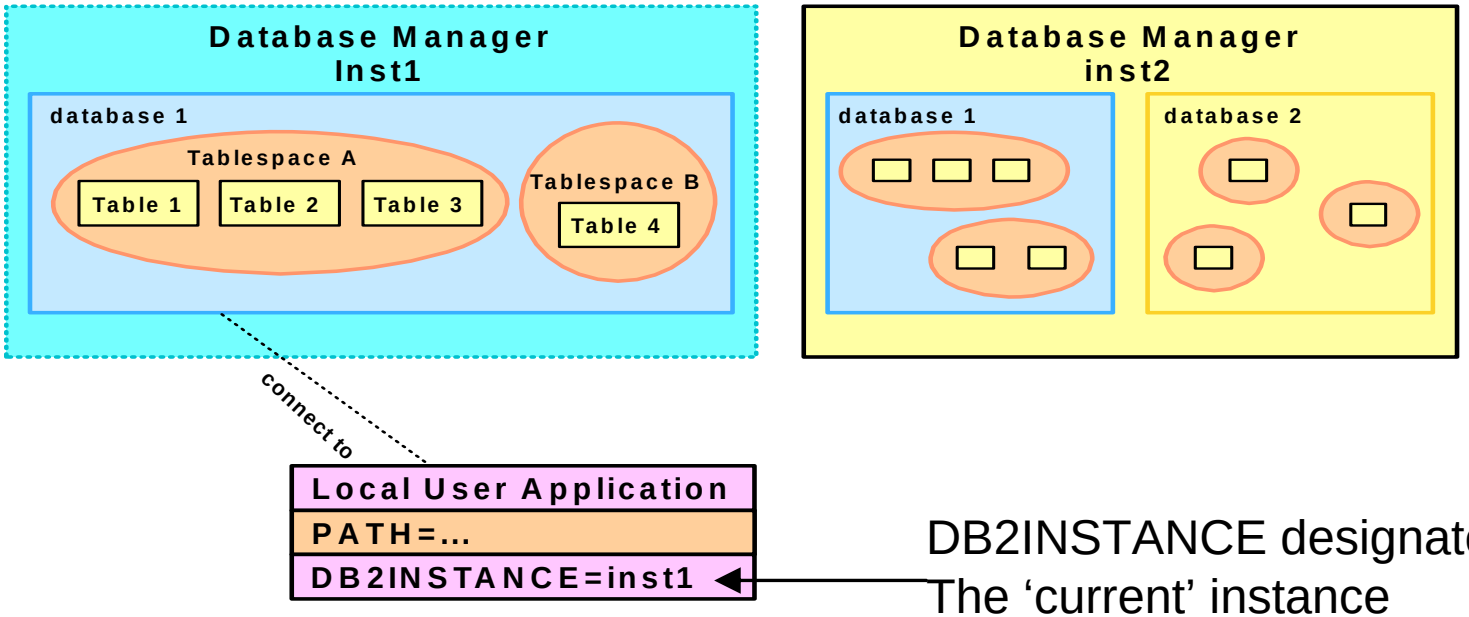
The Database Manager instance

A database server could support multiple DB2 instances

Database Server

A DB2 instance could manage a single database

A DB2 instance can manage multiple databases



DB2INSTANCE designates The 'current' instance

Create and drop an instance

- CREATE (different on Linux/UNIX and Windows):
  - Prerequisites met?
  - Creates the Instance
  - Creates the SQLLIB subdirectory
  - Creates needed directories in the SQLLIB subdirectory
  - Creates the DBM CFG with defaults

```
db2icrt –u <fencedID>  <instance_name>  (UNIX/Linux)
db2icrt  <instance_name>                (Windows)
```

- DROP:
  - Instance must be stopped and no applications are allowed to be connected to the databases in this instance
  - Does not remove (drop) databases
  - Removes the Instance

```
db2idrop <instance_name>
```

Starting and stopping an instance

db2start

db2stop

DB2 registry and environment variables

- DB2 provides a number of registry variables and environment variables that you might need to know about to get up and running
- Options can be set at the Global (server) or DB2 instance level
- Generally the instance must be restarted after changing registry variables
- These can be used to customize the DB2 runtime processing to fit a specific application needs
- Some provide basic common configuration
  - DB2COMM - must be set to TCPIP to enable tcp/ip client communication `db2set db2comm=tcpip`
  - DB2FODC - This registry variable controls a set of troubleshooting-related parameters used in First Occurrence Data Collection (FODC)
- Some alter DB2 internal processing
  - DB2_REDUCED_OPTIMIZATION – can be used to adjust DB2 optimization processing
- DB2_WORKLOAD can be set to provide a specific grouping of several registry variables with predefined settings
  - DB2_WORKLOAD Values: 1C, CM, COGNOS_CS, FILENET_CM, INFOR_ERP_LN, MAXIMO, MDM, SAP, TPM, WAS, WC, or WP

Using the db2set command

- The db2set command displays, sets, or deletes the values of DB2profile variables

Examples

Display all supported registry variables:

```
db2set -lr
```

Display all defined values for the current instance:

```
db2set -all
```

Set the DB2COMM registry variable to TCPIP for all instances pertaining to a particular installation:

```
db2set -g DB2COMM=TCPIP
```

Set the DB2COMM registry variable to TCPIP only for instance MYINST:

```
db2set -i MYINST DB2COMM=TCPIP
```

Set the DB2COMM registry variable to null at the default level. The default level is the instance level:

```
db2set -null DB2COMM
```

Delete the current value of the registry variable DB2_ANTIJOIN so that it takes effect the next time the SQL statement is compiled:

```
db2set DB2_ANTIJOIN= -immediate
```

Checking DB2 Registry variables using SQL

The ENV_GET_REG_VARIABLES table function returns the DB2 registry settings

Syntax

```
>>-ENV_GET_REG_VARIABLES--(--member--)------------><
```

For example, the registry variable DB2DBDFT, which specifies the database alias name to use for implicit connections, is set to CORP_1.

```
db2set db2dbdft=CORP_1
db2start
```

You can issue a query to show that registry variable setting:

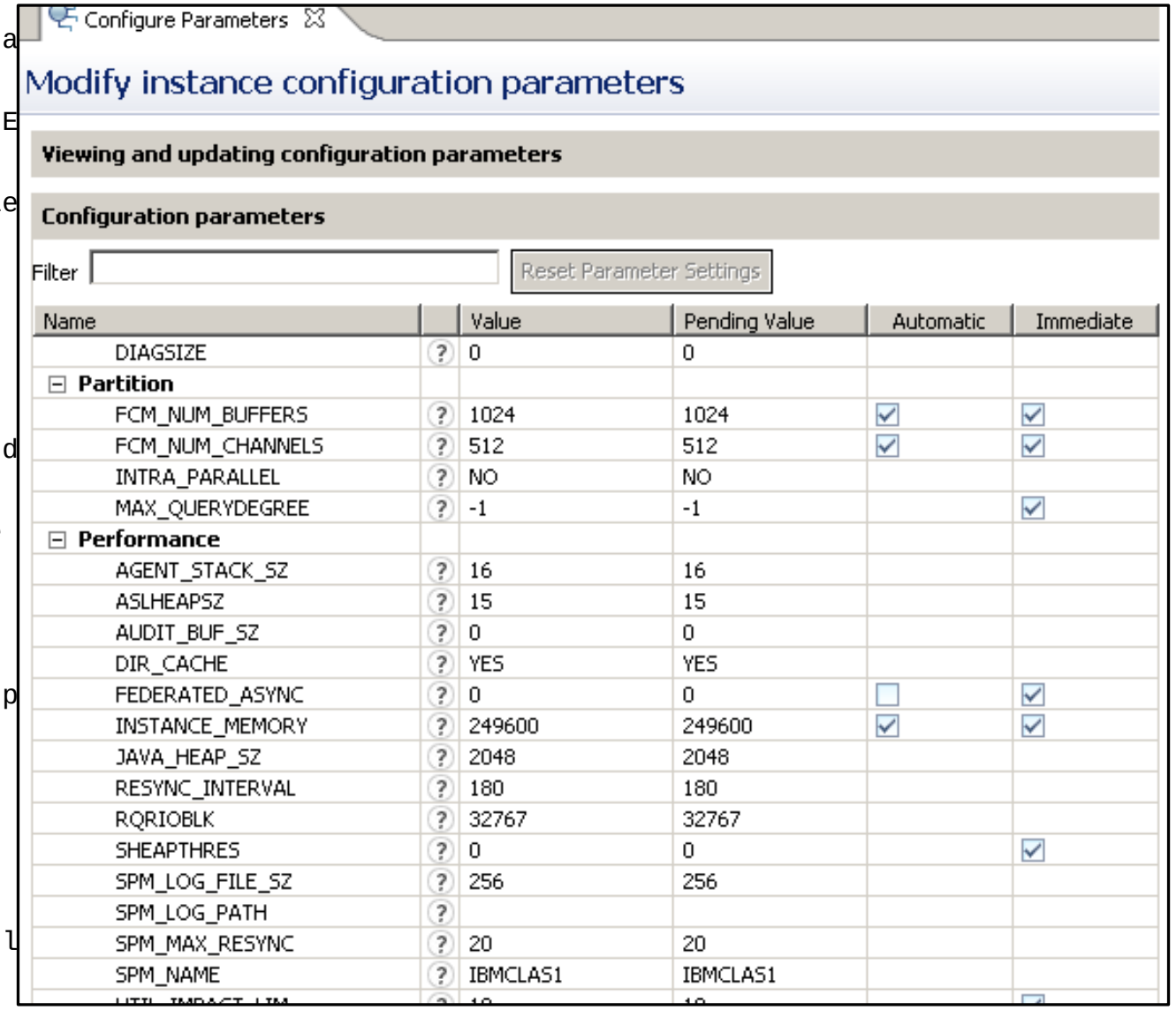
```
select substr(reg_var_value,1,20) as VALUE,
 substr(reg_var_on_disk_value,1,20) as ON_DISK_VALUE
  from table(env_get_reg_variables(-1)) as T1
  where reg_var_name = 'DB2DBDFT‘
```

This query returns the following output:

```
VALUE                ON_DISK_VALUE
-------------------- --------------------
CORP_1               CORP_1
```

Database Manager configuration

```
C:\IBM\SQLLIB\BIN>db2 get dbm cfg

          Database Manager Configura

     Node type = Enterprise Server E

 Database manager configuration rele

 Maximum total of files open
 CPU speed (millisec/instruction)
 Communications bandwidth (MB/sec)

 Max number of concurrently active d
 Federated Database System Support
 Transaction processor monitor name

 Default charge-back account

 Java Development Kit installation p
k

 Diagnostic error capture level
 Notify Level
 Diagnostic data directory path
 Size of rotating db2diag & notify l
```



Unit summary

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Student exercise