SECTION – 3
DB2 ARCHITECTURE

Lecture 4

DB2 Environment - Databases
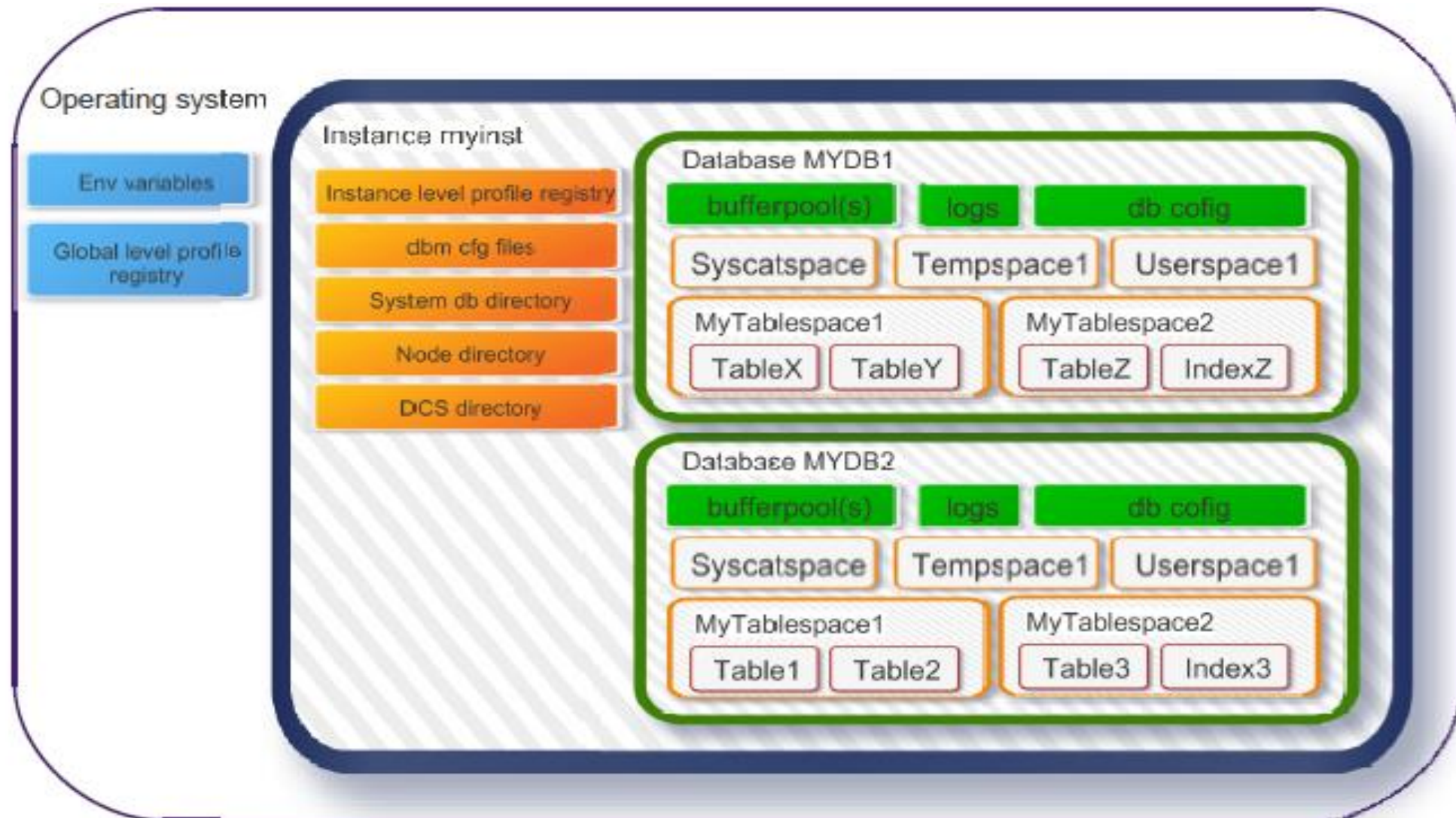
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DB2 Environment – The Big Picture

Databases

A database is a collection of information organized into interrelated objects like table spaces, tables, and indexes.

Databases are closed and independent units associated to an instance. Because of this independence, objects in two or more databases can have the same name.

DB configuration file (db cfg)

Database Configuration (get db cfg)

```
Administrator: DB2 CLP - DB2COPY1 - db2
db2 => get db cfg for sample

         Database Configuration for Database sample

 Database configuration release level                        = 0x0d00
 Database release level                                      = 0x0d00

 Database territory                                          = US
 Database code page                                          = 1208
 Database code set                                           = UTF-8
 Database country/region code                                = 1
 Database collating sequence                                 = IDENTITY
 Alternate collating sequence               (ALT_COLLATE) =
 Number compatibility                                        = OFF
 Varchar2 compatibility                                      = OFF
 Date compatibility                                          = OFF
 Database page size                                          = 8192

 Dynamic SQL Query management               (DYN_QUERY_MGMT) = DISABLE

 Statement concentrator                         (STMT_CONC) = OFF

 Discovery support for this database          (DISCOVER_DB) = ENABLE

 Restrict access                                            = NO
 Default query optimization class            (DFT_QUERYOPT) = 5
 Degree of parallelism                          (DFT_DEGREE) = 1
 Continue upon arithmetic exceptions    (DFT_SQLMATHWARN) = NO
 Default refresh age                       (DFT_REFRESH_AGE) = 0
 Default maintained table types for opt (DFT_MTTB_TYPES) = SYSTEM
 Number of frequent values retained       (NUM_FREQVALUES) = 10
 Number of quantiles retained              (NUM_QUANTILES) = 20

 Decimal floating point rounding mode   (DECFLT_ROUNDING) = ROUND_HALF_EVEN

 Backup pending                                             = NO

 All committed transactions have been written to disk        = YES
```
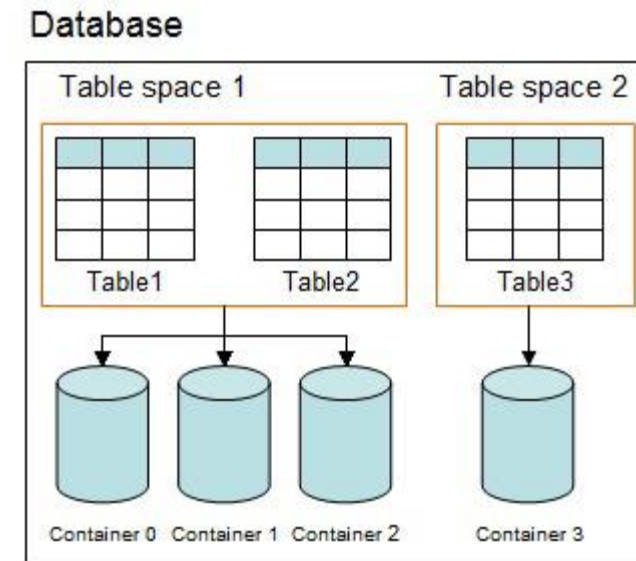
Tablespaces

Table spaces are logical objects used as a layer between logical tables and physical containers.

Three Default Tablespaces:

- ❑ SYSCATSPACE
- ❑ TEMPSPACE1
- ❑ USERSPACE1

Buffer Pools

A **buffer pool** is an area in memory which is used to improve the performance of queries.

Buffer pools are one of the most important objects to tune for database performance.

Default buffer pool for databases : IBMDEFAULTBP

Log Files

Logs are used by DB2 to record every operation against a database.