



IDUG
2024 NA **Db2** Tech Conference

Db2 Level up

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OPS



@IDUGdb2
#IDUG_NA24

Session Code: MODDEV1 | Platform: Z/OS

Disclaimer

- All procedures presented have been designed and developed for educational purposes only
- This presentation is based on my own experience and knowledge
- Use information and ideas at your own risk

Agenda

- Intricacies of Db2 Upgrade
- Continuous Delivery
- Application compatibility
- Data Server Clients and Drivers
- Questions

Intricacies of Db2 Upgrade



Load module size generated by DSNELI will change?

DO we need to have our Drivers upgraded to new version before we can have all our packages on a version Higher than the current ?

Our Application is doing Casting , new APPLCOMPAT is supporting the Casts similar to DB2 V10?

We try to explore the intricacies of Db2 Upgrades and shed light on the often-encountered phrases such as "Code level," "Catalog level," "Function-level," "Application compatibility level," and "Connect level." These terms can often raise concerns among DBAs and developers regarding their impact on the Db2 subsystem and applications.

Dispelling the myths and misconceptions surrounding these levels is our goal. Through this event, we aim to equip you with a deeper understanding of each level and how they synergistically function together.

As humans, we tend to find comfort in what has worked reliably for us over the years. However, it is essential to expand our knowledge of Db2 Levels to fully capitalize on the benefits of a Db2 upgrade and ensure a seamless transition.

Agenda

- Intricacies of Db2 Upgrade
- **Continuous Delivery**
 - **Continuous Delivery Concept**
 - Continuous delivery and function levels DB2 12 ,13
- Application compatibility level
- Data Server Clients and Drivers
- Questions

Continuous Delivery Concept [1 | 2]

Instead of delivering a **huge batch of new features every 3 years** through a new Db2 version, we are delivering **smaller batches of new functionality 3-4 times per year** via new Db2 function levels.

Continuous manner in the Db2 service stream

As before Db2 APARs, PTFs,...

They contain both fixes and new features

Db2 12 introduces the concept of *Continuous Delivery*. This means that new functionality is not delivered in releases but rather in a continuous manner in the Db2 service stream. As before, Db2 APARs, PTFs, and PUT levels continue to be the primary mechanism. They contain both fixes and new features.

Instead of delivering a huge batch of new features every 3 years through a new Db2 version, we are delivering smaller batches of new functionality 3-4 times per year via new Db2 function levels.

New capabilities are introduced to Db2 13 through continuous delivery of APARs in a single service stream. Many APARs in Db2 13 deliver deactivated functional code to support future function levels. However, some APARs introduce their enhancements in Db2 13 regardless of the activated function level.

[New-function APARs for Db2 13 - IBM Documentation](#)

Continuous Delivery Concept [2 | 2]

- **How to control the deployment of new functionalities**

- Code Level
 - Upgrade Db2 Libraries
 - Contains the Db2 code changes and introduces fixes
- Catalog Level
 - Catalog changes that are required for specific function levels
- Function Level
 - Introduces new Db2 features and functionality

To properly control when new functionality is deployed, Db2 introduces the following new levels:

- Db2 maintenance level (ML) contains the Db2 code changes and introduces fixes. It is also known as code level.
- Db2 catalog level (CL) contains Db2 Catalog changes that are required for specific function levels.
- Db2 function level (FL) introduces new Db2 features and functionality

The significant levels are the Db2 maintenance levels, which contain the code changes, and the Db2 function levels, which activate new functionality

A particular function level might enable one or several enhancements. In most cases, you can activate a higher function level without separately activating each low

We have new function mode by progress and receive maintenance.

Using activate command to activate individual function levels you want them to allow them to use

If function level requires catalog changes , we run catmaint and then Activate function level for use

Target libraries , catalog , activated function level at different levels, but the developers and application can use by the level that activated

Basically, it just means that they group a bunch of fixes together and make it a function level.... so, when they had 500, people started calling in with error and APAR, then they built the PTF to resolve the APARs, then after a while, IBM decide oh, it's enough fixes, let's make it a level. then out comes 501... etc. Therefore, if a company is very proactive on applying fixes, they'll likely bring their code up to more recent level, but my not be ALL certain functional level.

Code Level

- Code Level for a corresponding function level :
 - As before Db2 APARs, PTFs,...
 - They contain both fixes and new features
- New function levels are delivered in the same service stream as other maintenance items
- Code level is likely to increase as you routinely apply maintenance to a subsystem or member.

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The necessary APAR
Any prerequisite new function code
Defect fixes
Other service items

Continuous manner in the Db2 service stream
As before Db2 APARs, PTFs, ...
They contain both fixes and new features

The code level of a Db2 subsystem or data sharing member indicates that the necessary APAR and any prerequisite new function code, defect fixes, and other service items for a corresponding function level are applied. Because new function

levels are delivered in the same service stream as other maintenance items, the code level is likely to increase as you routinely apply maintenance to a subsystem or member. If you proactively apply maintenance, you can expect the code level to be higher than the catalog level or function level as you prepare to adopt of new Db2 capabilities.

APAR → is an IBM internal formal report to development to report **program malfunctions**.

FIXes → A few errors like Buffer Pool leak , or to Fix an error that was Reported as APAR

PTFs → Contain fixes for several different problems, so several APAR fixes
Code Level → FIXes +New Functions

Catalog Level

- Change in DB2 Catalog and Directory
- The catalog level is updated when you submit a **CATMAINT** utility job by tailoring and running the DSNTIJTC sample job

The catalog level is updated when you submit a CATMAINT utility job by tailoring and running the DSNTIJTC sample job

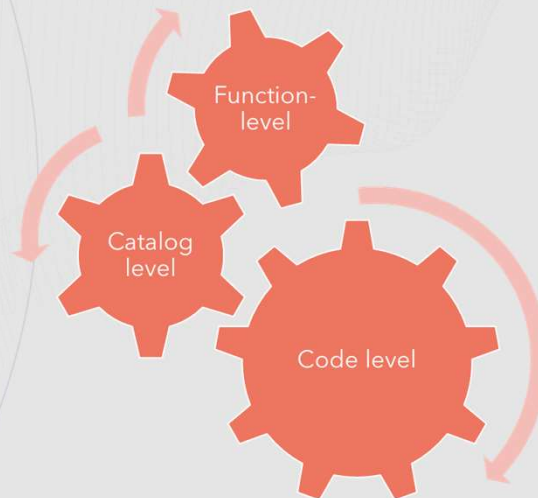
ACTIVATE command: **Activation of a Function Level**

- **ENABLES** set of new Db2 capabilities and enhancements
- Virtual storage enhancements
- Subsystem parameters
- Optimization enhancements
- SQL capabilities

A function level enables a particular set of new Db2 capabilities and enhancements that were previously delivered in the single continuous stream of Db2 code. It includes code that supports new capabilities, defect fixes, and preventive service items. Before you can use the new capabilities of a function level, you must activate the function level, or a higher function level. Activation of a function level implies activation of the capabilities that are introduced by all lower function levels

Depiction of Continuous Delivery

Before you can activate a function level, the Db2 subsystem, or all Db2 data sharing members, must be at a sufficient code level, and the Db2 catalog must be updated to the required Db2 catalog level.



Before you can activate a function level, the Db2 subsystem, or all Db2 data sharing members must be at a sufficient code level, and the Db2 catalog must be updated to the required Db2 catalog level.

Bring service units, doing maintenance and applying to target libraries. If want to go a NEW FUNCTION LEVEL, and it needed catalog changes Run CATMAIN, then ACTIVATE FUNCTION LEVEL for use. Can have libraries, catalog, and ACTIVATED function LEVEL at different levels, but application can only USE up to level that have ACTIVATED BIND/REBIND to be able to use those NEW FUNCTIONS

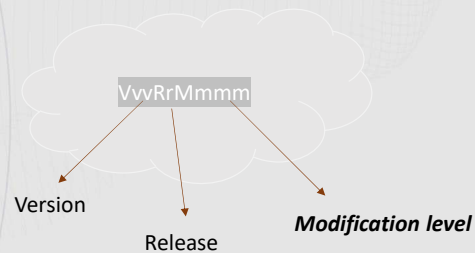
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Target libraries , catalog , activated function level at different levels, but the developers and application can use by the level that activated

Code , Catalog, Function levels identifiers

- Specified by nine-character strings that correspond to the Db2

- The format is `VvvRrMmmm`



- For example, `V13R1M503` identifies *function level* 503.

In most cases, code levels, catalog levels, function levels, and application compatibility levels are specified in commands and message output by nine-character strings that correspond to the Db2 version, release, and modification value. However, descriptions of function levels in documentation often refer only to the modification part of the values. The format is `VvvRrMmmm`, where

- `vv` is the version,
- `r` is the release,
- `mmm` is the modification level.

For example, `V12R1M510` identifies function level 510.

Often function level identifiers are abbreviated. For example, “function level 510” refers to `V12R1M510`.

DISPLAY Group command

```
*** BEGIN DISPLAY OF GROUP(.....) CATALOG LEVEL(V12R1M500),
```

← Catalog level

```
CURRENT FUNCTION LEVEL(V12R1M500),
```

```
HIGHEST ACTIVATED FUNCTION LEVEL(V12R1M500),
```

```
HIGHEST POSSIBLE FUNCTION LEVEL(V12R1M501),
```

```
PROTOCOL LEVEL(2),
```

```
GROUP ATTACH NAME(.....),
```



Function Level

```
-----  
DB2    SUB      DB2  SYSTEM  IRLM,  
MEMBER ID SYS  CMDPREF  STATUS  LVL  NAME    SUBSYS IRLMPROC,  
-----  
0      DSNX   -HX    ACTIVE  121510 SYHX  IRLM  DSNXIRLM,  
-----
```

```
SPT01 INLINE LENGTH: 32138,
```

```
*** END DISPLAY OF GROUP(.....),
```

```
DSN90221 -HX DSN7GCMD 'DISPLAY GROUP ' NORMAL COMPLETION,
```

```
***,
```

Code level

This DISPLAY GROUP command , you see different details here

We can Check that Db2 is at a sufficient code level by issuing a DISPLAY GROUP command, as described in [Determining the Db2 code level, catalog level, and function level.](#)

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Db2 12 function levels Vs catalog levels

Catalog Level

- V12R1M500
- V12R1M502
- V12R1M503
- V12R1M505
- V12R1M507
- V12R1M509

Function Level

- FL 501
- FL 502
- FL 505
- FL 506
- FL 507
- FL 508
- FL 509
- FL 510

Continuous delivery and function levels DB2 12 [1|2]

FL501

LISTAGG Built in Function

FL502

Casting Explicit numeric values to Graphic

FL505

Rebind Phase in overcoming deterrent to rebinding

FL506

Application portability improvements

FL507

Create or replace stored procedures

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FL505

Rebind Phase in overcoming deterrent to rebinding

The REBIND PACKAGE command might create a new current copy of the package, while retaining the existing current copy as a phase-out copy. This is called rebind phase-in. There may be multiple copies of an existing package, but there will only ever be one current copy. There may be one original copy, one previous copy, and multiple phased-out copies.

Continuous delivery and function levels DB2 12 [2 | 2]

- **FL-508**

- Multi Table tablespace conversion to UTS – Partition by Growth
- Fast Traversal BLOCK expansion to support non-unique indexes to extend performance and Reduce cost

- **FL509**

- Audit policies
- High availability for accelerator-only tables
- Specification of a compression algorithm at the object level
- Temporal RI enhancement to allow UPDATE or DELETE on a parent table

- **FL510** is required before you can migrate a Db2 12 environment to Db2 13. It does not introduce any new features or capabilities, or catalog changes, in Db2 12

Db2 13 function levels Vs the catalog levels

Catalog Level

- V13R1M100
- V13R1M501

Function Level

- FL 100
- FL 500
- FL 501
- FL 502
- FL 503

Db2 13 function levels use the catalog levels

Catalog Level	Catalog Object	Function Level
V13R1M100		FL100
V13R1M100		FL500
V13R1M501	SYSCOPY, SYSINDEXSPACESTA ,...	FL501
V13R1M501	SYSPACKAGE, SYSCOPY	FL502
V13R1M501	SYSCOLUMNS	FL503

The catalog level is updated when you submit a CATMAINT utility job by tailoring and running the DSNTIJTC sample job

Catalog changes in catalog level V13R1M501 for function level 501 activation. In IBM website as [Catalog changes in Db2 13 - IBM Documentation](#)
Also could be adjustments in some Directory tablespaces such as Directory changes in function level 500 as SPT01 and SYSLGRNX table spaces are converted to DSSIZE 256 GB

New capabilities in Db2 13 [1 | 4]

- NOT depend on Db2 13 catalog changes
- Depend on Db2 13 catalog changes

Function levels DB2 13 [2 | 4]

NOT depend on
Db2 13 catalog
changes

FL100
FL500

Depend on Db2
13 catalog
changes

FL501
FL502
FL503

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FL-100 , **Many** new **capabilities** in Db2 13 remain **unavailable**.

FL-500 , first opportunity to use many of the new capabilities in Db2 13. But, whatever is depend on **Db2 13 catalog** changes remain **unavailable**

FL 501 is the first opportunity to use new **features** and capabilities that **depend** on **catalog** changes in Db2 13.

FL- 502 introduces Db2 controlled sysplex workload balancing (WLB) and infrastructure for **statement-level invalidation**.

FL 503 introduces improved default behavior for added ROW CHANGE TIMESTAMP columns in existing rows, accelerator-only support for queries with IN list predicates with more than 32K elements with IBM Db2 Analytics Accelerator V7 for z/OS, and *optimize-clause* support for SELECT INTO statements.

Function levels DB2 13 [3 | 4]

FL-100 (V13R1M100)

Default value of the PAGESET_PAGENUM is RELATIVE
Changes to DBAT termination , Improved logic for INSERT operations
Index look-aside optimizations, Enhanced sort optimizations

FL-500 (V13R1M500)

The type of owner for a plan, package, can be a role or an authorization ID.
SQL Data Insights (SQL DI), an integrated solution that brings deep learning AI capabilities
Online conversion of tables from (PBG) TO (PBR)
Increased control for **applications** over how long to wait for a lock
Profile table enhancements for application environment settings
Delete an active log data set from the BSDS while Db2 is running
Change REORG INDEX SHRLEVEL REFERENCE or CHANGE so the NOSYSUT1 keyword is the default

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FL-100 (V13R1M100)

PAGESET_PAGENUM ZPARM default changes to RELATIVE its is for creation of universal PBR table space , and says what mechanism used for page numbering . Is it relative or absolute . Default in Db2 13 is relative.it gives us very bigger ts , and any changes materialized immediately ,no need for online reorg.

For existing tablespaces we need REORG to go RELATIVE from absolute!

[For CREATE TABLE statement](#) , The PAGESET_PAGENUM subsystem parameter specifies the default for the PAGENUM option, and its default value is changed from ABSOLUTE to RELATIVE.

FL-500 (V13R1M500)

[Three new function introduced for AI as:](#)

AI ANALOGY ,AI SEMANTIC CLUSTER ,AI SIMILARITY

SET CURRENT LOCK TIMEOUTNew statementNoneNoCURRENT LOCK TIMEOUT

[special register](#)New special register

Online conversion of PBG to PBR. In db2 13 FL500 there is a new Clause for ALTER TABLE which is ALTER PARTITIONING then Specify “partition by range” . Then specify value range for each part , and this a pending change that need (ONLINE)REORG. On table space . currently not available for LOB and XML tables.

Dynamically REMOVE ACTIVE LOG Datasets from BSDS.
FL 501 (V13R1M501)

[DEADLOCK_RESOLUTION_PRIORITY built-in global variable](#)New built-in global variable

Function levels DB2 13 [4 | 4]

FL- 501

Collection of **real-time and historical** information about **utility execution**

Real-time statistics support for index splits

Allow applications to specify a deadlock resolution priority

FL- 502

Db2 controlled sysplex workload balancing (WLB)
Infrastructure for statement-level invalidation.

FL - 503

Improved default behavior for added ROW CHANGE
TIMESTAMP columns in existing rows
Accelerator-only support for queries with IN list
predicates with more than 32K elements
optimize-clause support for SELECT INTO statements.

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FL-503

The *optimize-clause*, such as OPTIMIZE FOR 2 ROWS can be now specified in SELECT INTO statements

[Overview of what's new in Db2 13 - IBM Documentation](#)

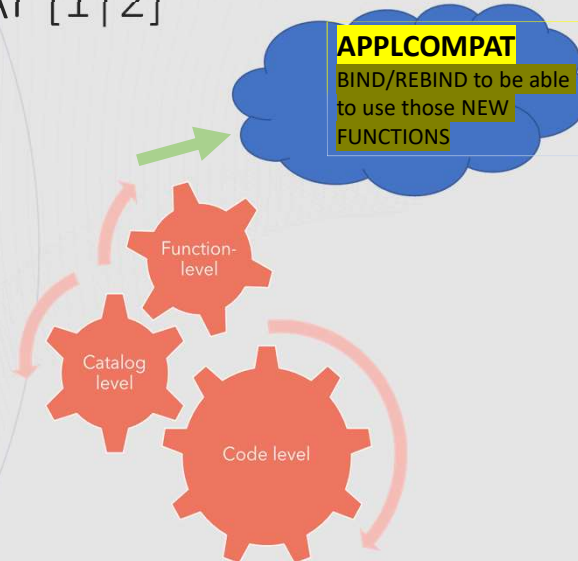
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- Intricacies of Db2 Upgrade
- Continuous Delivery
- **Application Compatibility**
 - What is APPLCOMPAT
 - Why we need APPLCOMPAT
 - Learn more about APPLCOMPAT
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How can application capitalize on the benefits of Db2 upgrade?

What is APPLCOMPAT [1 | 2]

- APPLCOMPAT ,ZPARAM
 - For system LEVEL
- APPLCOMPAT bind option
 - For Application



APPLCOMPAT bind option

determines the SQL level of applications

APPLCOMPAT ,ZPARAM

Applcompat in BIND statement overrides what we have in ZPARAM

Always having ZPARAM down level for the worst person , and people taking advantage of what they have in their Bind statement

Recommended to put zparm in the down level of applcompat until you want to go to higher level

What is APPLCOMPAT [2 | 2]

- Determines the SQL level
- Activates new SQL syntax
- Freezes the SQL syntax

Why we need APPLCOMPAT ? [1 | 2]

- When we have a legacy application and NOT sure what were the SQL Statements over the years?
- What would be expectations by Activating NEW FUNCTION LEVEL? And NEW APPLCOMPAT?
- Always a concern that some thing is NOT working properly !
- Expecting Incompatibilities
- Expecting unexpected !

Why we need APPLCOMPAT ? [2 | 2]

- It **enables** the **use of SQL** functions those were **introduced** with a Db2 version for example, the AI_SIMILARITY Function
- Protects a program from SQL **incompatibility**.
 - Staying in LOWER APPLICATION LEVEL

you can use the application compatibility level to control the adoption of new SQL capabilities and enhancements of function levels.

You can use the *application compatibility* level of applications, and objects such as routines or triggers, to control the adoption and use of new and changed SQL capabilities that are introduced in function levels. Generally, applications, and routines or triggers, cannot use new or changed SQL capabilities unless the effective application compatibility level is equivalent to or higher than the function level that introduced the changes. The application compatibility level applies to most SQL statements, including data definition statements (such as CREATE and ALTER statements) and data control statements (such as GRANT and REVOKE statements).

The corresponding function level or higher must be activated when you bind packages at an application compatibility level. However, if you activate a lower function level (or * function level), applications can continue to run with the higher application compatibility level.

To prevent the continued use of SQL capabilities introduced in the higher function level, you must also modify the application and change the effective application compatibility level to the lower level.

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 - What is APPLCOMPAT
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 - **Learn more about APPLCOMPAT**
 - **APPLCOMPAT Level**
 - Finding APPLCOMPAT incompatibilities
 - Managing APPLCOMPAT incompatibilities
- Data Server Clients and Drivers
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APPLCOMPAT Level [1 | 2]

- To know APPLCOMPAT LEVEL
 - For static SQL statements, the **APPLCOMPAT column** of the **SYSIBM.SYSPACKAGE**
 - For Dynamic SQL statements, the **CURRENT APPLICATION COMPATIBILITY** special register

```
SELECT CURRENT APPLICATION COMPATIBILITY  
FROM SYSIBM.SYSDUMMY1;
```

Find out the value of APPLCOMPAT

For static SQL statements, the **APPLCOMPAT column** of the **SYSIBM.SYSPACKAGE** catalog table stores the application compatibility setting.

For **Dynamic** SQL statements, the **CURRENT APPLICATION COMPATIBILITY** special register stores the application compatibility setting.

```
SELECT CURRENT APPLICATION COMPATIBILITY  
FROM SYSIBM.SYSDUMMY1;
```

APPLCOMPAT Level [2 | 2]

- How to change APPLCOMPAT Level
 - For Static SQL, BIND or REBIND PACKAGE
 - For DYNAMIC SQL , SET CURRENT APPLICATION COMPATIBILITY
 - Change the Db2 application compatibility level in effect for subsequent SQL statements that you or a program might issue
 - Cannot dynamically go to a level higher than the package's APPLCOMPAT value.

How to change APPLCOMPAT Value

How to change APPLCOMPAT Level

For Static SQL, BIND or REBIND PACKAGE

For DYNAMIC SQL , SET CURRENT APPLICATION COMPATIBILITY

Change the Db2 application compatibility level in effect for subsequent SQL statements that you or a program might issue

Only change that level to the BELOW APPLCOMPAT value of the package being used

Cannot dynamically go to a level higher than the package's APPLCOMPAT value.

SET CURRENT APPLICATION COMPATIBILITY statement to change the Db2 application compatibility level in effect for subsequent SQL statements that you or a program might issue, but you can only change that level to a value BELOW the APPLCOMPAT value of the package being used - you can't dynamically go to a level higher than the package's APPLCOMPAT value.

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Finding application incompatibilities

- Start a trace for IFCID 0376 to report incompatibility information about the packages.
- For example, issue the following START TRACE command:
 - **-START TRACE(PERFM) CLASS(32) IFCID(376)**

Before you move an application to a new application compatibility level, you need to find application incompatibilities, adjust your applications for those incompatibilities, and verify that the incompatibilities no longer exist. Start a trace for IFCID 0376 to report incompatibility information about the packages. For example, issue the following START TRACE command: Before going to a function level Just look into the incompatibilities ,make sur you understand what they are and make sure you handled them if necessary before going forward, because what you don't want will surprise you when going through this process

[Verify Db2 13 premigration activities and activate function level 510 in Db2 12 - IBM Documentation](#)
[SQL changes in Db2 13 - IBM Documentation](#)

Managing application incompatibility [1 | 5]

- ***PLANMGMT bind option***
- Rebind distributed packages in ***separate collections***
- Using ***profile tables***

Use of the ***PLANMGMT bind option*** so that you can revert to a previous package copy if a regression occurs.

Rebind distributed packages in ***separate collections*** and switch the applications to using the new collections.

Using ***profile tables*** to control which Db2 for z/OS application compatibility levels to use for specific data server client applications

PLANMGMT [2 | 5]

- **EXTENDED**
- **BASIC**
- **OFF**

Leverage PLANMGMT extended

- Use REBIND SWITCH (PREVIOUS) to restore static SQL packages to prior runtime structures
- Use REBIND SWITCH (PREVIOUS) for dynamic SQL packages would restore prior APPLCOMPAT
- switching to prior collid for distributed dynamic would restore APPLCOMPAT

The PLANMGMT option retains, during a rebind operation, all relevant package information (such as metadata, query text, dependencies, authorizations, and access paths) in catalog tables and in the directory.

Separate Collections [3 | 5]

- Rebind distributed packages in *separate collections* and switch the applications to using the new collections.
- We can have two NULLID Collection , one of them has been bound by New APPLCOMPAT

The recommended best practice in Db2 12 is still to bind a separate set of 'NULLID' packages at the server at the corresponding APPLCOMPAT level for each new function level that you choose to adopt. (DBAs can bind copies of the driver packages by running job DSNTIJLC.) With this approach, existing applications that use the 'NULLID' packages can remain stable.

Profile Tables [4 | 5]

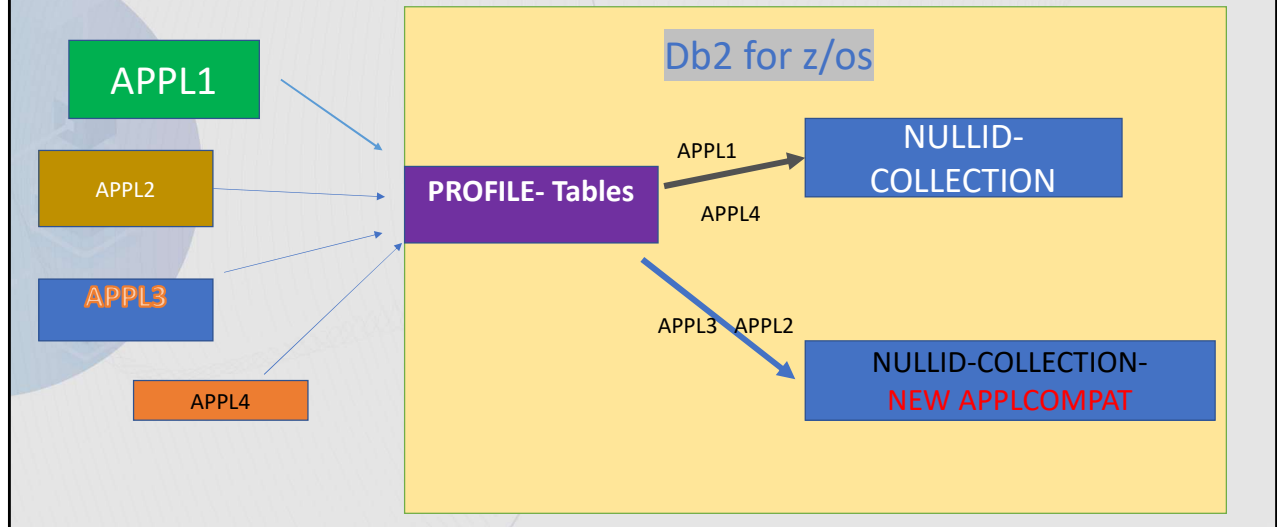
- Using ***profile tables to control*** which Db2 for z/OS application compatibility levels to use for specific data server client applications
- Profiles can be used to control which client applications use features that are associated with a specific Db2 for z/OS application compatibility level.
- Having two NULLID Collection , one of them is New APPLCOMAPT, So in profile tables we can manage specified client is using which NULLID Collection.

Profiles can be used to control which client applications use features that are associated with a specific Db2 for z/OS application compatibility level. This capability allows client applications that do not need to use new features to continue to connect to a Db2 for z/OS server at an earlier application compatibility level.

We can have two NULLID Collection , one of them has been bound by New APPLCOMAPT, So in profile tables we can manage specified client is using which NULLID Collection. In this way we can provide usage of both NULLID Collection for client based on their application requirements.

[Using profile tables to control which Db2 for z/OS application compatibility levels to use for specific data server client applications - IBM Documentation](#)

Separate Collections+ Profile Tables [5 | 5]

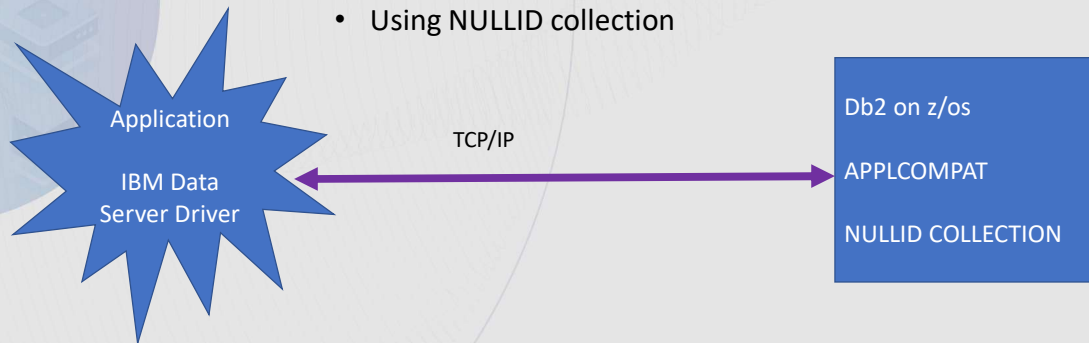


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IBM Data Server Driver[1 | 4]

- Applications accessing Db2 via the IBM Data Server Driver
- DRDA requester applications
- Using Distributed Data Facility, DDF
- Using NULLID collection



When ever an application is connecting to DB2 on Z/os , they are using TCP/IP. The collection would be NULLID.

Typically in the form of non-DBMS-specific interfaces such as JDBC and ODBC and ADO.NET, that target a Db2 for z/OS system to which the application has a TCP/IP connection.

IBM Data Server Driver[2 | 4]

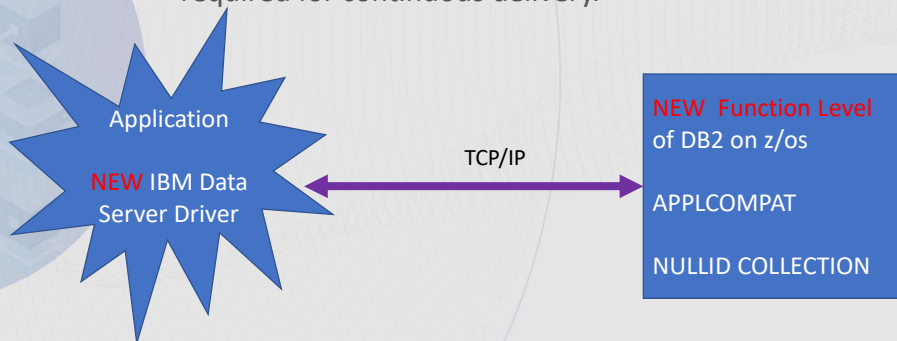
- JDBC driver (JCC) version corresponds with each DB2 for z/OS release

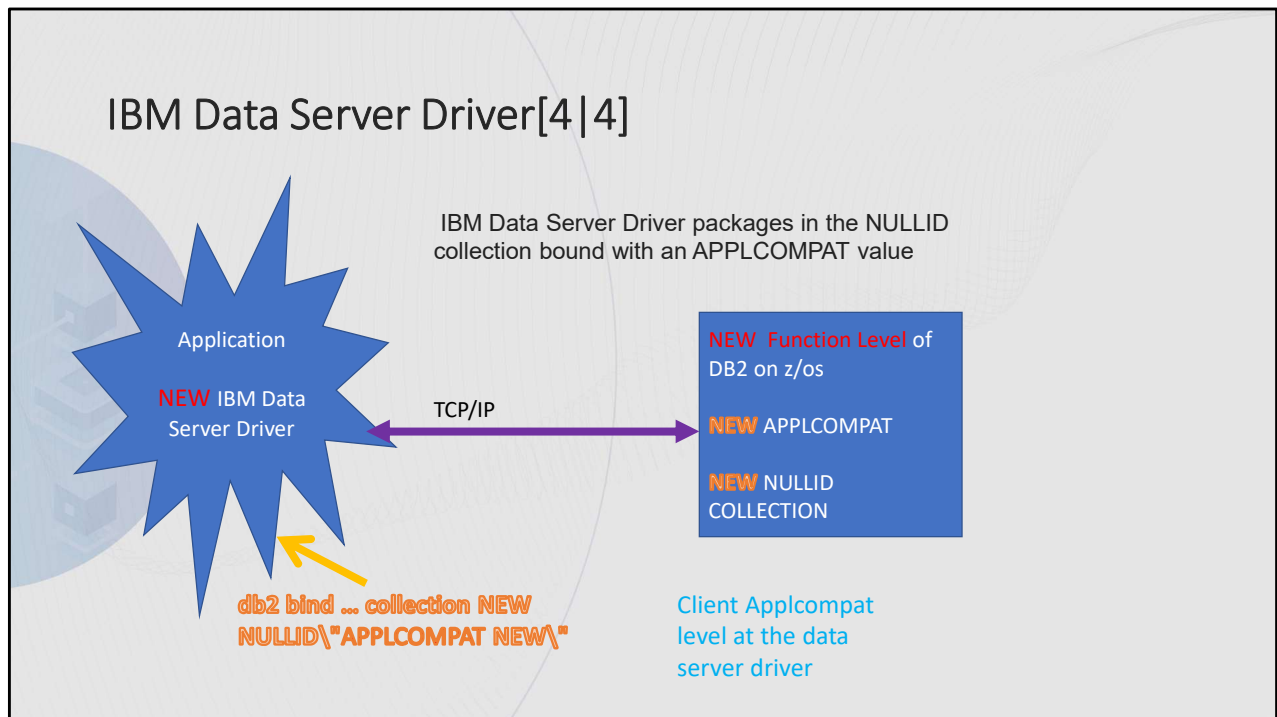
JCC T4 connectivity for Db2 z/OS		
Db2 for z/os	Minimum JCC4 Version	Maximum JCC4 Version
V11	4.17.28 (v10.5 FP2)	4.33.31
V12	4.23.42 (v11.1 M2 FP2)	4.33.31
V13	4.31.10 (v11.5 M7 FP0)	4.33.31

Which JDBC driver (JCC) version corresponds with each DB2 for z/OS release?

IBM Data Server Driver[3 | 4]

Data Server Driver, Data Server Client and DB2 Connect levels required for continuous delivery.





When ever an application is connecting to DB2 on Z/os , they are using TCP/IP. The collection would be NULLID.

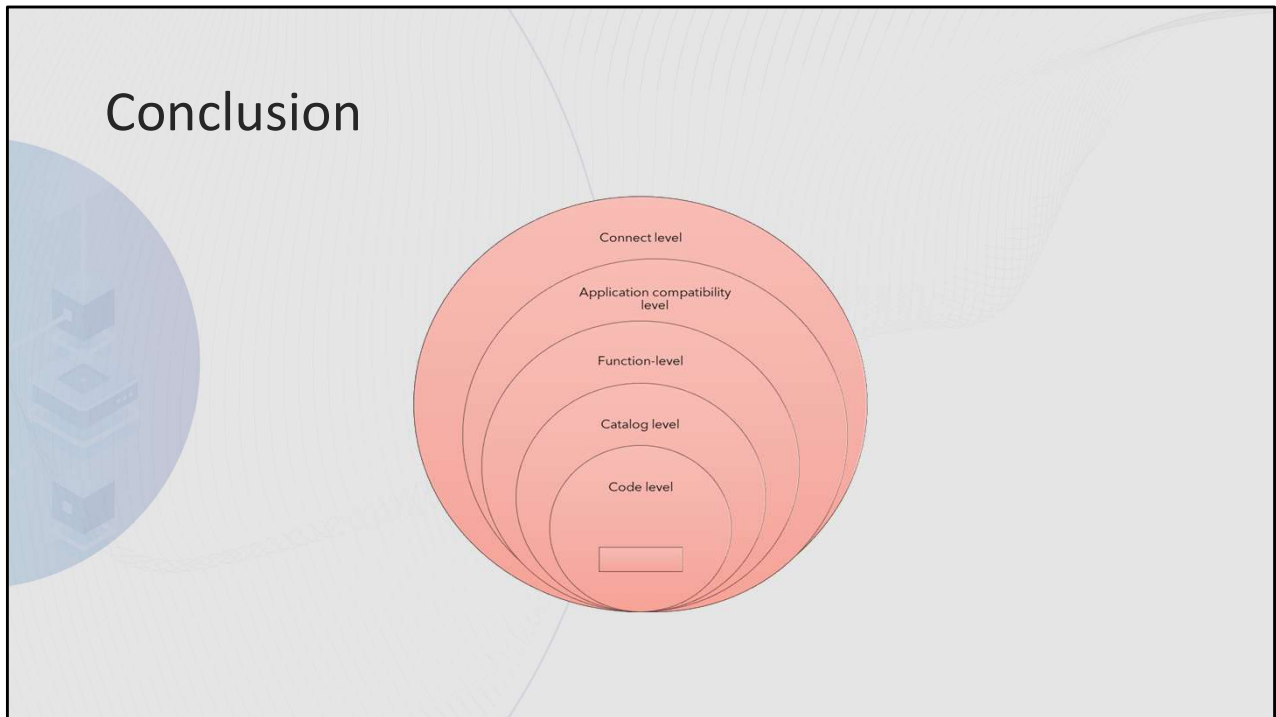
If application for any reason needs to use New feature of Db2 it needed to BIND Collection NULLID will New APPLCOMPAT.

So New IBM Data SERVER Driver is needed to give us chance to exploit NEW APPLCOMPAT.

The Data Server Driver packages belong, by default, to a collection called NULLID, and in that collection the packages have a certain APPLCOMPAT value. That APPLCOMPAT value determines the SQL functionality that is available to application programs that use the Data Server Driver packages in the NULLID collection

```
db2 bind '%DB2PATH%\bnd\@ddcsmvs.lst' blocking all
sqlerror continue \ grant public action replace
collection NULLID_NF \ generic \"APPLCOMPAT V12R1M501\"
```

Conclusion



Library management
Catalog level management
Activation management
Bind/rebind procedures

You can't execute the catmaint level to its certain level unless you have the supporting maintenance level is there

You can active function level up to the level that is supported by catalog level


Before going to a function level Just look into the incompatibilities ,make sur you understand what they are and make sure you handled them if necessary before going forward, because what you don't want will surprise you when going through this process

Resources

- [Overview of what's new in Db2 13 - IBM Documentation](#)
- <http://robertsdb2blog.blogspot.com/2021/04/db2-for-zos-dealing-with-application>
- <http://robertsdb2blog.blogspot.com/2019/06/db2-for-zos-talking-about-applcompat.htm>
- [SQL changes in Db2 13 - IBM Documentation](#)
- [VnnRnMnnn application compatibility levels - IBM Documentation](#)
- [VnnRnMnnn application compatibility levels for data server clients and drivers - IBM Documentation](#)
- [Db2 13 function levels - IBM Documentation](#)
- <https://www.ibm.com/docs/en/db2-for-zos/13?topic=acld-vnnrmnnn-application-compatibility>
- [Robert's Db2 blog: July 2019 \(robertsdb2blog.blogspot.com\)](#)
- <https://help.sap.com/docs/db2-for-zos/database-administration/db2-continuous-delivery>
- <https://www.ibm.com/docs/en/db2-for-zos/13?topic=13-catalog-changes>
- [Application compatibility levels in Db2 - IBM Documentation](#)
- [Managing application incompatibilities - IBM Documentation](#)
- [Using profile tables to control which Db2 for z/OS application compatibility levels to use for specific data server client applications - IBM Documentation](#)
- [DB2 JDBC Driver Versions and Downloads for Db2 z/OS. \(ibm.com\)](#)
- [SQL changes in Db2 13 - IBM Documentation](#)

Questions





The banner features a large blue circle on the left containing the IDUG logo and conference details. On the right, there is a smaller IDUG logo, the session title 'Db2 Level up', the speaker's name 'Leila Hosseini', her email 'Lshosaini@yahoo.com', the session code 'MODDEV1', and a call to action 'Please fill out your session evaluation!' accompanied by a pencil icon. Social media icons for X, Facebook, and LinkedIn are located in the bottom left corner.


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2024 NA Db2 Tech Conference

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Db2 Level up

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