



LATEST FROM THE LAB:
WHAT'S NEXT FOR Db2 11.5

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AGENDA

Db2 11.5 Basics

- Numbering
- Deployment Options

Db2 11.5 Overview

- Db2 Family
- 11.5 GA
- What's coming?

Back up - deep dives into some features.



Db2 11.5 BASICS

Db2 11.5: WHAT'S UP WITH THE NUMBERING?

Db2 11.5 follows a continuous delivery model (same as 11.1)

If a delivery vehicle has:

- new function -- will increment Mod level (same as 11.1)
 - But it will also reset the FP level to 0 (*NEW*)

→ 11.5.M.0
- ONLY fixes -- will increment just the FP level (same as 11.1)
 - This addresses the issue where 11.1 “ifixes” were not easily distinguishable from the base mod pack nor other ifixes off the same mod pack.

→ 11.5.M.1 and higher

Db2 11.5: HOW CAN I INSTALL DB2?

Db2 family has 2 deployment (install) options:

- 1) containerized
- 2) multi-platform install

CONTAINERIZED INSTALLS:

RHOS based container.

Supports single node and DPF (MPP); does not yet support pureScale.

Ships ~every 2-3 months (subject to change).

Currently always has new function*, so are mod packs.

- 11.5.1.0 , 11.5.2.0, 11.5.3.0 are already available
- these levels are also used to sync the Db2 Family

* This could change once there is a new continuous development release (no planned date).

Db2 11.5 MULTI-PLATFORM INSTALLS:

Supports all Db2 platforms: Linux (Intel,Power,Z), AIX and Windows

Supports all Db2 configurations: single node, DPF, and pureScale

Mod packs generally ship 6-12 months apart.

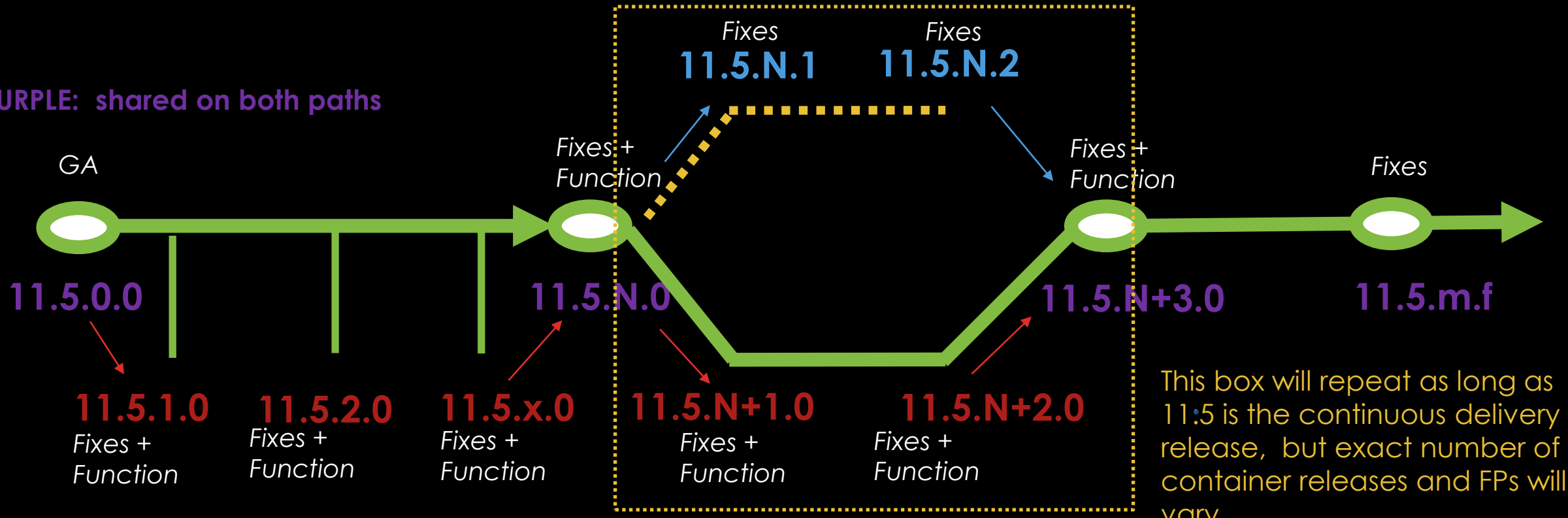
Between mod packs, there may be “fix-only” fix packs. These are similar to the concept of 11.1 ifixes but 2 differences:

1. Will contain all APARs not just a subset
2. Will bump up the FP field of the version. (Easy to recognize!)

THE Db2 11.5 LIFECYCLE

BLUE - Multi-platform install path -- mod packs and fix packs

PURPLE: shared on both paths



This box will repeat as long as 11.5 is the continuous delivery release, but exact number of container releases and FPs will vary.

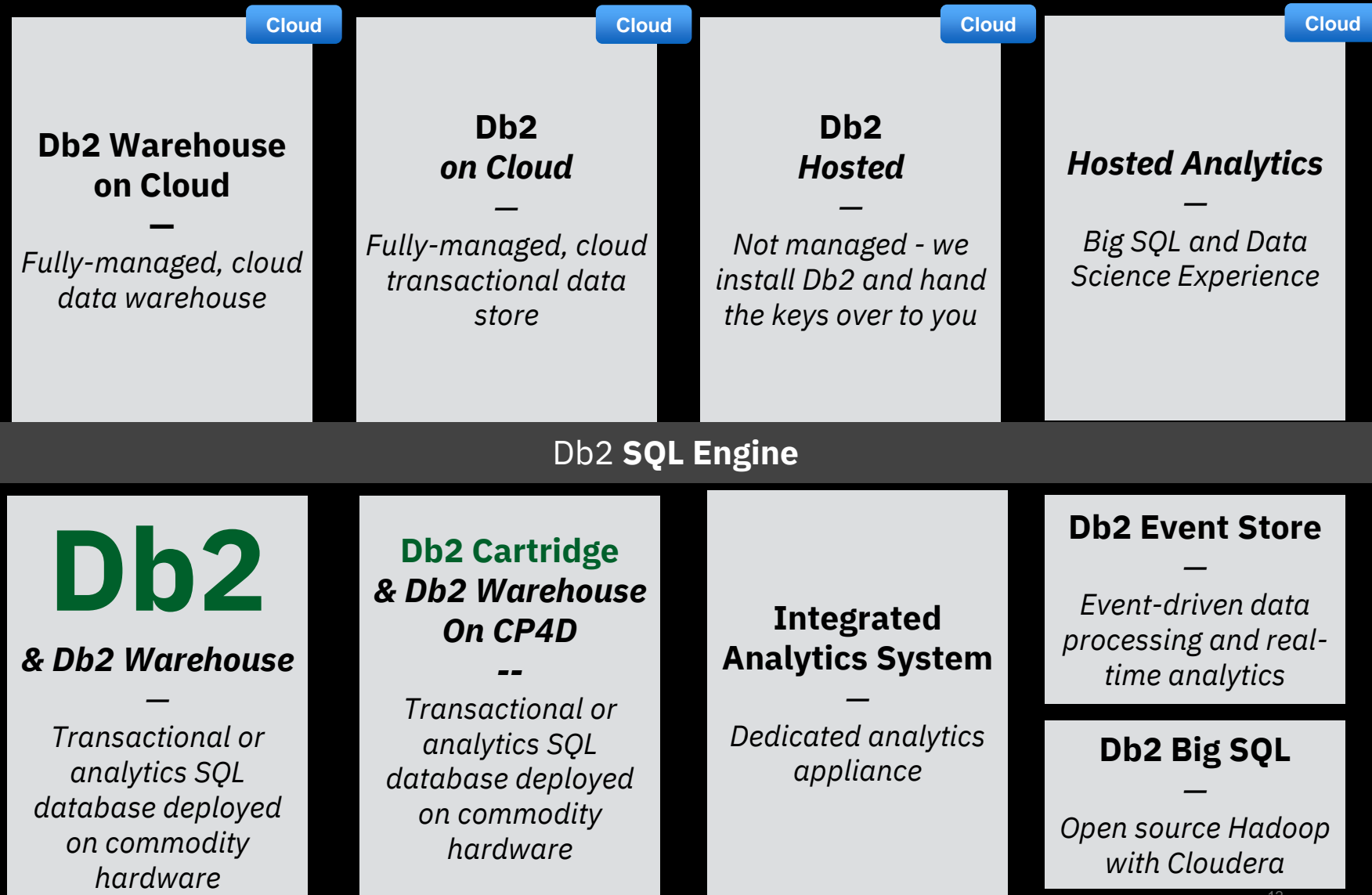
RED - Containerized Install Path -- always* mod packs!



Db2 11.5 OVERVIEW

Our family of **Hybrid Data Management** solutions built on the **Db2 Common SQL Engine**

*Write your SQL once
deploy against any
form factor
run anywhere*



Db2 11.5 GA Highlights



Cognitive and Emerging

- ML Optimizer Tech Preview
- Federation support for Block Chain Tech Preview



Hybrid & Multi-cloud

Docker container



Application Development

- Net core 2.2 support
- GO language Driver
- IDE for Visual Studio Code – a db2 extension
- Augmented Data Explored (ADE) beta



BLU Enhancements

- Next Gen Bulk Insert for columnar tables
 - Vectorized Insert (and Update)
 - Reduced UNDO logging
- Update+Delete performance enhancements
- Automatic Dictionary Creation (ADC)
- Automatic REORG RECOMPRESS (compression of uncompressed data used to build dictionary)
- Vectorized ADC
- Support for LOB data type in columnar tables
- Numerous improvements to columnar query performance.

Db2 11.5 GA Highlights

Availability

- Advanced Log Space Management Tech Preview
- Parallel Logging when using Mirrored Logs

pureScale

- pureScale Improved Cluster-wide free space management
- pureScale host-based firewall support
- Automate setup for public Ethernet monitoring
- pureScale increase ports, XI connection and worker limits
- pureScale OLIC and extent reclaim on by default
- Currently Committed across pureScale members
- pureScale 2x faster LOAD w/ Range Partitioned Tables

Core Engine

- External Table Support
- 4k Sector Support
- Auto Column Group Stats (CGS)
- Numerous additional monitor elements
- DROP/CREATE TABLE [IF EXISTS]
- Create Table As (CTAS) enhancements
- DBMS_APPLICATION_INFO and UTL_RAW package support (Oracle Compat)
- PLSQL Enhancements
- WLM:
 - Simplified thresholds
 - Cascaded drop service class

Db2 11.5 1H Roadmap Highlights



Graph database

Graph database + Relational database in one store.

Tech preview for 11.5.4

Overlay a graph on top of Db2 data, and query Db2 via Gremlin language.



Hybrid & Multi-cloud

Db2 container for Red Hat OpenShift



Application Development

- Drivers and NoSQL wire listener updates
- Db2 REST APIs
- Python UDFs
- Programming language updates:
 - .Net 2.2,
 - .Net drivers for MS Azure,
 - Node JS v12,
 - Ruby/Rails latest,
 - Django 2.0



BLU & MPP Enhancements

- Automatic INDOUBT Resolution for DPF
- Adaptive workload management for WORKLOAD=ANALYTICS
 - Session priorities
 - CPU Controls
- Columnar Trickle Insert
- Columnar Page based VARCHAR compression
- Delayed synopsis table population
- Query Perf (early aggregation, early distinct, full outer join, join residual predicate support, NULL=NULL)
- Memory Stability (e.g COMPACT VARCHAR, Full Outer Join)
- Truncate Table -- rollback support
- COUNT DISTINCT OLAP
- RID Scaler Function for Columnar/DPF
- Alter Table add column support for LOB

Db2 11.5 1H Roadmap Highlights



Availability

- Automated HADR with Pacemaker for RHEL- Tech Preview
- *pureScale support for Power9 native
- Advanced Log Space Management
- *Faster pureScale online modpack& fixpack update
- Ability to block reorg pending operations through registry variable
- New column in MON_GET_HADR HADR_LAST_TAKEOVER_TIME



Core Engine

- Optimizer Version Control
- Faster Database Activation
- Skipped locked Data For Queries
- Nested WITH support
- ALIAS support in WHERE clause
- Faster Index Splitting at non-leaf levels under high contention
- UTL_RAW, DBMS_LOCK, DBMS_STAT package support (Oracle Compat)



Security

- SSO with JWT Token
- Authentication Caching
- Security-Enhanced (SE) Linux support on RHEL 7 & 8
- Allow SSL_SVR_LABEL to be changed online



Cognitive and Emerging

- ML Optimizer - Tech Preview 2
- In Database Analytic functions
- Spatial Analytics
- Federation:
 - Parallelism
 - Numerous JDBC connectors

Operating System Support Matrix For DB2 11.5 Server non-pureScale



Distro	OS	Db2 11.5 GA	New Additions	New min levels
AIX	AIX P7, P8, P9	AIX 7.1TL5SP3 AIX 7.2TL3SP2		AIX 7.2TL3SP3
RHEL	- X86-64 - Linux390 - PPCLE	RHEL 7.5	RHEL 8.1 w/ p9 native	RHEL 7.6 RHEL 8.1 w/ p9 native
SLES	- X86-64 - Linux390 - PPCLE	SLES 12 SP3	SLES 15 SP1 (no Automated HA)	SLES12 SP4 SLES 15 SP1 (no Automated HA)
Ubuntu	- X86-64 - Linux390 - PPCLE	Ubuntu 16.04 LTS		Ubuntu 16.04 LTS
CentOS	- X86-64	7.5		7.7
Windows	Windows	Windows 2012R2 Windows 2016 Windows 10	Windows 2019	Windows 2012R2 Windows 2016 Windows 10 Windows 2019
MAC OS	** DSDRIVER ONLY	10.10 Yosemite	10.15 Catalina	10.15 Catalina

All 32-bit Z-linux clients will no longer be built.

List is minimum level. For non--pureScale all minor levels after are supported by default (ie. 7.5 means also 7.6 support but not 8.x support)

For PPCLE:

- RHEL 7.5 (and above) is support on Power 9 but only in p8 compat mode
- Db2 does not support use of alternate kernels

WANT TO KNOW MORE DETAIL ?

Things can (and do) change. So to keep up-to-date:

- We revisit development priorities frequently (e.g. every quarter) in response to customer and market demand/feedback
- Public roadmap:
<http://ibm.biz/AnalyticsRoadmaps>
- We want to hear from you!
 - <http://ibm.biz/IBMAalyticsIdeasPortal>
- Listen to my Data View Show replay from April 30th
- Listen to Piotr Mierzejewski's Db2 Night Show replay from May 1st

CREDITS

Everyone on the Db2 team, and all the Db2 family teams that contribute back to the core Db2 Common SQL Engine.

But especially the folks who I “borrowed” slides from to make this presentation!

THANKS!



Q&A