CDDC for Db2 z/OS

Is a pipeline to support fully automated testing of the new Db2 agile delivery

BIF/ICI Detection

Checks incompatibilities on

- FUNCTION LEVEL

Uses execution counts and top 10 lists (BIF/ICI ↔ SQL Text)

Access Path PreCheck

Predicts impact on application performance before any degradation is done from

- FUNCTION LEVEL
- CATALOG LEVEL

Checks static and dyn. SQL and supports virtualization

Instant Cloning

Creates quality environments from a production clone

- Clones entire subsystems or just the data
- Refreshes and merges clones
- Uses XML controlled processing flow with user exits
  - For all parameters
  - For external event triggering

Workload Capture/Replay

Capture the entire workload incl. DCL, DDL, commands…

Automatically executes full sets of workload

Generates reports of KPI comparisons for

- FUNCTION LEVEL
- CATALOG LEVEL
- CODE LEVEL

CDDC for Db2 z/OS
Continuous Delivery Deployment Check

From Traditional to Continuous Delivery And Cruising within CD

As we know, IBM have abandoned the traditional way of release delivery every three years. New functions, preventative service and prescriptive service may or may not be shipped in the same stream and the intention is to do so also in the core components of Db2 and not only to the periphery of Db2.

Customers can limit and control the amount of change and its speed by using Function Levels and the extension to APPLCOMPAT.

IBM wants to reduce and overcome the disadvantages of traditional delivery which, for some customers, are:

> Time consuming and costly adoption of a new and stable release every three years. Therefore most customers have a, more or less, four year cycle or ask for a skip level release.

> Fundamental changes (UNICODE, 64 Bit, UTS etc.) even slow down the migration process.

> Customers ask for functions that are either in development or has been delivered in a new release. This results in retrofits which slow down the process of developing new functions by the labs.

To overcome these complex issues and master the balance between delivering new functions to the customers and keeping product code stability IBM announced its intention to go to CD (Continuous Delivery). CD is described as the natural progress of Agile Development and Continuous Integration.

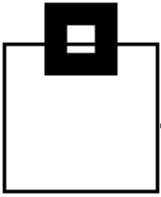It reduces the adoption time because

- only applications that need new functions are enabled by sponsor users
- increases the probability that the code already has the function
- is already installed before activation is needed for a certain app.

And also diminish the time CD passengers have to spend for continuously migrating to new releases of Db2; and enlarges the time frame for stable systems.
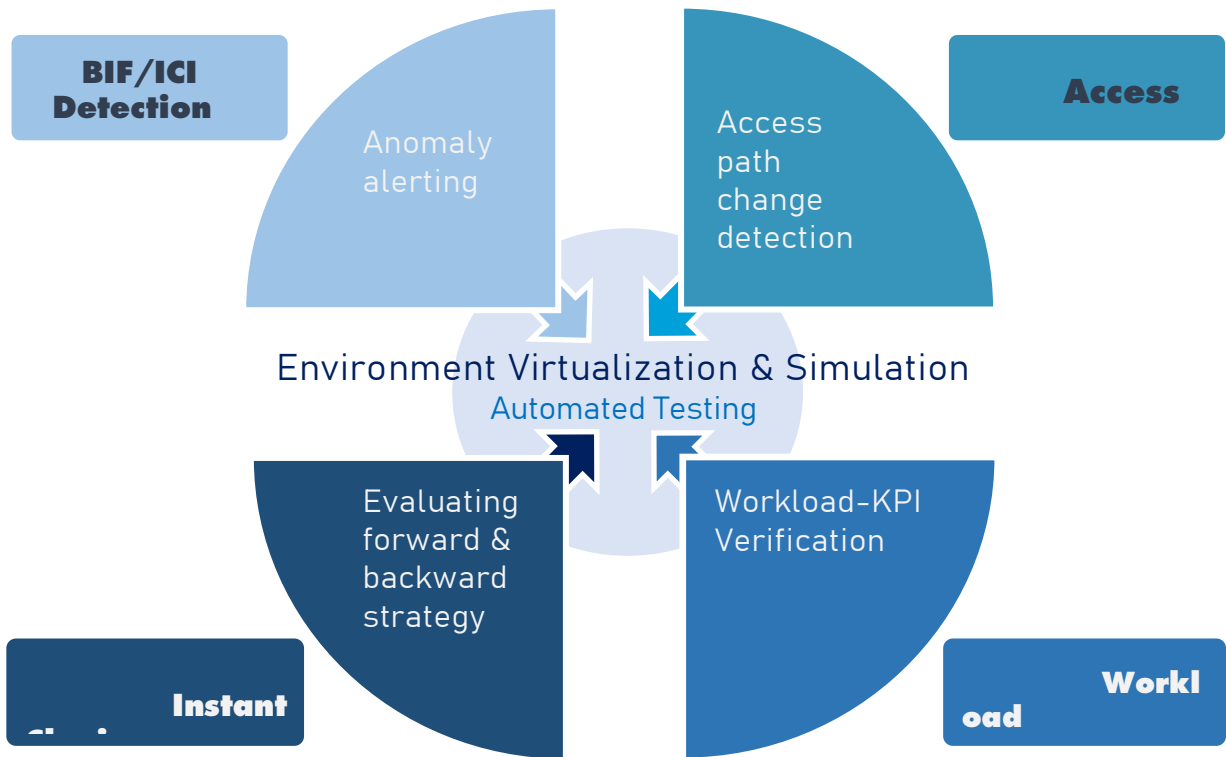
Align Continuous Delivery (CD) to your Continuous Availability with four levels of testing

CDDC for Db2 z/OS supports four different levels of testing and a new way of automation. CD-Screening allows you to pick and choose from KPI based test automation. The levels include simple anomaly alerting, access path verification, clone Pre-apply and even workload capture/replay to easily discover any different behaviour resulting from a new CODE, CATALOG or FUNCTION LEVEL.

- Anomaly alerting based on Incompatibility Change Indicators (ICIs)
- Dyn./Stat. Access Path Change Detection e.g. via Plan Management
- Clone based code change pre-apply exploiting Backup System
- Workload-KPI verification using SQL replay and KPI comparison

Automated testing & virtualizing in four levels insures reliable quality insurance

BIF/ICI Detection

Anomaly alerting

Access path change detection

Access

Environment Virtualization & Simulation
Automated Testing

Evaluating forward & backward strategy

Workload–KPI Verification

Instant

Workload

All results are automatically analyzed to generate multi-level reports

Fully automates the process of setting up a production clone for testing

- Exploiting non-disruptive, resource friendly flashcopies
- Simulating CPU and storage by virtualization technology
- Comprehensive process, including routing, FTP, operating commands
- Dynamically supports a variety of source (production systems) with a single one time setup
- Fully flexible in regards of customization via XML scenario scripts

Capture/Replay covers the entire production workload and include

- Inconsistency checks
- Access path comparison
- SQL workload result verification
- Resource monitoring

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