Rocket® Mainstar Volume Clone & Rename for DB2

Expedite and Automate DB2 for z/OS

Clone DB2 sub-systems in minutes not days

Eliminate database downtime and promote high availability

Reduce costs using fewer technical and personnel resources

Create and rename copied production data at destination automatically

Reduces errors by eliminating tedious manual tasks

Perform DB2 system clone operations from a system-level backup

Rocket Mainstar® Volume Clone and Rename for DB2 (VCR) is a storage-aware DB2 system cloning solution that uses fast-replication facilities to clone DB2 systems quickly and in a non-disruptive manner.

DB2—Always Up

DB2 for z/OS is the foundational database for many enterprise applications that manage today's business processes. Its performance, scalability and high-availability features provide the data management support required for 24x7 availability requirements. DB2 systems require special consideration when planning and implementing system cloning and data refresh strategies. In addition, fast, non-intrusive DB2 system cloning and data refresh solutions are required to enable high availability for these critical database-management systems.

With the latest version of VCR, the fear of DB2 downtime can be eliminated. VCR has the functionality to simultaneously clone data from the production system while creating and renaming a copy at a new destination. No more disruptions for your business-critical applications.

Storage-Based, Fast Replication

VCR facilitates the cloning of DB2 systems quickly and effectively by using storage-based fast-replication facilities to copy data without using host CPU and I/O resources. It performs storage-volume metadata, DB2 metadata, and data-set rename operations so that the cloned DB2 system can be used on the same or a shared system. A DB2 system clone can be

used to improve production performance by offloading business and "read-only" processing from production systems. VCR can copy DB2, SAP, and PeopleSoft interrelated data to create test, development, and quality assurance environments. Cloned DB2 systems can also be used to stage data-warehouse loads and to create test maintenance environments that aid problem determination by validating maintenance procedures and system integrity before they are applied to production.

DB2

DB2 clone

database system and storage coordination

source database volumes

clone database volumes

Rocket.

Clone. Test. Refresh. Done.

Special Features for Tables and Index Spaces

VCR's selectable feature, Fast Table Space Refresh for DB2 (FTR), uses the same storage-based, fast-replication facilities but for the DB2 table and index space refresh. FTR validates table space compatibility and performs automatic object ID translation from source to target, and availability is maximized using LOG APPLY technology to provide a consistent copy of the source data without restricting access to the object. FTR also provides Data Definition Language (DLL) support to ensure that objects are created at the target, reducing the need for manual intervention. In addition, data masking allows the DBA to prevent sensitive production data from being exposed. FTR can be used to refresh precisely what is needed when a full DB2 system clone is not required.

Production DB2 Source   **Target DB2**

DB2

DB2 clone

source database volumes

clone database volumes
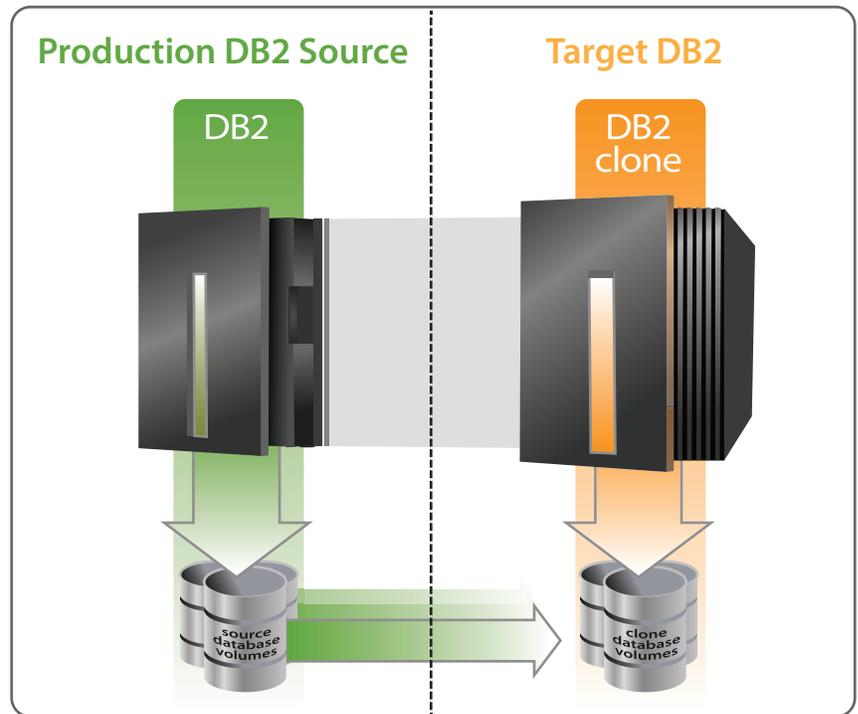
Storage Volume Metadata Cloning Steps

Production DB2 Source

1. DB2 volume selection

2. A. SET LOG LOAD(0)
       SET LOG SUSPEND
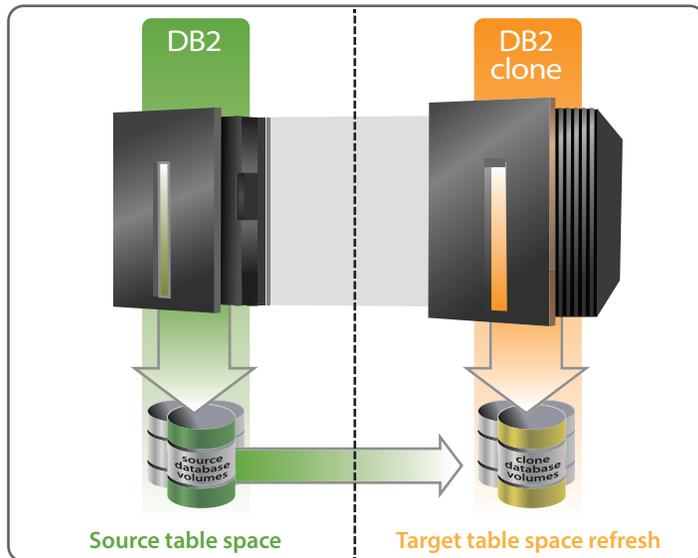   B. Consistency Group

3. Volume copy

4. SET LOG RESUME if 2A

Target DB2

5. Rename

6. Update DB2 directory and BSDSs

7. Start DB2 in maintenance mode for metadata management

8. Correct DB2 catalog and directory page spaces

9. Update DB2 catalog

10. Correct application page spaces

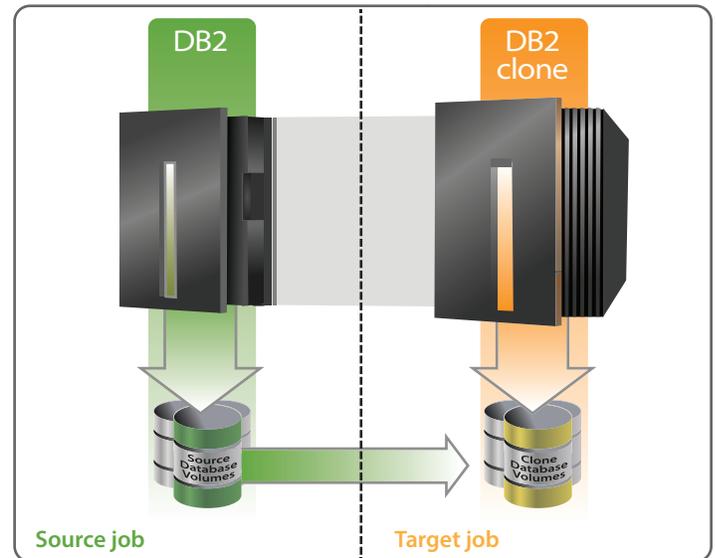11. Stop target in maintenance mode

12. Start DB2 clone in normal mode

High Level Features/Benefits

Storage-Aware	❖ Speeds up the data-copy processes and reduces CPU and I/O costs.
Copy Blades	❖ Provides flexibility in data copy methods. Supports all storage vendor hardware and fast-replication methods.
ISPF Interface	❖ Easy-to-use interface simplifies DB2 system cloning and data refresh operations for improved productivity.
DB2 System Cloning Automation	❖ Fast DB2 system cloning operations promote high availability and significantly reduce downtime and processing costs.
Flexible Volume Copy Options	❖ Simplifies storage volume identification and management used in the DB2 system cloning process.
Automatic Volume Pairing	❖ Simplifies fast-replication management usage and increases productivity.
Fast Rename Process	❖ Allows data to be cloned on the same or different LPAR with shared disk.
DB2 Meta-Data Support	❖ Improves productivity, speeds the cloning process, and reduces errors.
DB2 Data Sharing Support	❖ Simplifies DB2 system clone creation and management, regardless of data-sharing status.
Stored Procedure	❖ Provides versatility and process controls.
Table and Index Space Refresh Automation	❖ Fast data refresh operations promote high availability and significantly reduce downtime and processing costs.
Table Space Selection	❖ Simplifies table and index space selection and copy exactly as needed.
LISTDEF-Like Interface	❖ Increases productivity.
DDL Generation	❖ Allows the automatic creation of missing objects on the target.
Object Translation	❖ Automates DB2 object ID translation to simplify refresh operations and eliminate manual efforts.
Log Apply	❖ Maximizes availability by providing a consistent, non-disruptive copy of the source object.
Flexible Data Refresh Options	❖ Provides flexible copy options for refreshing data.
Data Masking	❖ Provides data security anonymity. Examples of field changes include social security and credit card numbers, names, and addresses.

Refresh DB2 table and index spaces using FTR table and index space refresh automation

DB2		DB2 clone

source database volumes → clone database volumes

Source table space | **Target table space refresh**

Refresh DB2 table and index spaces refresh steps

DB2		DB2 clone

Source Database Volumes → Clone Database Volumes

Source job | **Target job**

1 LISTDEF selection

2 Verify object compatibility

3 Create target DB2 DDL and table and index spaces if they don't exist

4 Stop table space or fuzzy copy

5 Perform copy process

6 Start, if stopped

7 Object ID translation, data masking and log apply

8 Update identity columns

9 Start target table and index spaces

System Requirements

z/OS 1.11 or Later

On z/OS 1.12 systems, the following restrictions apply:

❖ A source or target ICF catalog cannot be defined with extended addressability or EATTR(OPT)

❖ The VVDS on the volume where a source or target ICF catalog resides cannot be defined with EATTR(OPT)

DB2 Version 9.1, or DB2 10

Any Available New PTFs

One or More of the Supported Cloning Tools Listed in the VCR User Guide, or Slow Copy Utilities, Such as DFSMSdss Copy or Innovation Data Processing Products

> **Note:** Only the DB2 Version 9.1 and DB2 10 administrative task schedulers are supported. For DB2 Version 9.1, APAR/PTF PM02658/UK60388 must be applied.
>
> The DB2 Version 8 administrative task scheduler is not supported.

When Using IBM FlashCopy®, Version 2 is Required

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