

DB2 V10.5 BLU学习系列-02. 列式存储表

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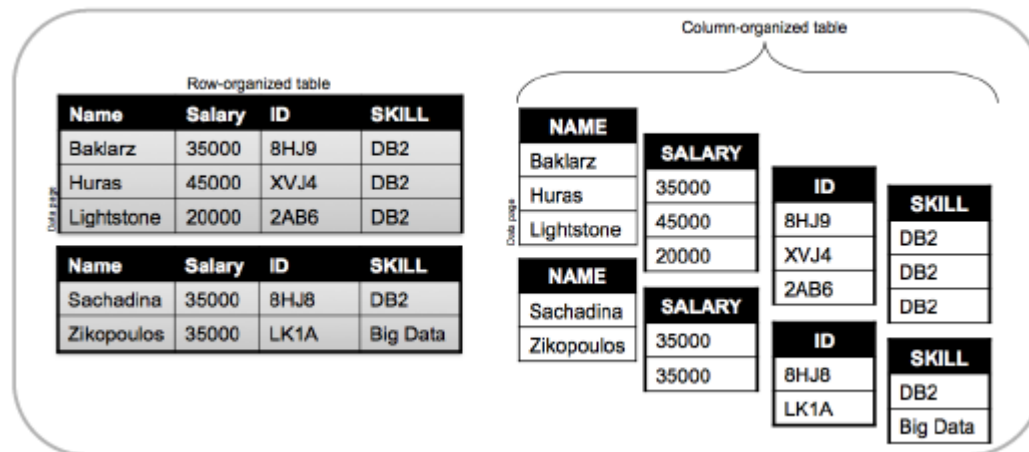
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什么是列式存储表

传统数据是以行式存在表中，而列式存储表是以列的形式代替了行存储数据

一个页保存的是一个列的数据

全部列都存储在DB2 自动存储空间中，缓存在buffer中，并且行和列混合使用资源



LOAD的输入数据依旧是行格式（如csv文件etc.）

John Piconne	47	18 Main Street	Springfield	MA	01111
Susan Nakagawa	32	455 N. 1 st St.	San Jose	CA	95113
Sam Gerstner	55	911 Elm St.	Toledo	OH	43601
Chou Zhang	22	300 Grand Ave	Los Angeles	CA	90047
Mike Hernandez	43	404 Escuela St.	Los Angeles	CA	90033
Pamela Funk	29	166 Elk Road #47	Beaverton	OR	97075
Rick Washington	78	5661 Bloom St.	Raleigh	NC	27605
Ernesto Fry	35	8883 Longhorn Dr.	Tucson	AZ	85701
Whitney Samuels	80	14 California Blvd.	Pasadena	CA	91117
Carol Whitehead	61	1114 Apple Lane	Cupertino	CA	95014

存储形式如下

TSN = Tuple Sequence Number

0	John Piconne	47	18 Main Street	Springfield	MA	01111	
1	Susan Nakagawa	32	455 N. 1 st St.	San Jose	CA	95113	
2	Sam Gerstner	55	911 Elm St.	Toledo	OH	43601	
3	Chou Zhang	22	300 Grand Ave	Los Angeles	CA	90047	← page
4	Mike Hernandez	43	404 Escuela St.	Los Angeles	CA	90033	
5	Pamela Funk	29	166 Elk Road #47	Beaverton	OR	97075	
6	Rick Washington	78	5661 Bloom St.	Raleigh	NC	27605	
7	Ernesto Fry	35	8883 Longhorn Dr.	Tucson	AZ	85701	
8	Whitney Samuels	80	14 California Blvd.	Pasadena	CA	91117	
9	Carol Whitehead	61	1114 Apple Lane	Cupertino	CA	95014	
10							
11							← page
...							

TSN: 元组序列号? 类似逻辑行logical Row IDs

BLU的数据都是以单列存储的，又怎么能保证对于数据多列的读取的呢。

DB2将一组列组成的单元给了一个唯一的序列号叫TSN，由TSNList组成了一个逻辑的行。每个页有一个TSN map。所以行表里的RID() 这些方法在列表里是不支持的。对于取局部列数据的应用，比如之前100列中读取 1 列，这里只要把列所在的数据页加载过来就行，不需要加在其他无关列的数据。

相关命令的比较

DB2 10.1 commands	DB2 10.5
CREATE DATABASE command	Same
CREATE BUFFERPOOL statement	Same
CREATE TABLESPACE statement	Same
CREATE TABLE statement	Syntax is unchanged; In DB2 10.5, can explicitly use the ORGANIZE BY COLUMN/ROW clause for BLU Acceleration
LOAD command for each table	Same
CREATE INDEX statement	Not required
Define constraints	Same (PK, UNIQUE constraints, and non-enforced FK are supported)
Define or refresh MQTs	Not required, because performance is already optimized
RUNSTATS command on all tables and MQTs	Not required for initial load, because table RUNSTATS operations are performed as part of the data load process, and MQTs are not created; Good practice to do RUNSTATS as data changes
Create statistical views and invoke the RUNSTATS command against those views	Not required because performance is already optimized