Session Abstract

B19   **DB2 OLAP: Partitioning 101**
Dave Collins, Senior Consultant/Instructor, ThinkFast Consulting

DB2 OLAP has an incredibly powerful and extremely useful partitioning option. It allows one to create DB2 OLAP cube connectivity, cube drill-through, and consolidation optimization. In this session, you will learn the DB2 OLAP Partitioning basics and several design "Best Practices".

B19

DB2 OLAP: Partitioning 101

Dave Collins, ThinkFast Consulting

IBM Data Management Technical Conference

Anaheim, CA   **Sept 9 - 13, 2002**

Presentation Agenda

✓ Introduction to ThinkFast

✓ Partitioning Terminology

 – Definition

 – Terminology

 – Stand-alone Model vs. Distributed OLAP

 – Source and Target

✓ Understanding Partition Types

 – Replicated

 – Transparent

 – Linked

✓ Q & A… Whenever You Like!

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   – 60% of New Business from Client Base

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ThinkFast Client Sampler

The Inc. 500 List - 2001

Inc 500

2001 Ranking of the Fastest-Growing Private Companies in America.

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48. LexJet, Sarasota, FL

49.ThinkFast Consulting,Inc. Chicago, IL

50. CLT Meetings International, Orlando, FL

51. Apex Systems, Richmond, VA

52. Cargo Express, Yardley, PA

Source: Inc Magazine October 30, 2001

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…it's what we do

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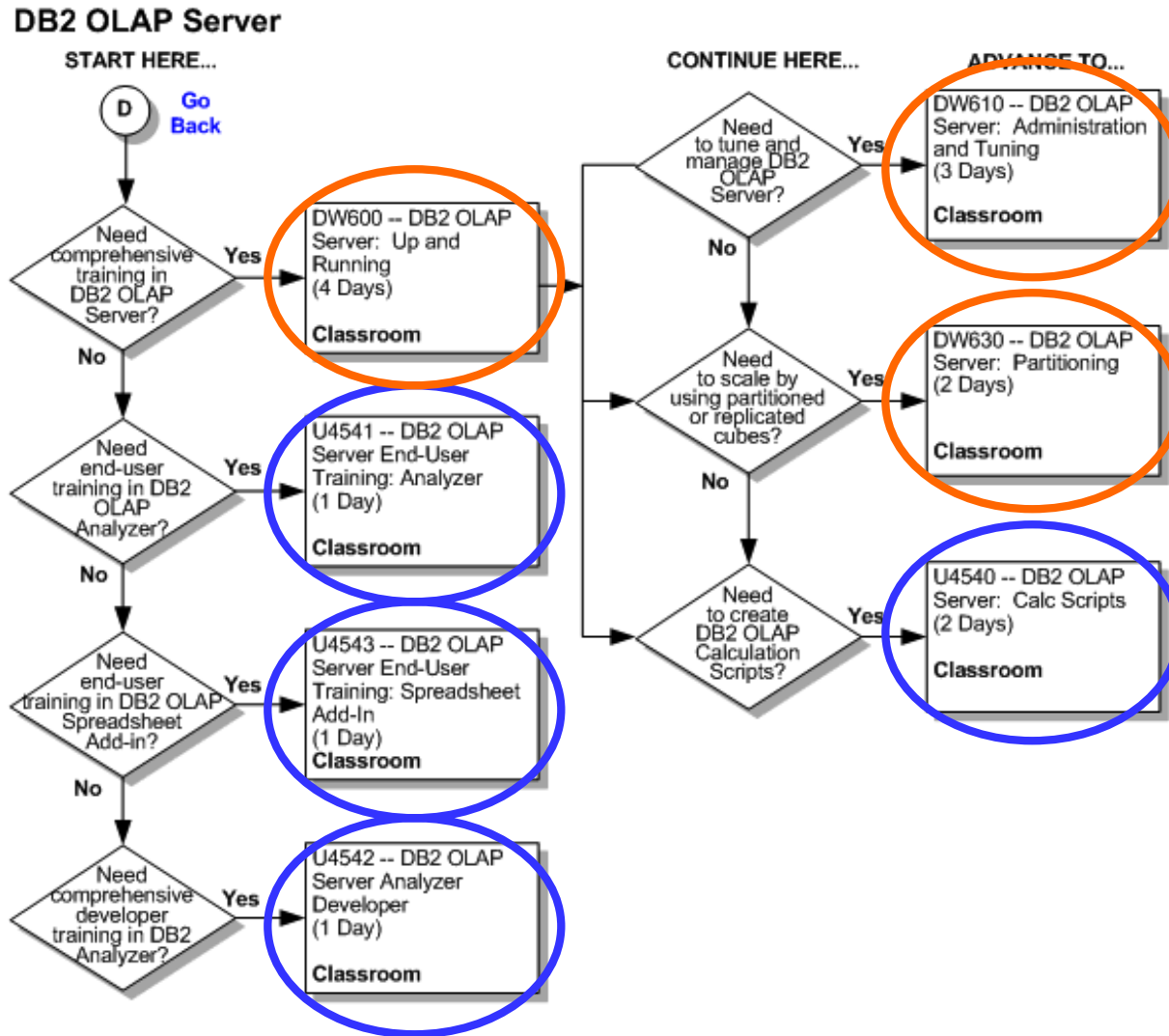
Nigel Rayner, Gartner
February 2002

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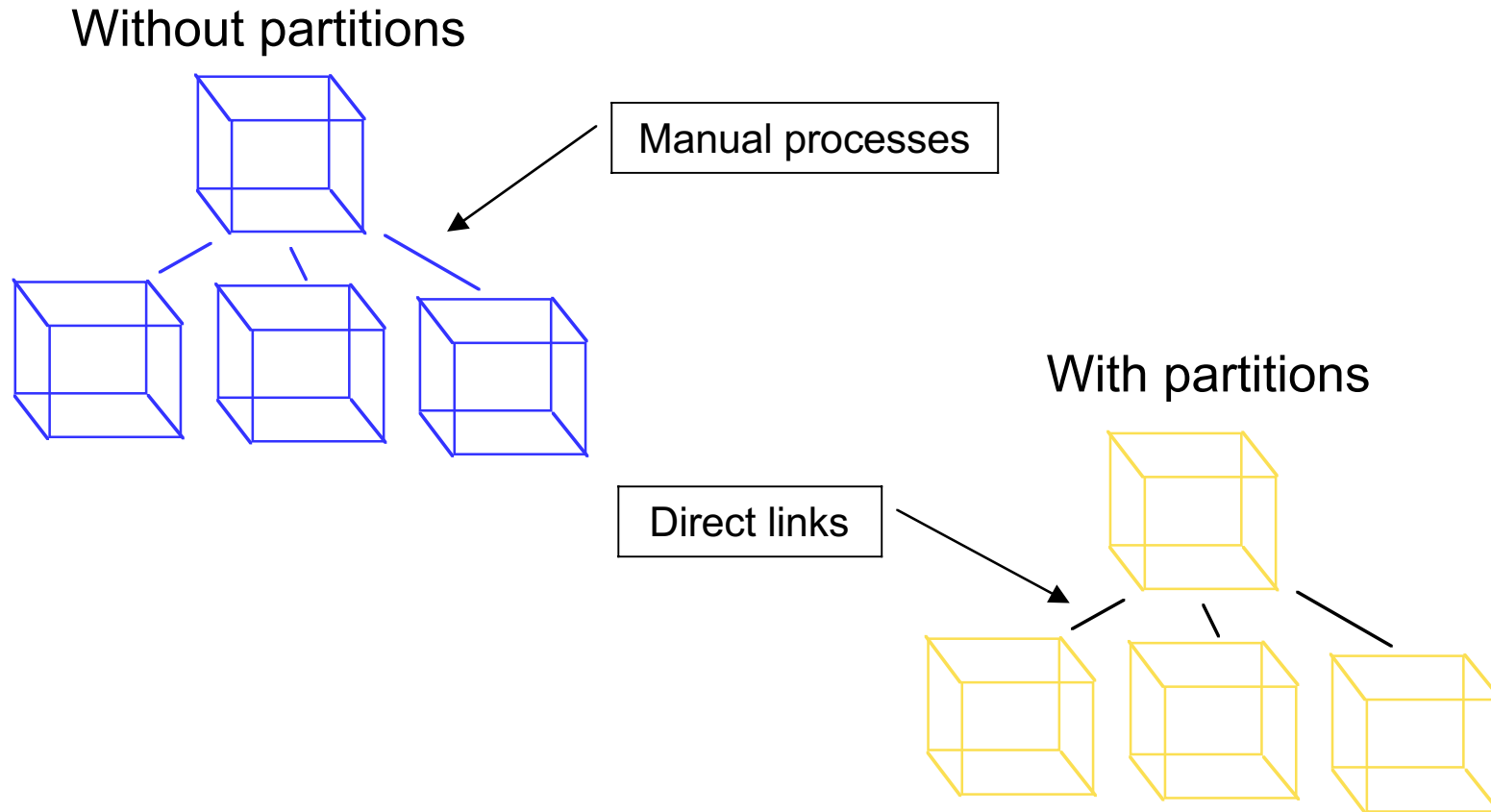
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DB2 OLAP Server

START HERE...

D — Go Back

Need comprehensive training in DB2 OLAP Server? — Yes — DW600 -- DB2 OLAP Server: Up and Running (4 Days) — Classroom

No

Need end-user training in DB2 OLAP Analyzer? — Yes — U4541 -- DB2 OLAP Server End-User Training: Analyzer (1 Day) — Classroom

No

Need end-user training in DB2 OLAP Spreadsheet Add-in? — Yes — U4543 -- DB2 OLAP Server End-User Training: Spreadsheet Add-In (1 Day) — Classroom

No

Need comprehensive developer training in DB2 Analyzer? — Yes — U4542 -- DB2 OLAP Server Analyzer Developer (1 Day) — Classroom

CONTINUE HERE...   ADVANCE TO...

Need to tune and manage DB2 OLAP Server? — Yes — DW610 -- DB2 OLAP Server: Administration and Tuning (3 Days) — Classroom

No

Need to scale by using partitioned or replicated cubes? — Yes — DW630 -- DB2 OLAP Server: Partitioning (2 Days) — Classroom

No

Need to create DB2 OLAP Calculation Scripts? — Yes — U4540 -- DB2 OLAP Server: Calc Scripts (2 Days) — Classroom

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Presentation Agenda

✓ Introduction to ThinkFast

✓ Partitioning Terminology

- – Introduction
- – Definition & Terminology
- – Stand-alone Model vs. Distributed OLAP
- – Source and Target

✓ Understanding Partition Types

- – Replicated
- – Transparent
- – Linked

✓ Q & A... Whenever You Like!

Why Partition?

Without partitions

Manual processes

With partitions

Direct links

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Benefits of Partitioning

✓ Organizational Demands

– Departmental or Geographic

✓ View detail and aggregate data

– Split Single Cube to Multiple... Allows Autonomy

✓ Add New Models Rapidly

– Synchronization

✓ Pre-Essbase v6.5 (DB2 OLAP 8.1)

– Improved Use of Resources

• Spread of Users over Multiple Servers

– Reduced Calculation Window

• Parallel Calculation

– Increased Reliability and Availability

• "Fault Tolerance"

Fundamentals of Partitioning

- ✓ Definition
- ✓ Components
- ✓ Terminology
- ✓ Stand-alone model
- ✓ Distributed OLAP model
- ✓ Source and target

The Definition(s)…

✓ Specific cell areas within a cube

✓ Member intersections defined within a cube

✓ Direction of data flow from cube to cube

Partition Components

✓ Type of partition

✓ Data source and data target

✓ Connection information

✓ Shape of shared data partition

✓ Mapping information

Cube, Database, Application, & Model
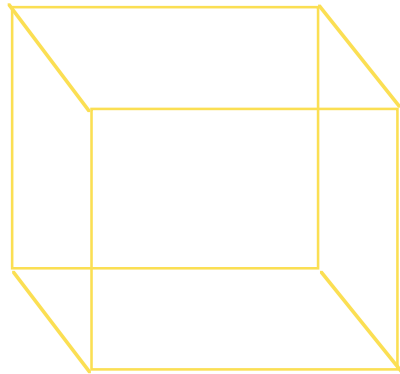
Multidimensional
cube or database
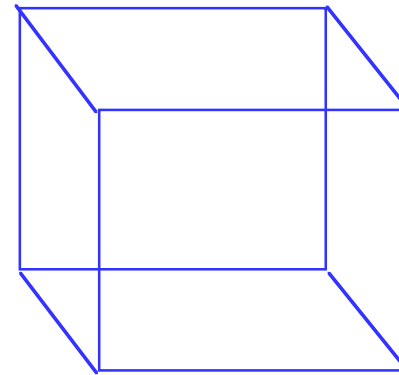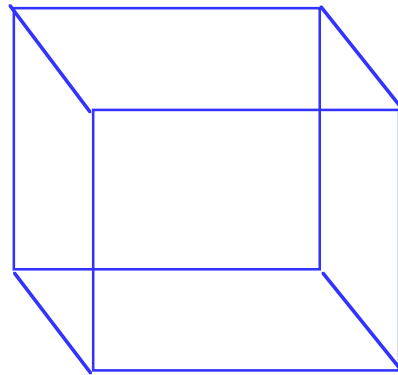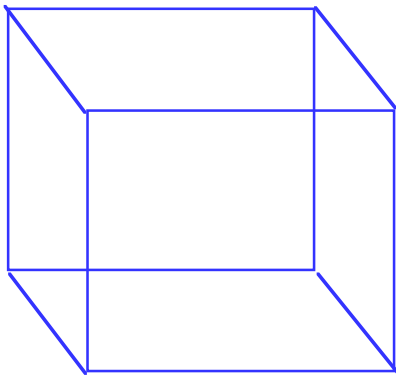
Multiple cubes =
application or
model

Terminology—Partition, Block, Cell

Cube

Slice or partition

Cell

Block

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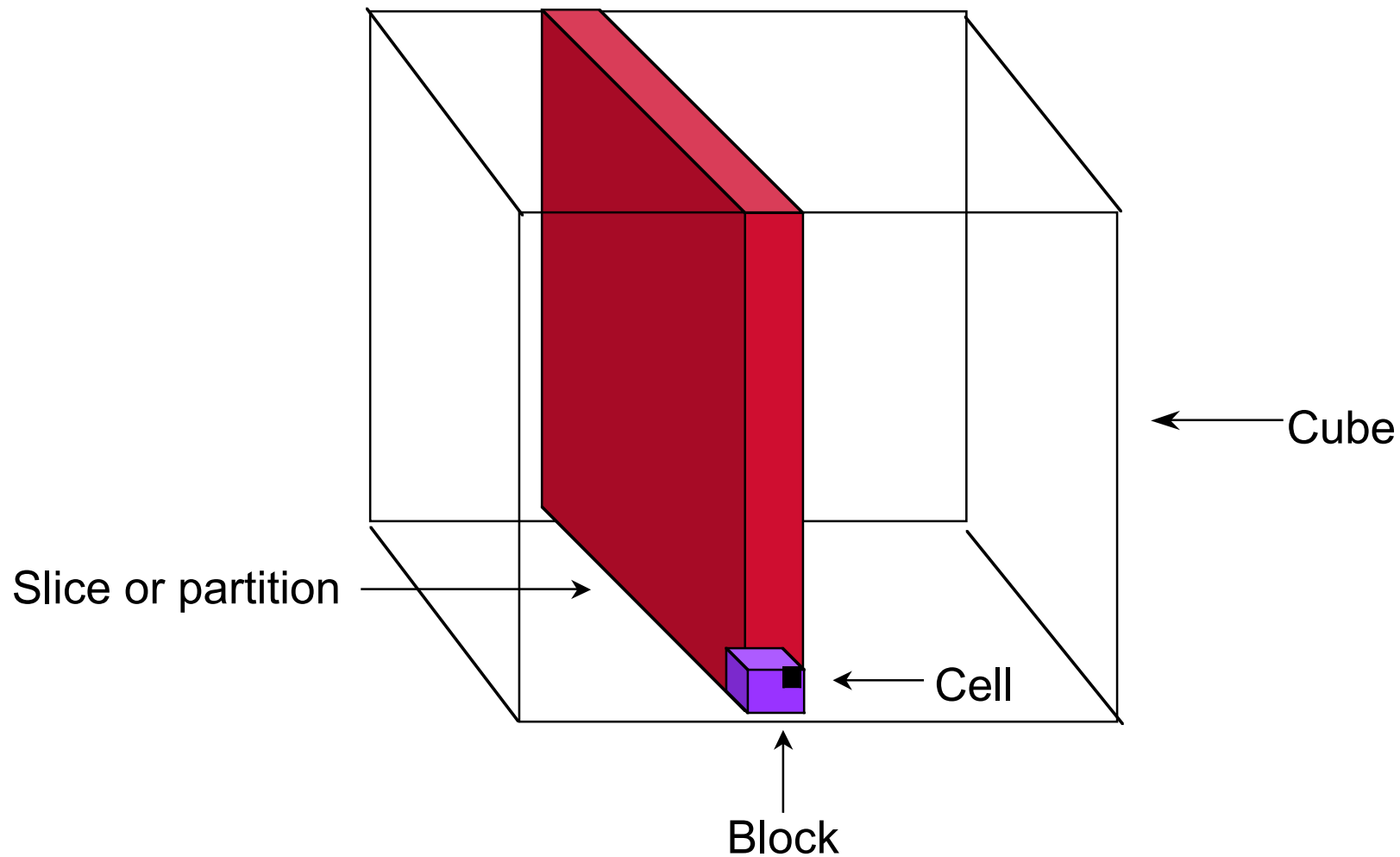
Stand-alone Model

✓ Partitions between multiple applications or cubes on a single system

✓ Source and target on same system

✓ Multiple processors on same system

Single machine → Partitions
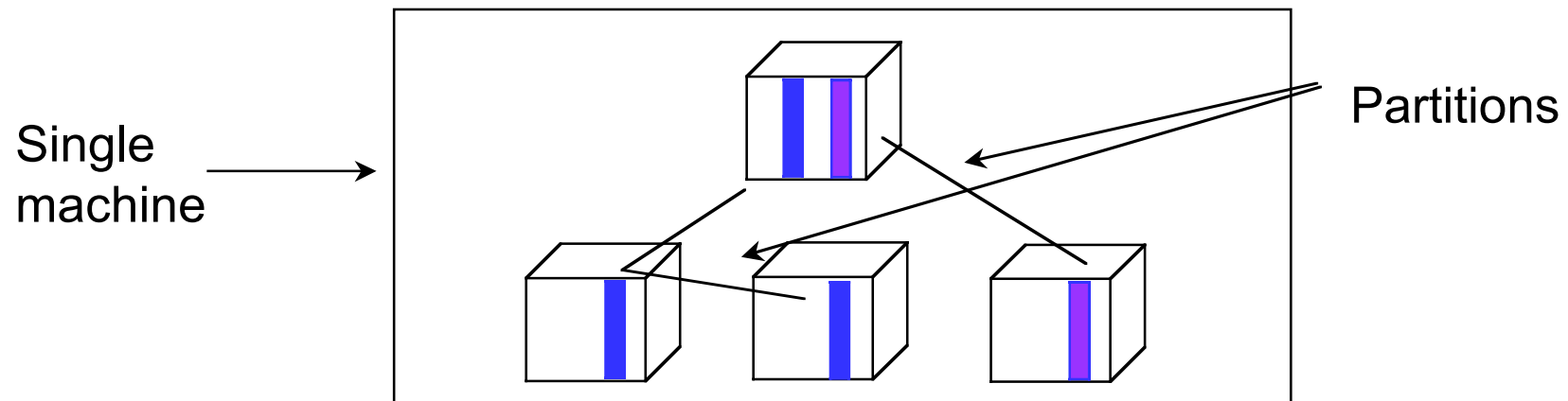
Distributed OLAP Model

- ✓ Networked
- ✓ One model or multiple models
- ✓ Distributed across multiple systems

Solaris

NT

AIX

HP-UX

AS/400

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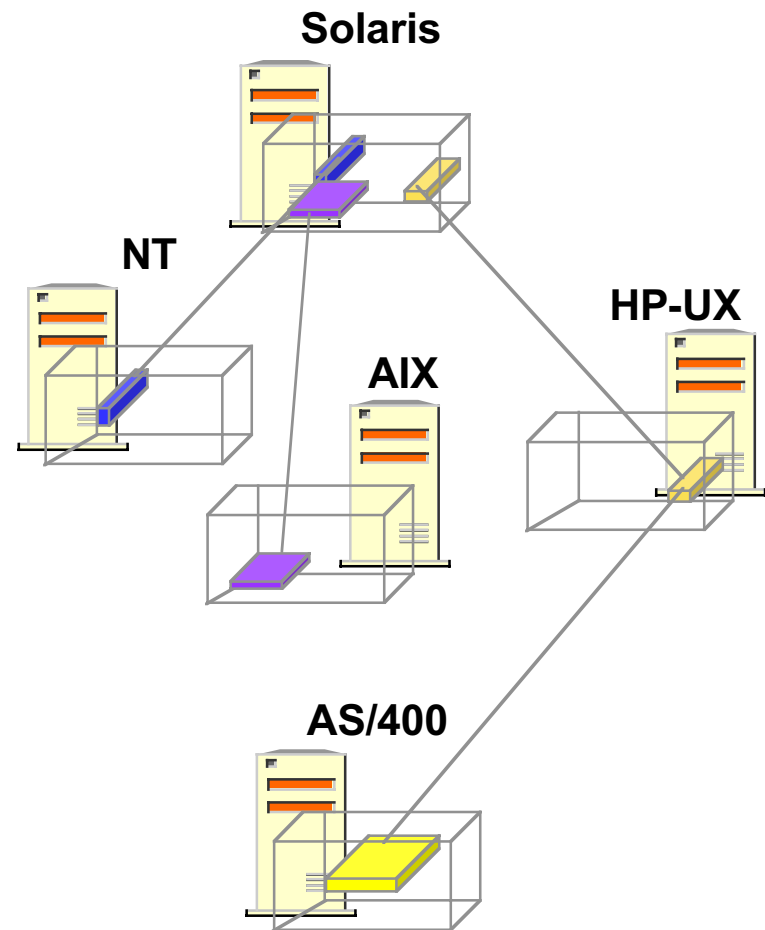
Source and Target

- ✓ Data originates from source cube.
- ✓ Data is accessed from target cube.
- ✓ Partitions map source to target.
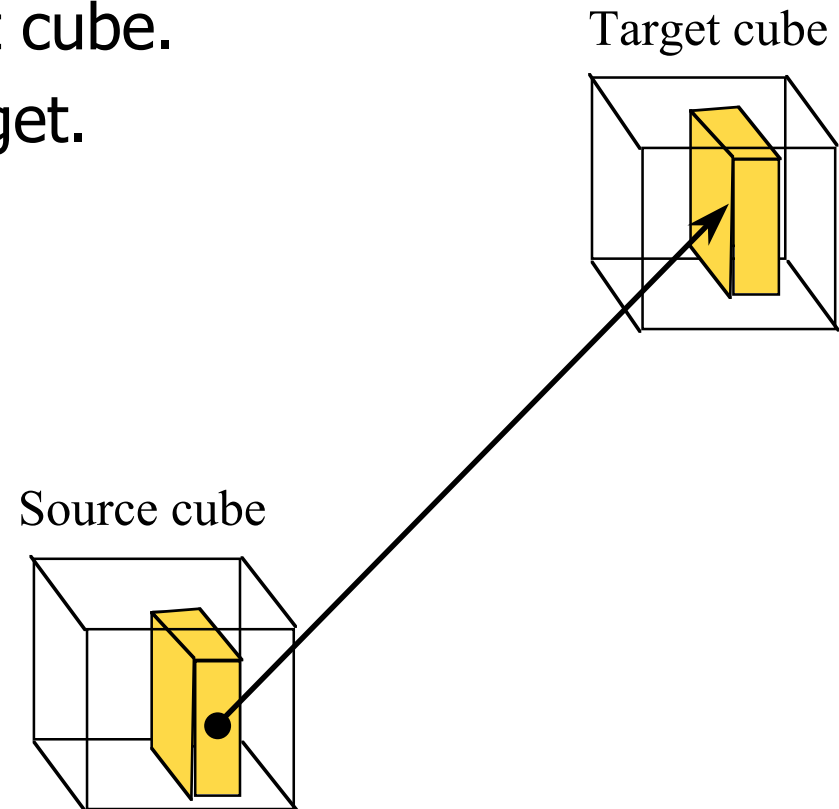
Target cube

Source cube

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Presentation Agenda

✓ Introduction to ThinkFast

✓ Partitioning Terminology

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✓ **Understanding Partition Types**

– Replicated

– Transparent

– Linked

✓ Q & A... Whenever You Like!

Types of Partitions

✓ Replicated partitions
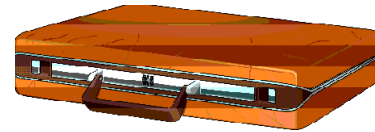
✓ Transparent partitions

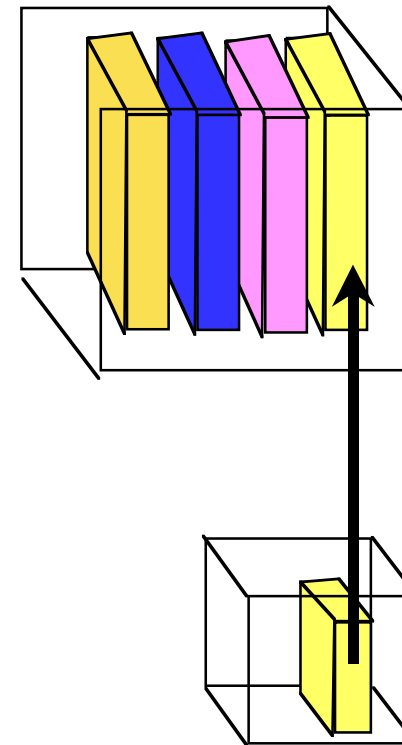✓ Linked partitions

General Considerations

✓ Authority

✓ Access

✓ Frequency of updates

✓ Servers

✓ Network capability

✓ Synchronization and mapping

✓ Dimensionality

Replicated Partitions

Target database

Source databases
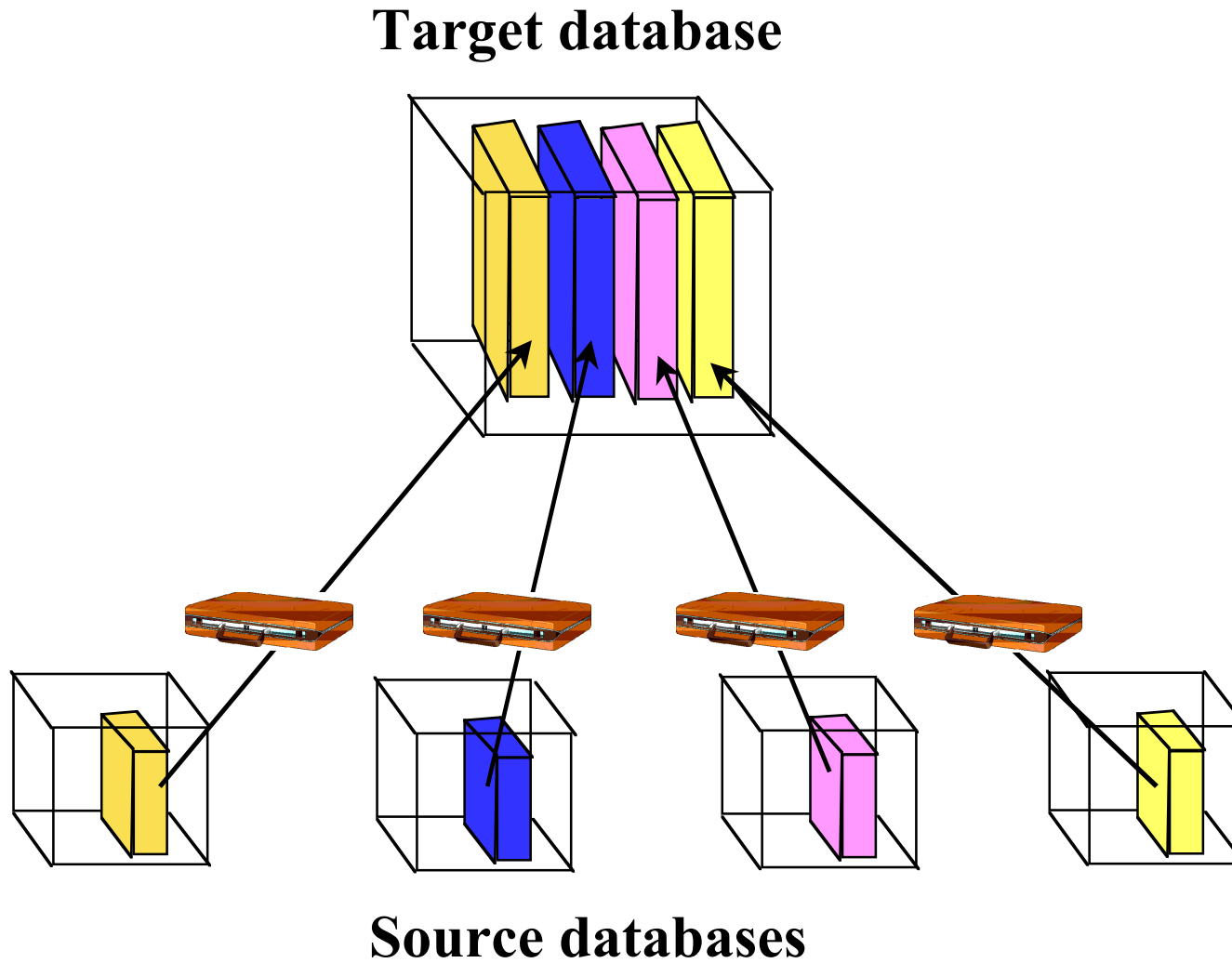
Replicated Partition Details

- ✓ Characteristics
  - Independent and Parallel
  - Top-down or Bottom-up
  - Read-only
  - Snapshot
- ✓ Advantages
  - Increased Data Accessibility
  - Independent Cubes
  - Off-peak use of Network
- ✓ Considerations
  - Increased Administration
  - Danger of Stale Data
  - Redundant Storage
  - Calculation Before Replication
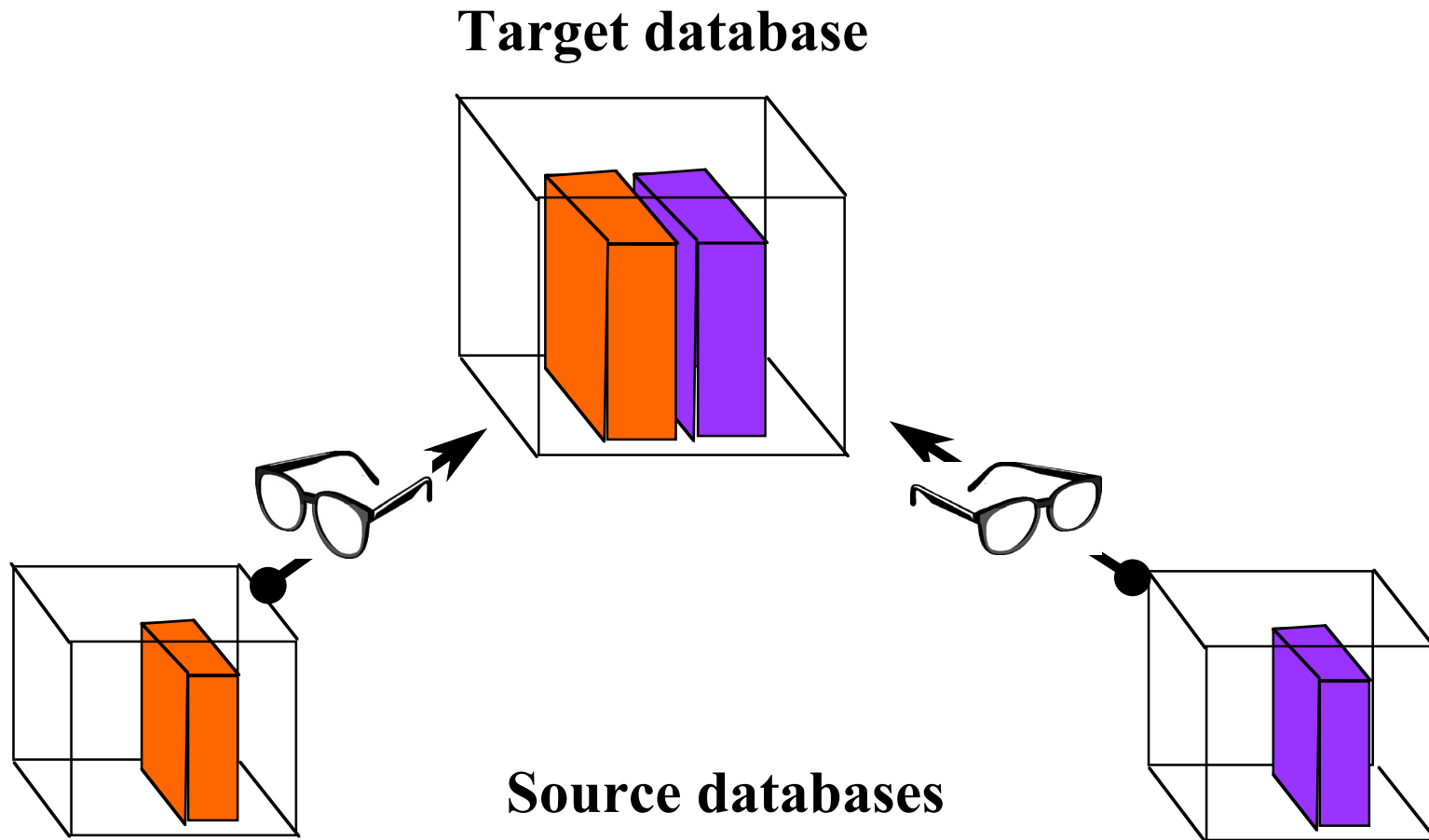 - Outline Synchronization

Demonstration

Replicated Partition

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Transparent Partitions

Target database

Source databases

Transparent Partition Details
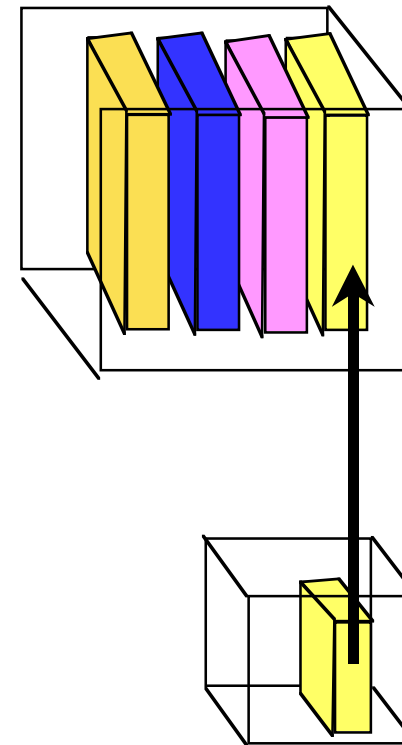
✓ **Characteristics**

– Similar to RDBMS Views

– Users Operate as if Local Cube

– Data Always Current

✓ **Advantages**

– Data Consistent

– Process Seamless

– Disk Storage Reduced

✓ **Considerations**

– Increased Network and/or Server Load

– Slower Query and Calculation

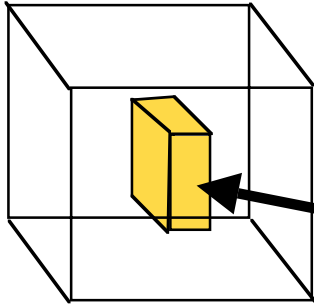– Outline Synchronization
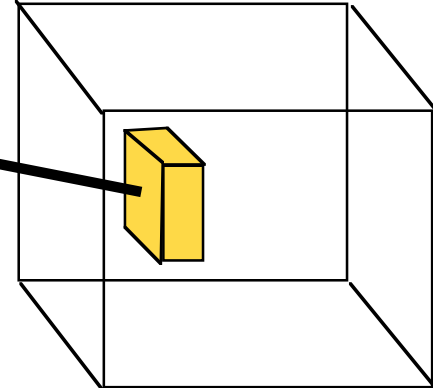
Demonstration

Transparent Partition

Linked Partitions

Source database

Target database

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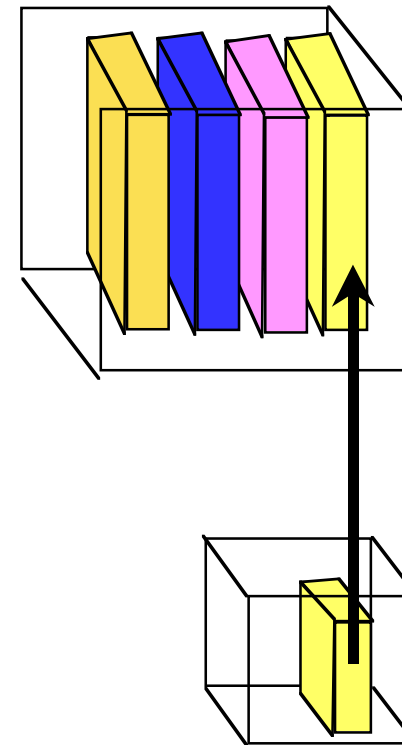# Linked Partition Details

✓ Characteristics
- Doesn't Deal with Data
- Users have Cube Drill-Thru
- Linked Reporting Object

✓ Advantages
- Cubes with Different Dimensionality
  - Plus Replicated or Transparent
- Improved Cube Performance

✓ Considerations
- Third-party Support
- Increased Network and/or Server Load
- Security Process Must be Planned.
- Process Not Seamless

Demonstration

Linked Partition

...plus one of the others

Questions?

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To reach me directly, please email me at:

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