



WALT DISNEY Parks & Resorts
INFORMATION
TECHNOLOGY

Role of Databases and Database Administrators at WDP&R

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Agenda

- Databases at Walt Disney Parks & Resorts
- Storage and Other Related Technologies
- Role of DBA team at WDP&R
- Skills Required for a DBA
- Questions & Answers



Databases at Walt Disney Parks & Resorts

Strategic Direction

- Oracle
- SQL Server
- Teradata

Declining Technologies (in WDP&R environment)

- DB2
- Informix

Database Product Selection

Size

Purpose

Related
Technologies

Functionality

Application
Vendor

Supportability

Considerations for Databases

- Availability
 - Clustering
 - Replication
- Disk Setup
 - RAID/Mirroring
 - Fault Tolerance
- Backups
 - BCV
 - Flashcopy
 - Hot Backup
 - Disk/Tape
- Coding Languages
 - PL/SQL
 - Unix scripting
 - Java
 - .Net
- Disaster Recovery Plan
 - Uptime requirements
 - Secondary server
- Security
 - Permissions and access
 - Data encryption
 - Regulatory compliance

Examples of Disney Databases

Oracle

Cast Deployment System (CDS)

- Tracks shifts, clocking, and assignments
- Instances for FL (WDW) and CA (DLR)
- 80 GB

CDS Reporting Database

- Contains current and historical data
- Used for future planning
- 300 GB

SQL Server

Garment Utilization System (GUS)

- Issue and track clothing
- Instances in FL, CA, Paris, Hong Kong
- 112 GB

Chefs

- Recipe standardization at food locations
- < 1 GB

Teradata

D³ Data Warehouse

- Enterprise data warehouse
- Single accurate data source
- Not system of record
- POS, Reservations, Financials
- 10.5 TB

Data Use Models

Application

Data Storage

Immediate
response often
required

Analytics

Analytics Tools
(SAS)

Queries can run
for hours

Reporting

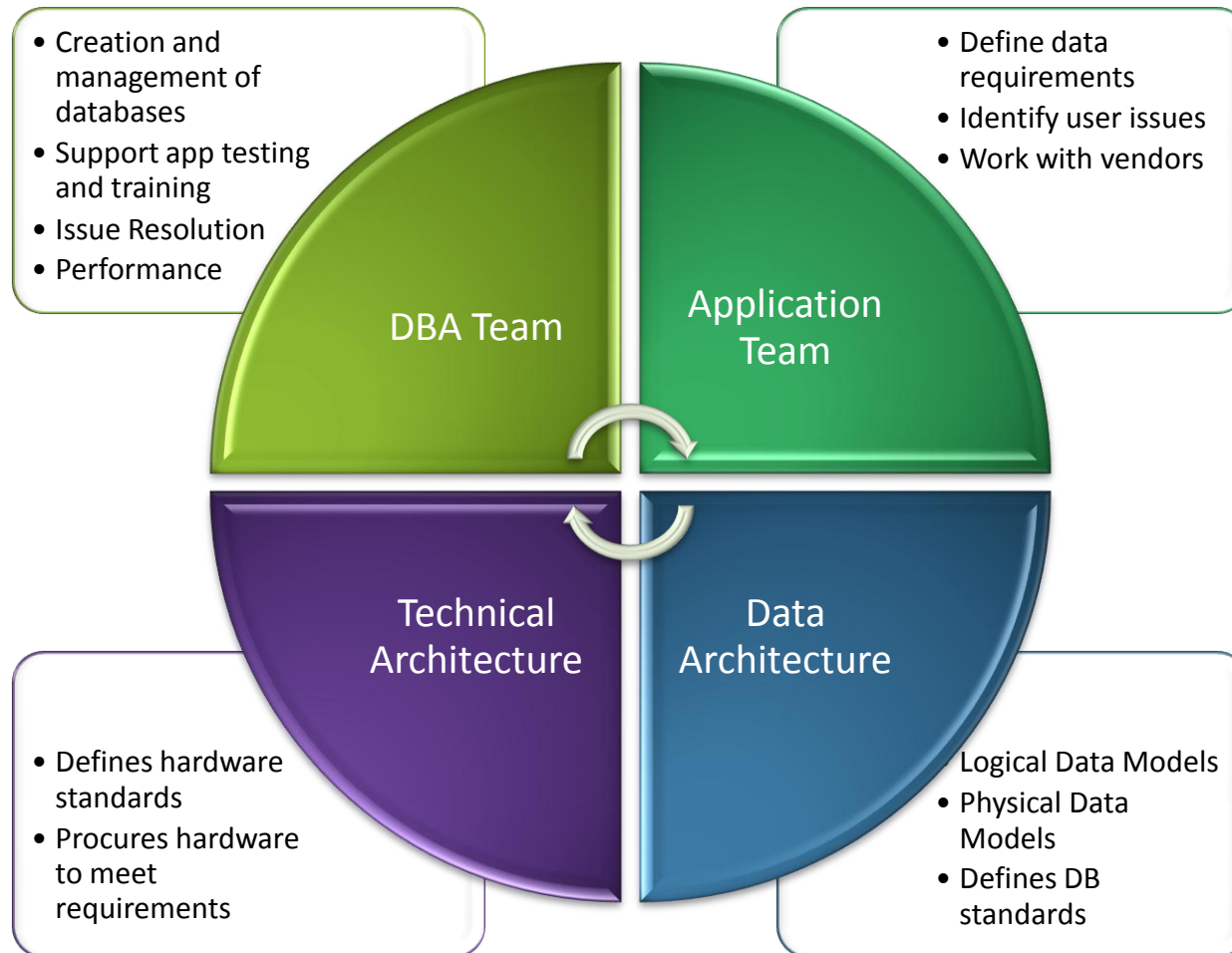
Direct Queries

Reporting Tools
(Business Objects)

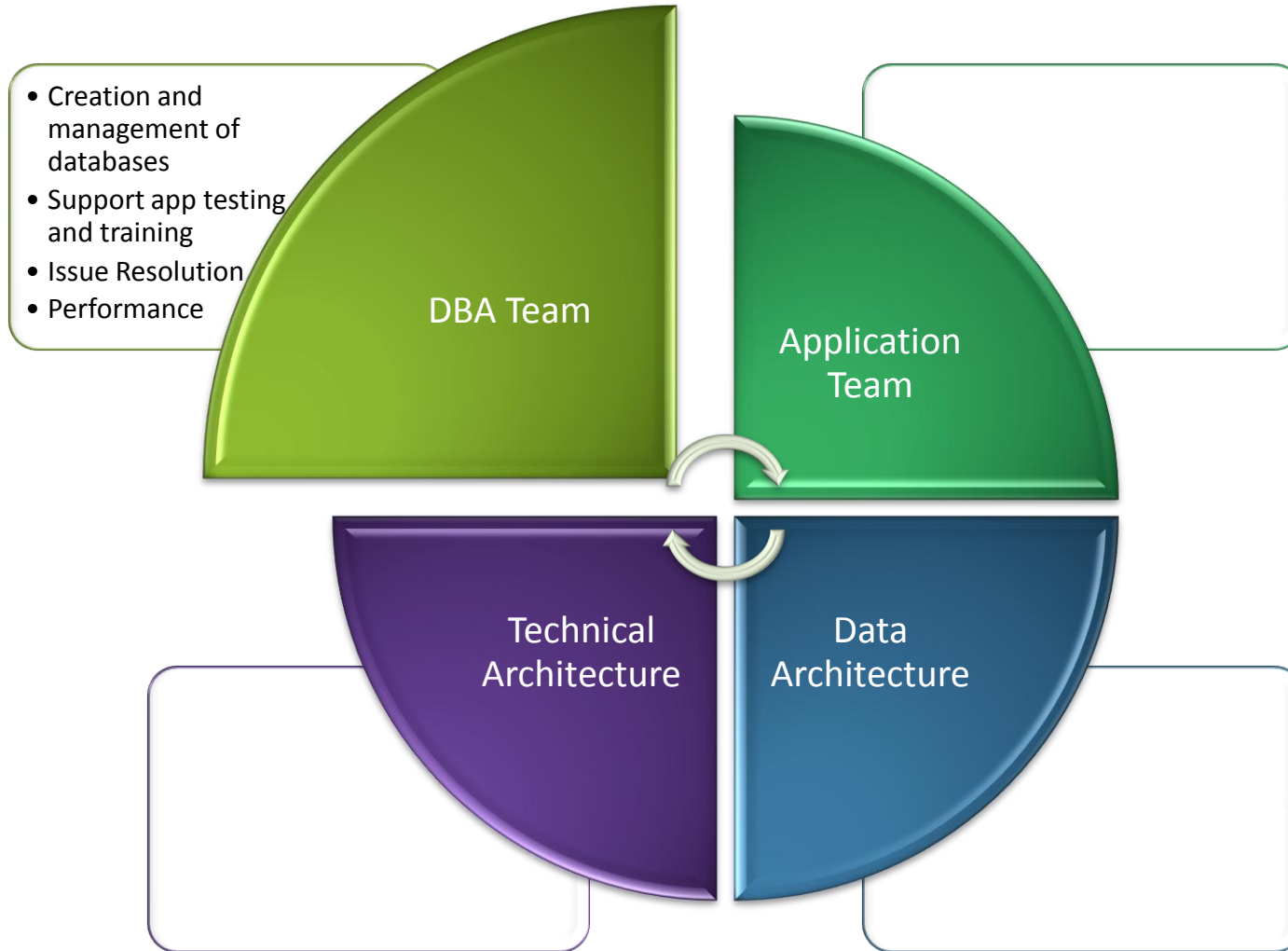
Data Storage Technologies

Storage Type	PROS	CONS
SAN	▪ Reliable ▪ Fault Tolerant ▪ Low Risk	▪ Expensive
NAS	▪ Fast ▪ Low Cost	▪ Higher Risk
Local or Direct-Attached Storage	▪ Internal to the server, so fastest ▪ Least expensive	▪ High Risk because everything on same server

WDP&R Teams Involved with Databases



WDP&R Teams Involved with Databases



Role of a Database Administrator

Standards

- Creating and implementing company wide database standards and operating procedures
- Creating users and maintaining system security and integrity
- Ensuring compliance with database license agreement and company security

Projects

- Working with Application Teams during all phases of the Project Development Life Cycle
- Planning DB storage needs, including future growth
- Creating primary database storage structures (tablespaces) and objects (tables, views, indexes)
- Allocating Memory structures and DB parameters based on system resources
- Planning for DB backup and recovery processes

Role of a Database Administrator

Performance Tuning

- This occurs during the initial testing of new databases, and is also an on-going effort
- Look for hotspots
- Memory utilization
- CPU utilization
- Long-Running Queries

Monitoring and Maintenance

- Modifying the database structure, as necessary (add data files, alter tables...)
- Backing up and restoring databases
- Scripting for monitoring and maintenance jobs
- Upgrading the Database and other tools (versions, security patches, one-off patches)

Trouble-Shooting

- Debugging application and user issues
- In-depth knowledge of all components
- Root cause analysis
- Contacting DB vendors for technical support as needed

Required Skill Sets of a DBA

- Trouble-Shooting
- Data Analysis
- Defining Data Requirements
- SQL and Programming Languages
- Third-Party Tools
- Strong understanding of underlying technologies
 - Technical Architecture
 - Data Architecture
 - Hardware and Operating System
 - Network
- Soft Skills
 - Communication
 - Customer and Vendor Relations

SQL Query Example

SQL Statement used to monitor space and tell how much to add so that the tablespace is 80% or 70% utilized when done:

```
select distinct tablespace_name,  
       allocated,  
       maxsize,  
       usedspace/allocated "CurPctUsed",  
       round(decode(sign(.25*allocated-1.25*freespace),-1,null,.25*allocated-1.25*freespace),1) "80Pct",  
       round(decode(sign(.43*allocated-1.43*freespace),-1,null,.43*allocated-1.43*freespace),1) "70Pct"  
from spacecheck_ts  
order by usedspace/allocated desc;
```

SQL Query Example

```

SELECT EXPDB.PROJ.PROJECT_NAME || ' - ' || EXPDB.PROJ.PROJECT_TITLE, Table__31.SAPWBS || ' ' || SubStr(Table__31.FUNDTYPE, 1, 1), Table__31.FISCALYEAR,
Table__31.PROPERTYCOSTCODE, Table__31.COSTCODETITLE, Table__31.CUST_ORIG_AMNT, Table__31.CUST_ORIG_AMNT + Table__31.CUST_APPRVD_REV,
Table__31.BDGT_ORIG_AMNT, Table__31.BDGT_PEND_REV, Table__31.BDGT_APPRVD_REV, Table__31.BDGT_ORIG_AMNTAPPRVD +
Table__31.BDGT_APPRVD_REV, Table__31.BDGT_ORIG_AMNT + Table__31.BDGT_APPRVD_REV + Table__31.BDGT_PEND_REV + Table__31.BDGT_EST_REV +
Table__31.BDGT_ADJUSTMENT, Table__31.CMMT_ORIG_AMNT, Table__31.CMMT_PEND_REV, Table__31.CMMT_APPRVD_REV, Table__31.CMMT_ORIG_AMNT +
Table__31.CMMT_APPRVD_REV, Table__31.CMMT_ORIG_AMNT + Table__31.CMMT_APPRVD_REV + Table__31.CMMT_PEND_REV + Table__31.CMMT_EST_REV +
Table__31.CMMT_ADJUSTMENT, Table__31.ACTUALS, decode(Table__31.CMMT_ORIG_AMNT + Table__31.CMMT_APPRVD_REV + Table__31.CMMT_PEND_REV +
Table__31.CMMT_EST_REV + Table__31.CMMT_ADJUSTMENT, 0, Table__31.BDGT_ORIG_AMNT + Table__31.BDGT_APPRVD_REV + Table__31.BDGT_PEND_REV +
Table__31.BDGT_EST_REV + Table__31.BDGT_ADJUSTMENT, Table__31.BDGT_PEND_REV_UNCMMT), decode(Table__31.CMMT_ORIG_AMNT +
Table__31.CMMT_APPRVD_REV + Table__31.CMMT_PEND_REV + Table__31.CMMT_EST_REV + Table__31.CMMT_ADJUSTMENT, 0, Table__31.BDGT_ORIG_AMNT +
Table__31.BDGT_APPRVD_REV + Table__31.BDGT_PEND_REV + Table__31.BDGT_EST_REV + Table__31.BDGT_ADJUSTMENT, Table__31.CMMT_ORIG_AMNT +
Table__31.CMMT_APPRVD_REV + Table__31.CMMT_PEND_REV + Table__31.CMMT_EST_REV + Table__31.CMMT_ADJUSTMENT +
Table__31.BDGT_PEND_REV_UNCMMT), decode(Table__31.CMMT_ORIG_AMNT + Table__31.CMMT_APPRVD_REV + Table__31.CMMT_PEND_REV +
Table__31.CMMT_EST_REV + Table__31.CMMT_ADJUSTMENT, 0, Table__31.BDGT_ORIG_AMNT + Table__31.BDGT_APPRVD_REV + Table__31.BDGT_PEND_REV +
Table__31.BDGT_EST_REV + Table__31.BDGT_ADJUSTMENT, Table__31.CMMT_ORIG_AMNT + Table__31.CMMT_APPRVD_REV + Table__31.CMMT_PEND_REV +
Table__31.CMMT_EST_REV + Table__31.CMMT_ADJUSTMENT + Table__31.BDGT_PEND_REV_UNCMMT) - Table__31.CUST_ORIG_AMNT -
Table__31.CUST_APPRVD_REV, decode(Table__31.CMMT_ORIG_AMNT + Table__31.CMMT_APPRVD_REV + Table__31.CMMT_PEND_REV +
Table__31.CMMT_EST_REV + Table__31.CMMT_ADJUSTMENT, 0, Table__31.BDGT_ORIG_AMNT + Table__31.BDGT_APPRVD_REV + Table__31.BDGT_PEND_REV +
Table__31.BDGT_EST_REV + Table__31.BDGT_ADJUSTMENT, Table__31.CMMT_ORIG_AMNT + Table__31.CMMT_APPRVD_REV + Table__31.CMMT_PEND_REV +
Table__31.CMMT_EST_REV + Table__31.CMMT_ADJUSTMENT + Table__31.BDGT_PEND_REV_UNCMMT) - Table__31.BDGT_ORIG_AMNTAPPRVD -
Table__31.BDGT_APPRVD_REV, decode(Table__31.CMMT_ORIG_AMNT + Table__31.CMMT_APPRVD_REV + Table__31.CMMT_PEND_REV +
Table__31.CMMT_EST_REV + Table__31.CMMT_ADJUSTMENT, 0, Table__31.BDGT_ORIG_AMNT + Table__31.BDGT_APPRVD_REV + Table__31.BDGT_PEND_REV +
Table__31.BDGT_EST_REV + Table__31.BDGT_ADJUSTMENT, Table__31.CMMT_ORIG_AMNT + Table__31.CMMT_APPRVD_REV + Table__31.CMMT_PEND_REV +
Table__31.CMMT_EST_REV + Table__31.CMMT_ADJUSTMENT + Table__31.BDGT_PEND_REV_UNCMMT) - Table__31.BDGT_ORIG_AMNT -
Table__31.BDGT_APPRVD_REV - Table__31.BDGT_PEND_REV - Table__31.BDGT_EST_REV - Table__31.BDGT_ADJUSTMENT, EXPDB.PROJ.OWNER_NAME,
EXPDB.PROJ.ARCHITECT, EXPDB.PROJ.PROJECT_MANAGER, SAP.WDW_PROJECTKEYPARTIES_V.PROJMANAGERTEAMLEAD,
SAP.WDW_PROJECTKEYPARTIES_V.PROJMANAGERLEADER, Table__31.PROPERTY, Table__31.SAP_COMMITMENT, Upper(EXPDB.PROJ.PROJECT_NAME),
Table__31.PROJECTSAPWBS || Table__31.FiscalYear, Table__31.SAPWBS FROM SAP.WDW_PROJECTKEYPARTIES_V, EXPDB.PROJ, ( SELECT SAPWBS, FUNDTYPE,
FISCALYEAR, PROPERTYCOSTCODE, COSTCODETITLE, CUST_ORIG_AMNT, CUST_APPRVD_REV, BDGT_ORIG_AMNT, BDGT_PEND_REV, BDGT_APPRVD_REV,
BDGT_ORIG_AMNTAPPRVD, BDGT_EST_REV, BDGT_ADJUSTMENT, CMMT_ORIG_AMNT, CMMT_PEND_REV, CMMT_APPRVD_REV, CMMT_EST_REV,
CMMT_ADJUSTMENT, ACTUALS, BDGT_PEND_REV_UNCMMT, PROPERTY, SAP_COMMITMENT, PROJECTSAPWBS, PROJECT_NAME FROM
SAP.WDW_COSTWORKSHEETDETAIL4_V WHERE SAP.WDW_COSTWORKSHEETDETAIL4_V.FISCALYEAR IN ('2009')) Table__31 WHERE (
EXPDB.PROJ.PROJECT_NAME=SAP.WDW_PROJECTKEYPARTIES_V.PROJECT_NAME) AND ( EXPDB.PROJ.PROJECT_NAME=Table__31.PROJECT_NAME(+) ) AND (
Upper(EXPDB.PROJ.PROJECT_NAME) IN (SELECT Upper(EXPDB.PROJ.PROJECT_NAME) FROM SAP.WDW_PROJECTNODEVIEW_V, EXPDB.PROJ,
SAP.WDW_COSTWORKSHEETDETAIL4_V WHERE ( EXPDB.PROJ.PROJECT_NAME=SAP.WDW_PROJECTNODEVIEW_V.PROJECT_NAME) ) AND (
EXPDB.PROJ.PROJECT_NAME=SAP.WDW_COSTWORKSHEETDETAIL4_V.PROJECT_NAME(+) ) AND ( SAP.WDW_PROJECTNODEVIEW_V.TEMPLATE IS NULL AND
EXPDB.PROJ.COMPANY_ABBREV = 'W_FAM' AND (SAP.WDW_COSTWORKSHEETDETAIL4_V.CUST_ORIG_AMNT != 0 OR
SAP.WDW_COSTWORKSHEETDETAIL4_V.CUST_ORIG_AMNT + SAP.WDW_COSTWORKSHEETDETAIL4_V.CUST_APPRVD_REV != 0 OR
SAP.WDW_COSTWORKSHEETDETAIL4_V.BDGT_PEND_REV != 0 OR SAP.WDW_COSTWORKSHEETDETAIL4_V.BDGT_ORIG_AMNT +
SAP.WDW_COSTWORKSHEETDETAIL4_V.BDGT_APPRVD_REV + SAP.WDW_COSTWORKSHEETDETAIL4_V.BDGT_PEND_REV +
SAP.WDW_COSTWORKSHEETDETAIL4_V.BDGT_EST_REV + SAP.WDW_COSTWORKSHEETDETAIL4_V.BDGT_ADJUSTMENT != 0 OR
SAP.WDW_COSTWORKSHEETDETAIL4_V.CMMT_ORIG_AMNT != 0 OR SAP.WDW_COSTWORKSHEETDETAIL4_V.CMMT_ORIG_AMNT +
SAP.WDW_COSTWORKSHEETDETAIL4_V.CMMT_APPRVD_REV + SAP.WDW_COSTWORKSHEETDETAIL4_V.CMMT_PEND_REV +
SAP.WDW_COSTWORKSHEETDETAIL4_V.CMMT_EST_REV + SAP.WDW_COSTWORKSHEETDETAIL4_V.CMMT_ADJUSTMENT != 0) ) AND
SAP.WDW_COSTWORKSHEETDETAIL4_V.FISCALYEAR IN ('2009')) ) AND Table__31.FISCALYEAR IN ('2009')) ;

```

DBA Job Considerations

Work Schedule

- Not a 9:00-5:00 job. Significant work during evenings and weekends.
- Production databases cannot experience outages during normal operating hours
- Production support; On-call shifts

Continuous Learning

- New versions of the database software
- New tools (e.g. Oracle RAC and OEM)
- Changes to technologies
- Industry direction

Communication

- IT - Application Teams, System Admins, other DBA's
- Business Departments (customer relations)
- Vendors – Application, Hardware, Other Technical

Questions & Answers

