

# DBA in IBM Web Hosting

## Preface

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### Objective

This document list DBA roles and services for customer within USF(Universal Server Farms) and show future plan for building DBA is USF.

USF Database Administrator should create operational procedure for administrative job and build manual based on this document.

## Document Information

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### Summary

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## Part I Main Category of DBA Roles

In order to understand DBA, the role should be separated by several categories. This classification is based on

- requirements of customer
- DBA capacity
- USF environments
- pre-defined DBA roles

By these bases, DBA's role consists of;

- Management Service
- Monitoring & Alert Service
- Networking & Security Service
- Backup & Recovery Service
- Tuning Service
- Technical Service
- Training Service

**Management Service** is the main service for customer. This service consists of many skillful job to maintain DBMS as a normal state. Installation and all kinds of management job are good example of this.

**Monitoring Service** is a watching service to be aware of abnormal state beforehand. In case of abnormal state, USF notify this situation to customer with proper action. Most of monitoring services will be performed by automatic or operator.

**Networking & Security Service** is a service for keeping secure DBMS on USF environment as well as internet. DBMS Security policy should basis USF. This service support to configure network environment DBMS related.

**Backup & Recovery Service** is more important service than any other DBA jobs. DBA should backup database to be able to meet any kind of failure or disaster. In case of that occurrence, USF should recognize it and recover database as soon as possible.

**Tuning Service** is a service to keep DBMS best state. This need a DBA with supreme skill and enough experience. A scope of the service is from server tuning to application tuning. If necessary, we serve project based service to tune and re-engineer system totally

**Technical Service** is a special service for customer. When customer need a special skill for DBA or want DBA help regularly, we can provide technical support.

**Training Service** is a optional service for customer's skill upgrade. Generally, this service will provide on-site like a lecture style as well as off-site like mailing service.

## Part II DBA Job List

### Management Service

Title	Level			Period	Time	Remark
	Basic	Interme diate	Adva nced			
Pre-installation planning	✓			1/y	3h	
Installation and configuration	✓			1/y	5h	Only when USF has license
Database Sizing	✓			1/y	6h	
Create/Alter Database Object		✓		1/d	0.5h	
Manage Rollback Segment		✓		2/w	0.3h	Oracle only
Manage Data Space		✓		1/w	0.5h	
Analyze Database		✓		1/w	1h	
Reorganization Space			✓	1/q	6h	
Manage Disk Map		✓		1/m	1h	
Manage Database History		✓		1/d	0.1h	
Manage Patch		✓		2/y	2h	
Manage OPS			✓	1/d	0.5h	Oracle only
Distribute/Replication Database			✓	1/w	0.5h	
Upgrade Database			✓	1/y	9h	
Data Unload/Load		✓		1/w	1.5h	
Manage HA		✓		2/y	1h	
Manage Licenses	✓			1/y	2h	only when USF has license
Document system configuration and keep it current	✓			1/d	0.5h	
24X7 365 Service			✓	1/d	0.5h	

### Monitoring & Alert Service

Title	Level	Period	Time	Remark
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	Basic	Intermediate	Advanced			
Monitor Rollback Segment	✓			1/d	0.2h	Oracle Only
Monitor Space	✓			1/d	0.1h	
Monitor Lock/Wait		✓		1/d	0.2h	
Monitor Processes		✓		1/d	0.2h	
Monitor Database Objects	✓			1/d	0.1h	
Check Application Program		✓		1/d	0.1h	
Check Database Up	✓			1/d	0.1h	With alert service
Daily Check procedure/Report			✓	1/d	0.1h	
Weekly Check procedure/Report		✓		1/w	0.2h	
Monthly Check procedure/Report		✓		1/m	1h	
Alarm Service		✓		1/d	0.1h	
Database Monitoring Script			✓	1/m	0.5h	
Monitor OS Resource			✓	1/d	0.1h	
Check Log New Entry		✓		1/d	0.1h	
Monitor OPS			✓	1/d	0.5h	Oracle Only

## Backup & Recovery Service

Title	Level			Period	Time	Remark
	Basic	Intermediate	Advanced			
Defining Backup/Recovery Strategy		✓		1/y	10h	
Building and testing Backup/Recovery Scenario			✓	1/q	6h	
Configuring Backup environment		✓		1/q	2h	
Data Export/Import	✓			1/d	0.5h	
Backup using RMAN			✓	1/d	2h	Oracle Only, Using TSM
Backup using OS			✓	1/d	2h	Using TSM
Critical data Backup		✓		1/d	0.5h	
Manage Archive Log		✓		1/y	0.2h	
Recovery (requested by Customer)			✓	1/y	6h	
Off-site Storage			✓	1/d	0.5h	

## Networking & Security Service

Title	Level			Period	Time	Remark
	Basic	Intermediate	Advanced			
Database User Access Control		✓		1/w	0.5h	

Manage Password		✓	1/q	0.5h
Manage User and Resource	✓		1/q	0.5h
Manage User Privilege and Role	✓		1/w	0.2h
Auditing Database		✓	1/d	0.2h
Configure Database Network	✓		1/y	1h
Advanced Network Security		✓	1/y	3h
Build DB Security Policy	✓		1/y	2h
Security Health Checking		✓	1/m	1h

### Tuning Service

Title	Level			Period	Time	Remark
	Basic	Interme diate	Adva nced			
Server Tuning		✓		1/m	1h	
Advanced Server Tuning			✓	1/y	3h	
Utlbstat/Utlestat Report		✓		2/y	2h	Oracle only (others need new script)
STATSPACK Report			✓	1/q	2h	Oracle only (others need new script)
Application Tuning(SQL)			✓	1/w	2h	
Memory Tuning(SGA)		✓		1/q	0.5h	
I/O Tuning		✓		1/q	1h	
CPU Tuning(Parallel)		✓		1/q	1h	

### Technical Service

Title	Level			Period	Time	Remark
	Basic	Interme diate	Adva nced			
Logical Modeling			✓	1/y	40h	Project base
Physical Modeling			✓	1/y	20h	Project base
Designing Database System			✓	1/y	8h	
Database Sizing	✓			1/y	4h	
Making Database Naming Rule	✓			1/y	4h	
Troubleshooting			✓	1/w	1h	Need escalation to vendor
Application Development Env.	✓			1/y	4h	
Database re-engineering			✓	1/y	20h	Project base
Database Migration			✓	1/y	6h	
Examine 3 <sup>rd</sup> Party Tool			✓	2/y	3h	
Emergency Assistance			✓	1/m	2h	
Capacity Planning/Forecasting			✓	1/y	4h	
Database Hosting Service			✓	1/y	20h	Project base

Temporary DBA ✓ 1/y 16h Project base

## Training Service

Title	Level			Period	Time	Remark
	Basic	Intermediate	Advanced			
SQL		✓		1/y	12h	
Basic Database Administrator		✓		1/y	8h	
Intermediate Database Admin			✓	1/y	8h	
Using DBMS Utility		✓		1/y	4h	
News Briefing			✓	1/w	1h	
Knowledge enhancement			✓	1/m	2h	
Customer Request Training			✓	1/y	4h	

**Note:** There are several notices to understand above table exactly. The listed tiles have different characteristic and requirement. If you (or customer) have any question and confusion , you should contact the author.

- The **level** is divided by three, which are Basic, Intermediate and Advanced. The main barometers are importance and workload to classify it. For example:
  - Basic : This job need simple DBA skill and does not need over 1 hour to complete it. Most of basic jobs are able to be performed automatically without maintenance.
  - Intermediate : This job need senior DBA who can perform it under self-decision. It takes more time than basic job and the result of is more important to customer.
  - Advanced : This job is very critical to customer and DBA. It takes more time than intermediate job and workload of this job is very serious to DBA. Sometimes you need external help to complete it. For example, DBA vendor, 3<sup>rd</sup> party software vendor...
- The **period** means
  - D : Day or Daily based job
  - W : Week or Weekly based job
  - Q : Quarter(3 months) or Quarter based job
  - Y : Year or Yearly based job. Sometimes it means non-periodically job
- The **time** does not means general terms of time always. You consider it as a unit of job workload to use for measurement of it.
- In fact this tables are build on Oracle RDBMS Concept, but it can be adapted to all kinds of DBMS. So, the contents of tables can be modified by contracts. In this case, it must be need to agreement between IBM USF and Customer.

## Part III Future Plan

### Complete DBA Role

First of all this document must be completed asap because this is the standard of all DBA works in USF. Duplicated role should be omitted and missing role should be added. When you list DBA jobs, you should consider that it can be applied any kinds of DBMS.

### Detailed Job Description

This document is only lists of job title for DBA. A concrete description should be built in another document. The document should contain:

- More detailed explanation about the job title
- How to perform it
- How to apply it to several DBMS
- Who perform it
- What does DBA prepare

### Gather Customer Requirements

You should collect customer's requirements the moment building DBA role. A Job which a customer doesn't want to perform should not be done. It is illegal to do job which is not within contract.

### Prepare DBA Test Environment ASAP

To make operational procedure and manual we build test environment for DBA. The least desired environment is that

- Server (Workstation available) : 1EA
- DBMS (Oracle, Informix, DB2, Sybase ..) : Trial or Temporary version available
- 3<sup>rd</sup> Party Tool : monitoring, backup, resource management

This equipment will be used for monitoring and backup server for DMBS after testing.