



ANNEX 34

Indicative Hardware and Technology Software Sizing

Indicative HW and TSW Sizing

Indicative Sizing

**Note that this is a very high level budgetary estimate of the sizing at an initial stage of discussion, RFI, RFP, etc. It is intended only for arriving at budgetary technology and hardware costs associated with the project. A more detailed sizing is strongly recommended at a later stage (typically post gap analysis) of the selection / implementation process, once the customizations, interfaces & deployment model scope are finalised.

Assumptions:

Logical Solution Layers - Acronym used in Sizing Sheet	Modules Included for Indicative Sizing
Product Processors/Back Office [Flexcube]	Please refer the Modules & Volume Metrics
Flexcube	Please refer the Modules & Volume Metrics

SI No.	Assumption for HW Indicative Sizing - Full
1	All Sizing has been provided based on Intel Xeon x86 Processor with 2.1-2.4 GHz+ Base Frequency
2	4 Environments suggested - PRODUCTION, DR, DEV and MIG
3	Production critical workloads are suggested as 2 Nodes Active-Active with a Single Node DR Standby
4	Data Replication between Production and DR to be done using Oracle Data Guard
5	Assumed to integrate with Client's existing Access Management and Identity Management system/LDAP for User Authentication and Single Sign-On.
6	We assume to use Bank's existing Document Management System. Alternatively, Bank can choose to procure Oracle WebCenter Content Imaging as optional.
7	See Volume Metrics Tab for calculation of Compute Size.
8	Size for database storage is proposed as a estimated volume to start with as Online/Hot Tier 1 Data. Same to be revisited periodically for capacity planning. As per Bank's inputs, many modules has been indicated as Data Retention for 5 years, and some for 10 years. This can be managed in multiple ways by data life-cycle management across different Data Tiers (Hot/Warm/Cold) - same to be finalized during implementation.

SI No.	Assumption for HW Indicative Sizing - Full
9	Virtualization and OS Support Matrix [For Bank to arrange supported OS/Virtualization while virtualizing physical servers] - Oracle Fusion Middleware [includes WebLogic] - https://www.oracle.com/middleware/technologies/ias/oracleas-supported-virtualization.html
10	Virtualization and OS Support Matrix [For Bank to arrange supported OS/Virtualization while virtualizing physical servers] - Oracle Database - https://www.oracle.com/in/database/technologies/virtualization-matrix.html
11	If Bank chooses to use Oracle Linux Virtualization Manager (OLVM) to virtualize, OVM support subscription can be additionally provided. A 2 X 2-core OVM Manager VM is needed in DC and DR for VM Administration & Management.
12	TEST Environments has been licensed on NUP - Named User Plus basis. Maximum number of Users in Oracle DB, WebLogic and Analytics Publisher environments in TEST should be less than or equal to NUP Quantities licensed.

Overall Assumptions

Sizing Assumptions & Parameters	
Parameter	Value
Total Core Banking Accounts	5,000
Oracle Banking Branch Accounts	5,000
Term Deposits / CASA / Loans / SI / Nostro	5,000 each (shared account base)
Treasury Total Assets	\$100M
Corporate Lending Loan Book	\$100M
Enterprise Limits & Collateral Under Management	\$100M each
Payments Volume	~13,000 TXN/day (Cross Border + ACH + Book Transfer + RTGS)
OBDX Corporate Subscribers	30
OBDX Instances	1
Development Workbench Users	1
Extensibility Workbench Users	1
Bank Profile	Small Bank
Deployment Model	Production (Non-RAC — Single Instance or RAC-ready)
Growth Factor	1.5x over 3 years

Module List (FCUBS+OBDX)

Modules	Metric	Quantity
FLEXCUBE CORE MODULES		
Oracle FLEXCUBE Development Workbench	Application Users	1
Oracle FLEXCUBE Universal Banking Base	Account	5,000
Oracle FLEXCUBE Universal Banking Current Accounts and Savings Accounts	Account	5,000
Oracle FLEXCUBE Universal Banking Retail and Small and Medium Enterprise Loans	Account	5,000
Oracle Banking Branch	Branch Account	5,000
Oracle FLEXCUBE Universal Banking Term Deposits	Account	5,000
Oracle FLEXCUBE Universal Banking Standing Instructions	Account	5,000
Oracle FLEXCUBE Universal Banking Nostro Reconciliation	Account	5,000
Oracle FLEXCUBE Integration Gateway	Account	5,000
Oracle Banking Treasury Management	\$M in Total Assets	100
Oracle Banking Extensibility Workbench	Application Users	1
Oracle Banking Enterprise Limits Management	\$M in Collaterals or Limits Under Management	100
Oracle Banking Enterprise Collateral Management	\$M in Collaterals or Limits Under Management	100
Oracle Banking Corporate Lending Bilateral Loans	\$ Million in Loan Book Size Perpetual	100
ORACLE BANKING PAYMENTS		
Oracle Banking Payments Cross Border	10K Transactions	1
Banking Payments ACH	10K Transactions	1
Banking Payments Book Transfers	10K Transactions	10
Banking Payments RTGS	10K Transactions	1
Oracle Banking Digital Experience (OBdX)	2	
Banking Digital Experience Base	Instance Perpetual	1
Oracle Banking Digital Experience UX Extension Kit	Application User Perpetual	1
Banking Digital Experience Corporate Servicing	Financial Services Subscriber Perpetual	30

Product Description	Metic	Qty
Oracle Financials	Application User Perpetual	25
Oracle Hyperion Planning Plus	Application User Perpetual	25
Oracle Hyperion Financial Management Plus	Application User Perpetual	25
Oracle Project Costing	Application User Perpetual	5
Oracle Inventory Management	Application User Perpetual	20
Oracle Mobile Supply Chain Applications for Oracle Inventory Management	Application User Perpetual	20
Oracle iProcurement	Application User Perpetual	100
Oracle Purchasing	Application User Perpetual	100
Oracle Supplier Lifecycle Management	Enterprise Employee Perpetual	100
Oracle Sourcing for Oracle Purchasing	Application User Perpetual	20
Oracle Procurement Contracts for Oracle Purchasing	Application User Perpetual	20
Oracle Contract Lifecycle Management for Public Sector	Application User	10
Oracle Order Management	Application User Perpetual	20
Active User count		Less than 200

Indicative Sizing

INDICATIVE SIZING						OCPU - Intel		RAM		Unified Storage	
Environment	MODULE	SOFTWARE	TYPE	Mode	# of Nodes (or VM, as applicable)	CPU Cores Per Node	Total CPU Cores	RAM (GB) per Node	Total RAM (GB)	Total Boot + Data Disk (GB)	Total SAN (TB)
PRODUCT ION	Flexcube	Oracle DB EE, Diagnostics & Tuning Pack, Partitioning	Database Server	Single Node	1	12	12	192	192	200	3
PRODUCT ION	Flexcube	Oracle Weblogic Suite for Oracle Applications	Application Server	Real Application Cluster (2 Nodes)	2	6	12	96	192	200	
PRODUCT ION	Reporting	Oracle Analytical Publisher/Server	Reporting Server	Single Node	1	1	1	16	16	200	
PRODUCT ION	OBDX	Oracle Weblogic Suite for Oracle Applications	Application Server	Real Application Cluster (2 Nodes)	2	2	4	32	64	200	
PRODUCT ION	OBDX	Oracle Web Tier	Application Server	Real Application Cluster (2 Nodes)	2	1	2	16	32	200	
DR	Flexcube	Oracle DB EE, Diagnostics & Tuning Pack, Partitioning	Database Server	Single Node	1	6	6	96	96	200	3
DR	Flexcube	Oracle Weblogic Suite for Oracle Applications	Application Server	Single Node	1	6	6	96	96	200	
DR	Reporting	Oracle Analytical Publisher/Server	Reporting Server	Single Node	1	1	1	16	16	200	
DR	OBDX	Oracle Weblogic Suite for Oracle Applications	Application Server	Single Node	1	2	2	32	32	200	
DR	OBDX	Oracle Web Tier	Application Server	Single Node	1	1	1	16	16	200	

INDICATIVE SIZING						OCPU - Intel		RAM		Unified Storage	
Environment	MODULE	SOFTWARE	TYPE	Mode	# of Nodes (or VM, as applicable)	CPU cores Per Node	Total CPU Cores	RAM (GB) per Node	Total RAM (GB)	Total Boot + Data Disk (GB)	Total SAN (TB)
UAT	Flexible	Oracle DB EE, Diagnostics & Tuning Pack, Partitioning	Database Server	Single Node	1	3	3	48	48	200	2
UAT	Flexible	Oracle Weblogic Suite for Oracle Applications	Application Server	Single Node	1	4	4	64	64	200	
UAT	Reporting	Oracle Analytical Publisher/Server	Reporting Server	Single Node	1	1	1	8	8	200	
UAT	OBDX	Oracle Weblogic Suite for Oracle Applications	Application Server	Single Node	1	3	3	48	48	200	
UAT	OBDX	Oracle Web Tier	Application Server	Single Node	1	1	1	16	16	200	
DEV/SIT	Flexible	Oracle DB EE, Diagnostics & Tuning Pack, Partitioning	Database Server	Single Node	1	3	3	48	48	200	1
DEV/SIT	Flexible	Oracle Weblogic Suite for Oracle Applications	Application Server	Single Node	1	3	3	48	48	200	
DEV/SIT	OBDX	Oracle Weblogic Suite for Oracle Applications	Application Server	Single Node	1	2	2	32	32	200	

BOM x86(Intel):

Intel x86	Metric	PROD	DR	DEV	UAT	Total	Core Factor	Minimum NUP	Quantity
Oracle Database EE - PROD + DR	Processor	12	6			18	0.5		9
Add On: Real Application Cluster - PROD	Processor	12	6			18	0.5		9
Add On: Diagnostics & Tuning Pack - PROD + DR	Processor	12	6			18	0.5		9
Add On: Partitioning - PROD + DR	Processor	12	6			18	0.5		9
Oracle Database EE - DEV+MIG+TESTING	NUP			3	3	6	0.5	25	25
Add On: Real Application Cluster - DEV+MIG+TESTING	NUP					0	0.5	25	0
Add On: Diagnostics & Tuning Pack - DEV+MIG+TESTING	NUP					0	0.5	25	0
Add On: Partitioning - DEV+MIG+TESTING	NUP					0	0.5	25	0
						0			
Oracle WebLogic Suite for Oracle Applications - PROD + DR	Processor	16	8			24	0.5		12
Oracle WebLogic Suite for Oracle Applications - DEV+MIG+TESTING	NUP			7	7	14	0.5	10	10
Oracle Web Tier	Processor	2	1						3
Oracle Web Tier	NUP				2				2
Oracle Enterprise Manager	Processor					0	0.5		1
Oracle Analytical Publisher/Server	Processor	2	1						3
Oracle Analytical Publisher/Server	NUP	0	0	5	5	10	0.5		5
Sub-Total									