Advantages for DB consolidations, upgrading / patching or provisioning – cost-cutting or cloud computing tools

THE WINNNING HAND: ORACLE MULTITENANT

The release / availability of the Oracle 12*c* Multitenant option means that SAP Oracle customers can use the innovative and beneficial feature of the Oracle Database for SAP to their advantage. The key factor in this regard is the simple structure and effective use of DB containers (container databases) with multi-client capability and pluggable databases for the likes of cloud computing based on a new architecture.

The Oracle Multitenant architecture is the basis for using an Oracle database as a multitenant container database (CDB), where a CDB (as a single instance) may contain zero or several (up to 256) usable pluggable databases (PDBs). Hardware resources can thus be minimized significantly in some cases; the management or administrative activities involved when dealing with the likes of DB upgrades / patches, or during backup / recovery tasks, can be reduced considerably too.

For example, when consolidating Netweaver-based SAP systems (such as DEV, QA or test systems), several pluggable databases can be installed and configured in a single container database (one instance), and can then be used or operated for an extremely wide range of purposes. The various database features of a non-CDB Oracle database are also applicable to the pluggable databases to be used too. And, what's more, they can even be applied independently. PDBs are based on a CBD's background processes. Potential uses of the CDB architecture (including data dictionary) in the Netweaver-based SAP environment are outlined in the relevant SAP Notes, in the likes of SAP Note 2336881).

Numerous potential benefits

Without a doubt, the Oracle 12c Multitenant option offers a variety of benefits for SAP Oracle customers. These include:

- Consolidation measures – with optimized use of resources

Because all PDBs in a CDB share the same Oracle instance (and Oracle Home), system resources (CPUs, memory, processes) are either saved or reduced significantly. From a resource standpoint, so to speak, only one database instance exists despite there being multiple pluggable databases.

- Management of several databases as one

When administering, controlling and operating one database instance, fewer administrative or maintenance tasks are needed as would be for several database instances thanks to the Oracle 12*c* Multitenant option. And this gives rise to time and cost savings. One CDB backup, for example, creates backups of all the PDBs in one go. CDB database parameters are set and can be used for all PDBs, so they are ideal for operating different SAP Oracle PDB databases. For all the (grouped) DEV or QA systems in a container database, for example.
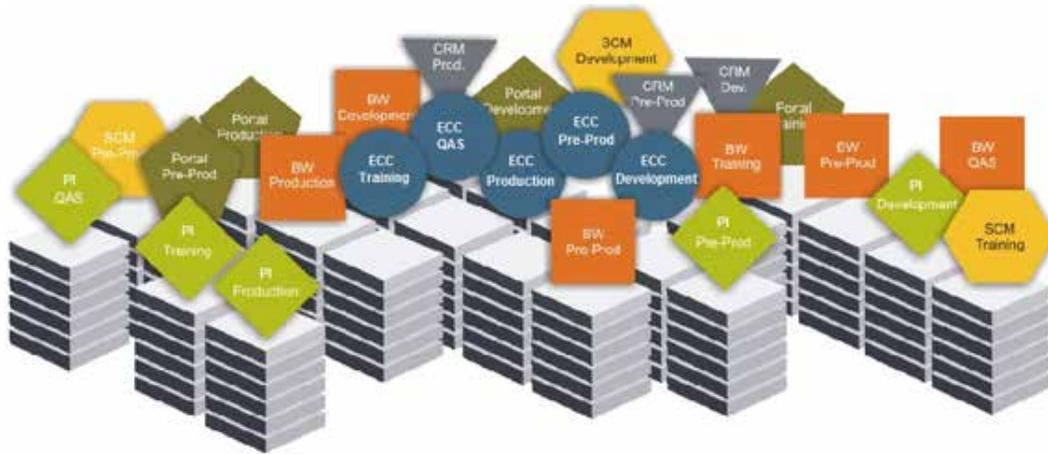
- Efficient upgrades and patches

Additional expenditure for upgrades and patches can in some cases be significantly reduced with the Oracle 12*c* Multitenant option. If the parameters have been implemented / configured in the CDB once, they exist in all of a container database's established PDBs and are automatically executed.

- Rapid provisioning, extremely short cloning time

For whatever purposes a database or an SAP system has to be set up or cloned, the work needed to do so can be carried out quickly and easily with the Oracle 12*c* Multitenant option

- Increased protection and availability

If you need to transfer a used database type (RAC or Single Instance, Data Guard) to other SAP Oracle DBs, a CDB can be used as a framework for multiple SAP PDBs. This means, for example, that a single Instance database environment can be easily transferred to an RAC environment, or that a non-Data Guard environment can be transferred to a Data Guard environment.

The SAP BR*Tools are used for administration of the Oracle 12*c* Multitenant option for SAP. Additional prerequisites include Oracle Database 12*c* (12.1.0.2) and the Oracle Multitenant feature, SAP NetWeaver 7.40 (Unicode) and above, SAP SWPM 1.0 SP19 and above, and the SAP BR*Tools (7.40 patch 24 and above)

Additional information about the Oracle 12*c* Multitenant option can be found in the relevant SAP Notes and in the Oracle Whitepaper.

SAP Notes:

2333995 BR*Tools Support for Oracle Multitenant
         Database
2335850 Transformation of Existing Standalone Database
         into Pluggable Database
2336881 Using

In a typical SAP environment with several production databases, there will be several dozen non-productive SAP databases too (e.g. Dev, QA, Pred-Prod, Training etc). With the Oracle 12*c* Multitenant option SAP Oracle customers can group similar databases together for the same level of system management functions. For example: group DEV for ECC, BW, CRM, and SCM to manage in one container. All DEV systems have the same backup, patch requirements, and DR requirements. Similarly, all QA system databases can be grouped together. When additional systems (e.g. SRM) must be added, the DEV, QA, test etc. can simply be put into pre-existing containers and SAP Oracle customers do not need to worry about the backup / DR setup at all.

Customer requirements – implemented with the Oracle 12*c* Multitenant option

Typically not all customer requirements are identical. Below are some challenges / tasks that various customers around the globe have overcome with the Oracle 12*c* Multitenant option:

- Eliminate several small systems (even virtualized ones) using too many hardware resources

- Decrease database implementation and main tenance costs by reducing the complexity of the existing IT infrastructure components to free up IT staff for more strategic tasks

- Reduce footprint and costs by managing the IT infrastructure with fewer servers

- Reduce the time spent on administering many small DB systems

- Goal of management: „Bring applications back up to the current level!"

- Build an environment that is supported, sustainable and reliable

- Enhance business continuity awareness and ensure uninterrupted manufacturing opera- tions in the event of a disaster