SAP Tips Guide

1. Introduction

To configure a virtual clock in an Oracle/SAP environment, one would need to set the SAME virtual clock for the user, SAP instance and Oracle instance uid. The SAP and Oracle instance uid is the owner uid that installed the SAP and Oracle binary. If the user is remotely connected to the Oracle database, then the Oracle listener uid should be set to the same virtual clock as well.

2. Commands

This can be done with a single tmuser command. For example, **tmuser –a –u sapadm –u SAPServiceNSP –u oracle –y 1** to set the virtual clock one year forward for sapadm, SAPServiceNSP and oracleusr at the same time. If your SAP and Oracle are running from different systems, then it is important to set both the SAP and Oracle to the same virtual clock. This can be done by either a script which remote login to each system and set the same virtual clock or can be done via our web console product, which can synchronize a virtual clock across multiple unix and windows systems.

3. Setting Virtual Time Forward

When the virtual clock is set, SAP and applications will see the new date and time immediately. There is no need to shutdown or restart SAP and Oracle as long as the virtual time is jumping forward. Many hours or days can be saved per virtual clock change this way.

It is common to test multiple different dates during a test cycle. It is advantageous to organize the date jumping such that every jump is going forward in time. As a result, no shutdown or restart is needed and valuable time and resources will be saved.

4. Setting Virtual Time Backward

When virtual time jumps backward, (i.e. reset/delete of a virtual clock to revert to system clock when the virtual clock was set in the future) then it is a good idea to shutdown SAP and Oracle before setting the time backward.

Setting the virtual time backward, there is no requirement to restore the data. At the time of restart, SAP and Oracle will function correctly.

5. Restoring the Database

When setting the time back, there are two cases. If you need your tests to have the exact same starting point, you will need to shut down and restore the database so that it has the same starting point ready for the next cycle. If the data does not need to be the same, then you only just need to shut it down. Testers restore their databases for the repeatability of their tests by making sure that when they start a test, the data is exactly the same. If this is not a requirement for you, then no database restoration will be necessary, simply shutting it down and changing the clock back will be sufficient.

6. Setting Multiple Clocks

Time Machine supports multiple virtual clocks. By setting different virtual clocks, one test environment can become multiple test environments where testers can test different dates concurrently! To do so, one must install multiple instances/binaries of SAP and Oracle under different owner uid. Subsequently, different virtual clocks can be set against different uid; the tester can connect to the corresponding instance based on which virtual date they will test. Large amounts of hardware, software and maintenance costs can be saved this way.

Please note that a common scenario is to be able to test one virtual clock and one under the current system time. This also requires the two instances of SAP and Oracle set up, where one instance runs the virtual clock and the other runs the system clock.

7. Excluding Programs

Lastly, the SAP backup program should see the system time, not the virtual time. If SAP backup is run under the same uid to set the virtual clock, then the SAP backup program should be excluded to see the virtual clock. Time Machine provides exclusion capabilities, where an excluded program will always see the system clock. Simply adding the backup program name into the exclusion configuration file **/etc/ssstm/tmexcl.cf** will exclude it at all times.