



www.[DanHotka.com](http://www.DanHotka.com)
Quarterly Newsletter

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Dan Hotka is a Training Specialist who has over 30 years in the computer industry and over 24 years of experience with Oracle products. He is an internationally recognized Oracle expert with Oracle experience dating back to the Oracle V4.0 days. Dan's latest book is the [SQL Developer Handbook](#) by Oracle Press. He is also the author of [Oracle9i Development By Example](#) and [Oracle8i from Scratch](#) by Que and has co-authored 7 other popular books including the [Database Oracle10g Linux Administration](#) by Oracle Press. He is frequently published in Oracle trade journals, and regularly speaks at Oracle conferences and user groups around the world.

Invite Dan to speak at your next event.

S Summer is here along with record fuel prices. I'm still planning on a July RV trip that will include training in Salt Lake City (see public offerings) and speaking slots at the PSOUG (see User Group Information).

I just crossed 30 years in the IT field. It has been a good ride. I first worked with computers in the 8th grade...simple Fortran programs on 80 column cards. I studied COBOL on an IBM 360/40 in college...again...80 column cards. My first computer job was a computer operator working with a Burroughs 1700 with 32K (not megs) of RAM and this machine worked with 96 column cards. The processor was about the size of a large 4-drawer file cabinet.

I didn't get away from cards until my first vendor job, Sperry Univac. These folks trained me in Unix and Oracle (version 4) and springboarding my career. I have not really slowed down since. I worked with paper handling machines on my 2nd job (what does a 'decalator' do?). The burster and its paper slitters was not my friend (cut a bunch of paychecks in half one day before getting the thing stopped). I have also worked with CP/M and early DOS machines.

I still have friends from almost every job I've ever had (including my high school/college job at Pizza Hut – thank you CW!). Thank you

Summer 2008

for keeping in touch through the years.

It has been a great 30 years with not many regrets. I am a technician, an author, a world traveler, and an entrepreneur. I have a presentation that combines the various hardware and software platforms from my past along with a humorous review of some of the folks I've met along the way. Ask me to present "30 Years of Taking Care of Business – A Look at the Past".

I am enjoying my current training business. I've been so busy that I can't call my self-employment a part-time position this year. I have time for appointments in September and maybe November. Otherwise my year is pretty full.

I have organized my investments and savings into a single spreadsheet. I have built some neat 'future value' calculations that allow me to see the future value of my current investments...look for my 'Future Value' calculation for Excel in this newsletter.

If you need training, be sure to check on my public offerings. Keep me in mind for on-site training as well.

This newsletter contains a review of the Oracle Database 11g PL/SQL Programming book. I illustrate some of the new features of TOAD 9.6 that I find of value. I discuss Oracle Trace, the valuable tuning

resource that comes free with Oracle. This newsletter will discuss its value and how to initiate it with scripts that aid in starting and stopping the trace process. The Fall newsletter will take a close look at the contents of the trace files.

This newsletter, along with all prior newsletters, are available at www.DanHotka.com.

What's in this issue?

Product Review

- TOAD New Features
See Page 6

Public Training Offerings

Watch for Dan in your area with these courses. Contact Dan for course details and enrollment. Check www.DanHotka.com, click on Onsite Training for course outlines, or, just ask Dan.

July 28 - 31, 2008 Oracle PL/SQL Programming (Ames, Iowa)

August 12 - 14, 2008 Oracle SQL Performance and Tuning (Minneapolis)

August 15, 2008 TOAD Tips and Techniques (Minneapolis)

Sept 30 – Oct 1, 2008 Oracle/Siebel Analytics for End Users (Minneapolis)

December 1 - 3, 2008 Oracle SQL Performance and Tuning (Minneapolis)

December 4, 2008 TOAD Tips and Techniques (Minneapolis)

December 16 - 18, 2008
Advanced PL/SQL
Programming (Minneapolis)

User Group Information:

- See Dan at the PSOUG Oracle Days!
- See page 3 for Dates and Submitted Papers.
- I have several new presentations for User Groups – See New Presentations. A complete list of topics is at www.danhotka.com

Oracle Trace – Part 1

Oracle Trace review and useful commands/scripts to start/stop the trace process. Page 3

Excel Future Value Calculation

Know the future potential of your savings/investments. See Page 4.

Book Review

Oracle Database 11g PL/SQL Programming

Check out this useful book by Michael McLaughlin on page 4.

Free Downloads

Useful information page 6.

Educational Offerings

- My Training Pricing Model – up to 15 attendees for 1 low price!
- On-site at your company or in your city via user group participation...see Educational Offerings.

Featured Presentation

- Why is my Oracle10g Database slower than my Oracle9i Database?
Popular presentation last given at Collaborate 08. Details on page 6.

The Back Page:

- Flood of 2008

Puzzler...

What was the very first personal computer?

Choose Your Answer: TRS-80, Commodore PET, Kenbak-1, Apple I? (Source www.usefultrivia.com)

Win a book...send me your ideas for the Puzzler with the solution and if I print it, I'll send you a book!

Go to www.DanHotka.com for the answer!

User Group Information

See Dan in 2008 at these events:

OracleDays 2008 July 17 - 18 (Puget Sound, WA)

Discoverer Tips and Techniques

All the Free Stuff from Oracle

www.PSOUG.org

I am available to speak at your user group. A complete listing of available topics is on my website.

Let me know what you would like and I can fill your timeslot.

Oracle Trace

The Oracle Trace Facility was introduced in/around Oracle7. This useful tool collects SQL statements, their associated bind variables, and the wait events (work they caused Oracle), along with a variety of useful statistics...for an individual session, another session, or the entire database.

It is important to note that the explain plan associated with the SQL statement in this trace file is indeed the explain plan that Oracle used when executing the SQL. Explain plans from tools such as SQL*Plus Autotrace, TOAD's and SQL Developer's Explain Plan button...populate the PLAN_TABLE using syntax such as 'Explain Plan for <SQL statement>;'...but isn't the actual explain plan used by Oracle when executing the SQL code.

I plan to update my 'show_plan.sql' script to display explain plans from the V\$SQL_PLAN table...these explain plans are the ones executed with their associated SQL.

Starting and Stopping Trace File Collections

If you can recreate the problem, then the trace facility can capture the problem SQL.

Oracle Trace generates a raw trace file (*.trc) that contains info about SQL statements. This trace file is created in the USER_DUMP_DEST location. This trace file, or SQL trace file, is called a 10046 trace as well. This is pronounced "ten-forty-six". There are several levels of information that can be collected. You will always want to use the extended or level 12 trace. The additional information collected is

useful and it doesn't take any more time to collect the additional information.

- Trace Level 0 no statistics
- Trace Level 1 includes statistics
- Trace Level 4 includes any bind vars + statistics
- Trace Level 8 includes wait events + statistics
- Trace Level 12 includes all

****Tip**** Do not try to do timings while running a SQL trace as the trace is always doing physical I/O to the trace file.

These commands are useful to turn SQL trace on for your current session.

-Session level:

- Alter session set tracefile_identifier = 'xxx'; (adds a name to the end of the trace file...only works with session level traces)
- Alter session set sql_trace = TRUE;
- Alter session set timed_statistics =TRUE
- or-
- alter session set events '10046 trace name context forever,level 12';
- alter session set events '10046 trace name context off';

Use these commands to trip trace on/off for a different session:

- DBMS_SYSTEM.set_sql_trace_in_session(<sid>, <serial#>, true); ...use FALSE to then turn off the trace...
- V\$session
- Does not start the extended 10046 trace options...
- Or
- DBMS_SYSTEM.set_ev(<sid>, <serial#>, 10046, 12, '')
- DBMS_SYSTEM.set_ev(<sid>, <serial#>, 10046, 0, '')
- DOES start the 10046 extended trace options

These commands also turn SQL Trace on/off (thank you Tim Gorman):

-Unix

- SQL> select spid from v\$process where addr in (select paddr from v\$session where ...);
- SQL> oradebug setospid <SPID-value>
- SQL> oradebug unlimited
- SQL> oradebug event 10046 trace name context forever, level 12

-Windows

- SQL> select pid from v\$process where addr in (select paddr from v\$session where ...);
- SQL> oradebug setorapid <PID-value>
- SQL> oradebug unlimited
- SQL> oradebug event 10046 trace name context forever, level 12
- SQL> oradebug event 10046 trace name context forever, level 0

The trace file will be created in the USER_DUMP_DEST location (from V\$Parameter) with this file name format:

<OracleSID>_ora_<spid>.trc .

If the tracefile_identifier was used, it will follow the spid. Spid is a column in V\$Process.

Sample Session Level Syntax

Example:

- ❖ Alter session set max_dump_file_size=unlimited;
- ❖ Alter session set timed_statistics=true;
- ❖ Alter session set tracefile_identifier='HOTKA';
- ❖ Alter session set events '10046 trace name context forever, level 12';
- ❖ **Run your code here **
- ❖ Alter session set events '10046 trace name context off';

I have created some useful SQL*Plus scripts that run these commands for you. I have built scripts to start and stop SQL Trace for both a current session and a different session.

The current session script also sets the tracefile_identifier option.

In the next newsletter we will explore how to view the contents of these trace files and what the information means.

Email me and ask me for the SQL Trace scripts.

Educational Offerings

Remember that my portable computer lab make these courses very easy to teach at your site. The cost of this lab is included in my 1-fee pricing model (see below).

2008 has been a year of PL/SQL and SQL Performance Tuning. I have been doing training for 5 years now (where does the time go...) and have noticed definite patterns of training.

My PL/SQL offerings include both Intro to PL/SQL (a 2-day course) and Advanced PL/SQL (a 3-day course). Both courses cover using the Oracle PL/SQL Profiler and other PL/SQL tuning topics.

The focus of my SQL Performance Tuning course is to cover exactly how Oracle arrives at the explain plan, how Oracle uses/includes indexes in these plans, and tuning using coding style that I find helps maintain the tuned SQL stay tuned.

I have adapted this course to 1-day, 2-days, and 3-day offerings. This course also illustrates various tuning tools such as Stats Pack, SQL Trace, and the PL/SQL profiler, as well as advanced topics that include SQL Profiling, finding SQL problems using the V\$ tables, and Oracle10g performance issues.

Training Pricing Model

I price my courses at a fixed rate for up to 15 attendees. This rate compares to the price that others charge for just 2 to 4 attendees. This course fee includes the use of my portable computer lab. There is a separate per attendee charge that covers the cost of the student guide and any additional books that might be associated with the course. This student fee is anywhere from \$50 to \$150, depending on the course.

Current Course Offerings

Give your technical staff that competitive edge with Oracle Workshops! These courses are designed to enhance your staff's skill set to perform their job better.

These workshops are designed to be held at your location. These courses use my portable computer lab. On-site instruction enables more people to be trained with the same training dollar.

The course utilizes a variety of current tools. Students will have the opportunity to learn more about SQL Developer, TOAD, TextPAD, as well as the Oracle tools like SQL*Plus, iSQL*Plus, and Dan's new Java-based SQL Tuner.

Oracle SQL Performance Tuning Tips and Techniques (1-day, 2-day, or 3-day offerings)

TOAD for IT Staff

SQL Developer for IT Staff

Oracle Analytics/Answers for End Users

Oracle Analytics for Administrators

Oracle Discoverer for End Users

Oracle Discoverer for Administrators

Introduction to Oracle (SQL)

Oracle Intro to PL/SQL

Oracle Advanced PL/SQL

Oracle Fundamentals

Oracle10g New Features for Developers

Introduction to UNIX/Linux UNIX/Linux Shell Programming

Oracle/Unix Scripting Tips and Techniques

Book Review

Oracle Database 11g PL/SQL Programming

ISBN: 978-0-07-149445-8

By: Michael McLaughlin

Publisher: Oracle Press/Osborne.

I am using this book as a resource to update my Intro and Advanced PL/SQL course offerings.

This book makes a great reference guide complete with all the new features of the PL/SQL programming language as it pertains to the Oracle 11g Database environment.

This book contains chapters on:

- 11g PL/SQL New Features
- 10g PL/SQL New Features
- PL/SQL Basics
- Collections
- Functions/Procedures
- Packages
- Large Objects
- Triggers
- Dynamic SQL

- Intercession Communications
- Java
- Web Stuff

The appendices include primers on:

- Admin Stuff
- SQL
- PHP, Java
- Built-ins (functions)
- Regular Expressions

These chapters all contain Oracle11g PL/SQL features on these various topics.

This is a 'must have' book when moving forward with Oracle11g.

Nice job Michael.



Excel Future Value Calculation

I am in my early 50's and am interested in knowing just how long my funds will last in retirement, based on my current investments and a steady level of growth (I know this is unrealistic...). As the

years progress, I'll be able to provide my calculation with a better % of growth that includes both income and growth of investments.

I have put up an excel spreadsheet that documents my savings and investments.

This year, I added a Future Value Calculator. I enter a percent of growth, number of years till withdraw, and how much to withdraw monthly for 20 years after this period.

I gave this calculator an original investment of \$100,000, at 5 percent with 13 years till I start withdrawing it. When withdrawing \$1000/month, after 20 years, my calculator shows that I'd still have over \$59,000 remaining.

Future Income Calculator				
Rate	Year	Future Value	20 Years Monthly	Ending Balance
%Growth	Withdraw	(Calculated)	Withdraw	(Calculated)
0.05	13	\$100,000.00	\$1,000.00	\$59,000.13

The Future Value calculation is: $=D38 * (1+F39)^G39$...plug this into the Future Value cell where D38 had the 100,000, F39 had the % growth, and G39 is the number of years till withdraw.

I could not find a good single calculation for the withdraw that took into account the continued 5% growth on the remaining balance per year.

I solved this by going to sheet 2, having 20 columns where each column calculated the current value based on the contents of the prior column less the monthly withdraw (times 12). I used this calculation for Sheet 2.

The first cell used this calculation, bring in the calculated future value (column H39 in this example). I39 is the monthly withdraw.

$$=Sheet1!H39 - (Sheet1!I39 * 12) * (1 + Sheet1!F39)$$

The second year uses this calculation where B1 is the result of the above calculation:

$$=ROUND((B1 - (Sheet1!I39 * 12)) * (1 + Sheet1!F39), 2)$$

Each remaining cell uses this calculation incrementing the B cell. $= (B2 - (Sheet1!I39 * 12)) * (1 + Sheet1!F39)$

After 20 iterations, the final amount is referenced on Sheet 1 "Ending Balance". $=Sheet2!B20$

If you have a better or single calculation that will provide this functionality...please email it to me and I'll test it and publish it in a future newsletter.

BTW: if you take the Future Value calculation and make the exponent a negative number will reveal how much original investment will be needed to reach a monetary goal.

I found this calculator very useful in helping me play 'what if' scenarios with my current and future available funds. This calculator allows me to visualize the extra monthly income my current and future investments will generate.

Product Review

TOAD 9.6 New Features

I have to say one of my most favorite 9.6 features is the PL/SQL profiler. This feature has been in TOAD for a while now but the TOAD team revamped the interface and it is much easier to use now.

Schema Browser now has a history function that makes navigating to recently-accessed objects a snap. The left-side tabs are easier to configure.

SQL Recall is now a slide-in/slide-out feature.

TOAD supports Projects that allow you to organize your work by Application or Project by right clicking on an object(s) and selecting 'Add to Project Manager'. Having a Project defined will allow you to now filter your object list by Project.

The former SQL Editor, PLSQL Editor, and offline editors have been condensed to a single window for all of your SQL, PL/SQL, anonymous block, SQL*Plus script, XML, etc editing and ad hoc querying the database

Code Insights have been greatly modified to include:

- Tables
- Views
- Aliases
- Functions|Procedures|Packages (with methods)
- Types (with attributes and methods)
- Java Source
- Sequences

Users
Public Synonymns

TOAD now has a Stats Pack Browser. This interface nicely graphs the various statistics between 2 statspack reports as well as allowing you to see the actual statspack report!

Learn how to use all of these features in my 1-day TOAD class.

The Fall Newsletter will cover various tuning interfaces available in TOAD.

Featured Presentation

Why is my Oracle10g Database slower than my Oracle9i Database?

Have you migrated your business applications to Oracle10g from prior versions to have them suffer from unexplained performance issues? Do you notice that the explain plans have changed and indexes that were previously used in the prior database environment are now not being selected?

If so, then this is a must-see presentation. Dan will discuss a little-known Index statistic and the impact this has on new tablespace features now available in Oracle10g. Dan will even provide a script that will help identify if your database environment is suffering from this issue.

Free Downloads

Oracle SQL Trace Start and Stop Scripts: Use these scripts to start and stop the Oracle Trace. Ask Dan for these SQL*Plus scripts: Email DHotka@Earthlink.net

Oracle PL/SQL Profiler Paper and Script: Learn how to use this free PL/SQL profiler from Oracle Corp. The paper also covers using the PL/SQL Profiler from TOAD. Download this paper and script from www.DanHotka.com.

JS Tuner: Email DHotka@Earthlink.net and request this tool. This tool will assist you with enhanced explain plans and useful index info/hints/and SQL history at your fingertips.

JS Analyzer: Email DHotka@Earthlink.net and request this tool. This tool makes running the character-mode TKProf and SQL*Plus interface Trace Analyzer a snap. No more typing long trace file names.

The Back Page

Flood of 2008

The 500-year flood has hit Iowa again after just 15 years. This flood is being called the Tsunami of the Plains. The rain in the state has just not stopped.

The levees reinforced after the flood of 1993 (that took with it the Des Moines Water Works) seemed to hold much better and for the most part, kept the river out of downtown Des Moines.

I helped by filling sandbags.

Cedar Rapids was not so lucky. On Wednesday June 11, 400 blocks of Cedar Rapids was under at least twelve feet of water. The Cedar River took all of the downtown area. By the weekend, the river had taken 1000 city blocks, flooding more than 2500 homes and businesses.

The Coralville Strip in the Iowa City area was flooded from the Iowa River. The Iowa City Park always floods but the University of Iowa had 8 buildings flooded, threatening a dozen more including the main college library.

Iowa City was down to just the I-80 bridge and the Benton Street bridge. Des Moines...all the downtown bridges were closed as was Euclid Ave (the old Target area flooded as well). Interesting how one does not think about crossing the river until you can't. Traffic was snarled in Des Moines. I live near Merle Hay Road and it was

just packed with cars. I-80 approaching the Merle Hay Road was slow going with gawkers...water very near the highway. People would stop on the interstate to take pictures.

The IDOT closed I-380 between Iowa City and Cedar Rapids. Cedar Rapids has the major airport for eastern Iowa. Hwy 1 north of Iowa City was closed as well. There were no routes between Iowa City and Cedar Rapids. I-80 flooded near Attilisa where it crosses the Cedar River. All traffic was diverted from the Quad Cities north to almost Dubuque, across Hwy 20 to I-35 and back down to I-80 at Des Moines.

I had a cousin visit from the San Francisco area. He flew in/out of the Cedar Rapids airport and got to Iowa City before they closed I-380. To catch his flight home, he had to drive to Des Moines on I-80, north to Hwy 20 on I-35, and across to Waterloo and down to Cedar Rapids...a 4 hour drive versus 25 minutes normally.

There is still much standing water in Des Moines, Iowa City, and especially Cedar Rapids. There are so many displaced people.

If you give to the Red Cross, give today. They have done a wonderful job helping the families displaced by the flood of 2008.