

Pair Programming:

Diffusion of Know-how and Error Prevention

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Robots
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Editorial

Dear Oracle User Group Members,

I'm delighted to open this #12th edition of the wonderful ORAWORLD, our online e-magazine, which is written, arranged and published by Oracle users, for the Oracle community, and now you can even enjoy it more since it is published every two months.

Few weeks ago, we've all heard from Oracle's executives and especially from Larry Ellison, about the latest announcements on the newest technologies and innovations offered by Oracle, and especially about the Autonomous Database, now offering 3 main database services: the Autonomous Data Warehouse, the Autonomous Online Transaction Processing and the newest NoSQL Database Service.

At this time, I would like to point you to the wonderful ClocWise.org, a community website built solely for the Oracle user group community where you can find in one central location all upcoming events and call for papers, in an easy to read timeline based navigation. Check it out here: www.ClocWise.org.

Another important event I would like to mention is the EOUC Leaders meeting which took place during the last DOAG conference in Nuremberg, where over 30 user group leaders from more than 25 different countries across EMEA met together in order to discuss how the Oracle user groups can better collaborate, share and explore best practices to promote and empower each other in order to provide an even better experience for our Oracle user group members, and enrich the global Oracle user group community. I would like to take the opportunity and thank the wonderful team at DOAG for arranging this meeting and the great hospitality we've all experienced during our stay.



Ami Aharonovich
Oracle ACE Director
President, iIOUG
Ambassador, EOUC

I would like to thank everyone who contributed to this really amazing edition of ORAWORLD and shared their articles, thoughts and ideas with the user group community. I invite you all to continue your contribution to the magazine and submit new content on our website: www.ORAWORLD.org. We are all looking forward to your submissions and feedback.

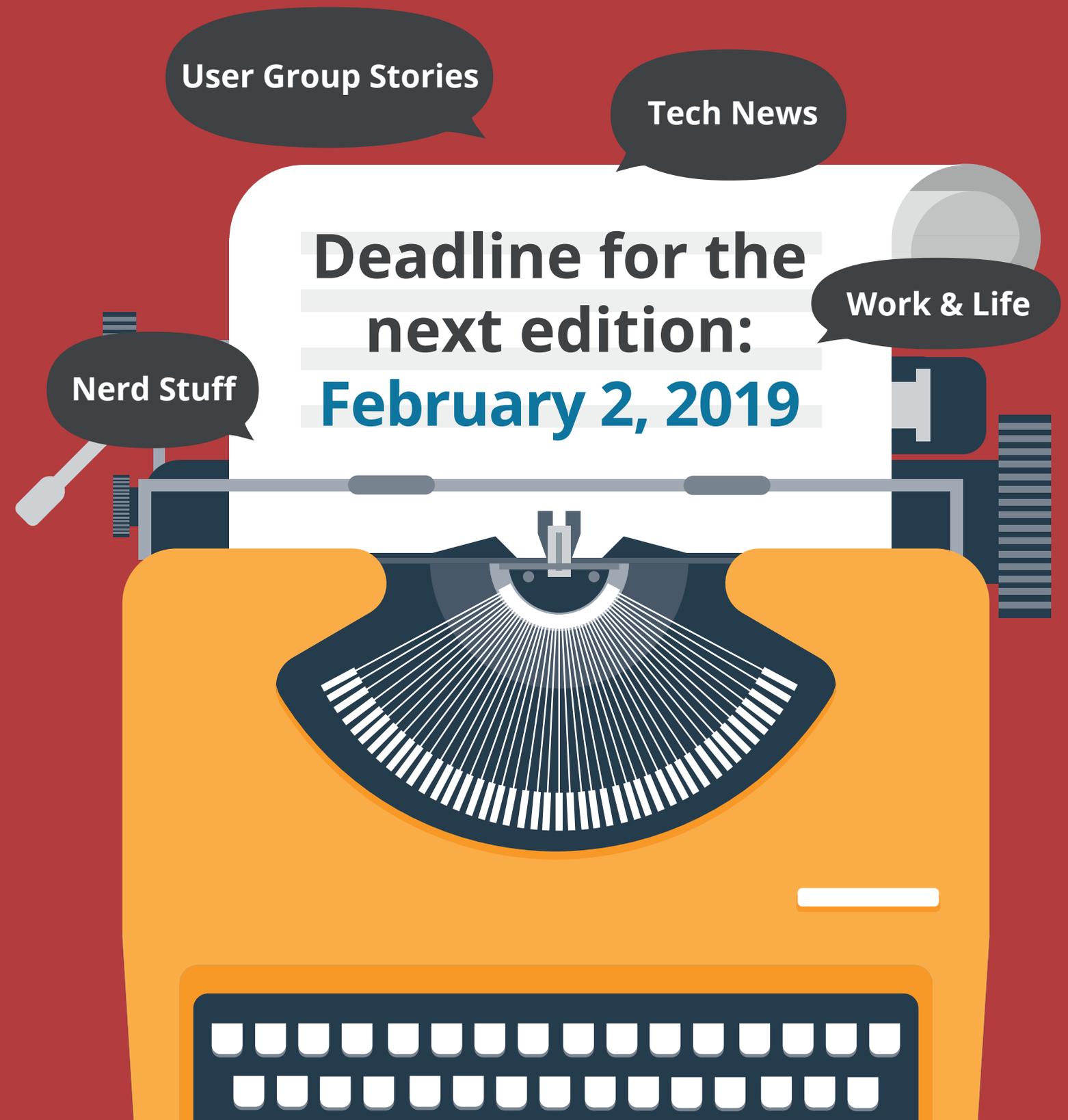
I wish you all an enriching and enjoyable reading as well as "Merry Christmas" and a "Happy and Successful New Year!" Hope to see you all again next year!

Yours
Ami Aharonovich

Submit Your Article!

You have an interesting topic to publish in ORAWORLD Magazine? Then submit your article and be part of it!

Please e-mail us your article via the online form at www.oraworld.org.



Trolling the AI

www.commitstrip.com



CommitStrip is a daily strip recounting funny anecdotes of life as a coder mixed up with a dash of topical tech news. Find more comics here: www.commitstrip.com

The Most Incredible Inventions: Robots Lisa Damerow

Modern technology never comes to a halt. Whether useful gadget or questionable knick-knack – incredible inventions you never thought possible are conquering the markets. Right at the front: Robots. We will introduce you to some of the most unique robots.

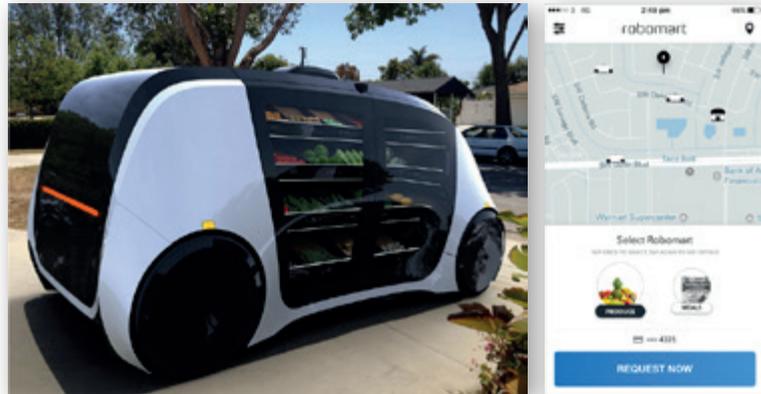
Somnox™ Sleep Robot

Advertised as the “ultimate sleep companion”, Somnox is a bean-shaped robotic pillow. Supposedly, Somnox improves your night’s rest naturally due to the utilization of breathing regulation, affection, comfort and sounds. Yes, it actually breathes and even simulates a heartbeat if you want it to. It also comes with an App that will allegedly allow you to download more “intelligence” for Somnox later on, like an alarm and a sleeping coach. Interested parties could pre-order the cuddly little robot in August 2018 for 549 US dollars with an estimated delivery in October. In 2015, engineers at Delft University in the Netherlands began working on a prototype. „We were robotics engineers, personally exposed to the effects of sleep deprivation,” says Julian Jagtenberg, Somnox’s co-founder, in an interview. „We designed a soft robotic prototype to help ourselves and our family members get sleep again,” he says. “We fell asleep faster, we slept longer. Once people we didn’t know started reaching out to us because they were having a hard time falling asleep, that was the moment we decided this shouldn’t be just an academic project.”



SpotMini

Boston Dynamics has created a whole lot of famous robots. Besides the terrifyingly mobile humanoids Atlas, WildCat and BigDog, their newest invention is called SpotMini. It is a small, all-electric robot on four legs that weighs 66 lbs (about 30 kg) and has been featured in various viral online videos where it climbed stairs, opened doors and even fought off a human armed with a hockey stick. Its movement is oddly natural and pretty close to an actual animal. According to Boston Dynamics, it is the quietest robot they have built yet. If you are interested in acquiring one of these, they are announced to go on sale in 2019. The price, however, has yet to be announced but it probably will not be cheap. But see this bizarre companion in action for yourself: <https://youtu.be/tf7IEVTDjng>



Robomart

If we were not convinced before, we definitely are now: The future is here. The Robomart is a driverless grocery store on wheels that will bring food to you by request through an App. When it arrives, you simply pick the products you want and send it on its way again. The robot will track what you took and charge you accordingly. The company plans to deploy the initial fleet by the end of 2018 in the San Francisco Bay Area.

FORPHEUS

FORPHEUS was presented at CES 2018 and fascinated the crowd. This robot can play ping-pong and will put your skills to shame. It utilizes time-series deep learning AI technology which allows it to learn and foresee its opponents next move. While there are no plans to commercialize this device it still shows off Omron Corporation's incredible abilities of automation and AI. The point of it is, however, to improve human capabilities. The company's goal is to achieve harmony between people and machines. See this incredible masterpiece in action for yourself: <https://www.youtube.com/watch?v=yOT8p5hKQRM>



Aeolus Robot

The San Francisco-based company Aeolus Robotics is currently working on a robotic assistant that helps you run your household and is pretty much what dreams are made of. A prototype of the Aeolus robot was just unveiled at CES 2018. The robot has a wide range of useful abilities: It delivers and cooks food, picks up clutter, locates lost items and cleans the house while also analyzing your lifestyle and improving its service to your needs. That means it will remember and bring you your favorite beverage while you watch it clean after you. Fantastic, is it not? Of course it is voice controlled and has the ability to integrate with common smart home technology systems. When asked about its price, Aeolus Robotics only claims it would “cost less than a family vacation overseas”, so better start saving!



Ovis

If you travel a lot and get annoyed by constantly having to drag your suitcase around, the ForwardX Ovis might be the perfect gadget for you. This smart AI-powered suitcase frees your hands by automatically following you with a maximum speed of 10 km/h on most surfaces, detecting and avoiding obstacles. By simply grabbing its handle you can switch to manual mode. Ovis is TSA (Transportation Security Administration) approved and due to its removable battery you will get through airport security just fine. This smart suitcase also allows you to charge your devices on-the-go. It comes with a smart band for your wrist that will alert you when the battery is low or if Ovis is more than 2 meters away from you. An App for your phone tells you pretty much everything from luggage weight to battery life. If you are interested in acquiring your own Ovis, you can pre-order it for 439 US dollars, which is supposedly saves you 50 percent off the retail price. According to the website, estimated delivery is December 2018.

Winbot X

Meet the Roomba's distant cousin: The window cleaning robot Winbot X by Ecovacs. This little device defies gravity by attaching itself to your window and automatically identifying the smartest path to clean it efficiently. It is especially useful for houses with huge windows you cannot normally reach. The major difference to its competition: It does not need to be connected to a power supply.



BUDDY

BlueFrog Robotics' BUDDY was unveiled at CES in 2018. He is a companion robot designed to improve the whole family's everyday life. The 60 cm tall robots' skills include protecting your home by patrolling and alerting you in case of anything unusual, suggesting recipes, answering the phone for you, setting alarms and reminders, entertaining and educating the kids and much more. BUDDY also connects to smart home solutions to control them for you. This little guy also makes for the perfect elderly care nurse with fall and unusual inactivity detection, medication reminders and easy access to technology. BUDDY is also equipped with a wide range of emotions that will change throughout the day depending on his interactions with people. He can speak, hear and move his head.

FoldiMate

The FoldiMate does exactly what its name suggests: It folds your laundry. You just feed it with your clothes (no matter what size) and towels and out it comes, neatly folded. However, since you have to put every individual item into this robot's clipping mechanism, you are not completely spared from the task. The first shipments of the newest, improved model are announced to start in late 2019 and the estimated price is roughly 1,000 US dollars.



Aibo ERS-1000

Are you a dog lover but cursed by being allergic to pet hair? Then this may be something for you! On November 1, 2017, Sony Corporation announced their newest little life-like dog robot, AIBO ERS-1000. It is the first model to be released after the discontinuation of AIBO's in 2006. This entertainment robot makes for a great pet designed to act like a real puppy dog. Its natural movement, tail wagging, playfulness, demand to be pet as well as occasional mischief will surely keep you on your toes. According to Sony, AIBO will even develop its own unique personality through everyday interactions. It has been available for purchase since early 2018.



Tomatan

We are terribly sorry, we could not help but feature this one. Tomatan was designed by the Japanese manufacturer and distributor of tomato-based foods Kagome. You probably know where this is going. Tomatan is a wearable robot that feeds you tomatoes as you run. It debuted at the Tokyo Marathon in February 2015. We are not sure if this robot is actually for sale or not, but it definitely exists.

<https://youtu.be/cOJaDDO38kk>



Sanela Lukavica

Diffusion of Know-how and Error

Prevention through Pair Programming



Developer nightmares come in all shapes and sizes to haunt their victims in many development departments. Prime example: A complex code is written. The coder may see its cleverness at first sight – but what about colleagues¹ tearing out their hair due to presumably useful code variations? Particularly when someone is quite new in a company and full onboarding has not yet taken place? Ideally, the work is documented so that there is at least a reference point. However, both reading and maintenance of documents can take a long time that could better be used for other tasks.

¹ For reasons of better readability, we do not use male and female forms simultaneously. All names are valid for both sexes.

The work technique of “pair programming” can be a revelation in these situations. The concept is simple: Two programmers work together on one piece of code. One programmer has the role of the driver and writes the code. Their partner oversees what happens on the monitor as the navigator and checks their work². Ideally, the developer duos in a company will be intermingled on a regular basis so as to spread the knowledge in the department.

Nonetheless, pair programming divides the minds, with the main criticism being that the output may decrease. That is a good reason to discuss this topic with an experienced expert in the field of pair programming. We talked with Guido Steinacker on how this work technique pays off in everyday work and about the ideal conditions to turn paid programming into a success. As Executive Software Architect of one of the world’S biggest e-commerce companies, Otto, Steinacker has established pair programming in the software development department and has many years of experience.

Mr. Steinacker, pair programming is sometimes discussed controversially. Critics say that productivity suffers. What do you tell these people?

I think it strongly depends on the context and what someone regards as productivity. A pair certainly does not write as many lines of code as two individual developers. But how is the quality of this code? How is the test coverage? How easy can I understand or change this code two years from now? When I take a look at product development, the time perspective is more long-term than the fulfillment of a timely restricted service for which I have to deliver a defined work package on a certain date and then will not see this software again. If I work in accordance with such a model, it may be correct that pair programming seems to be inefficient because I only focus on short-term objectives. However, when I consider that I have to operate and further develop the code that I develop today, then



Guido Steinacker
Executive Software Architect, Otto

² There are various types of pair programming. This text is restricted to the most frequently used type.

the situation is completely different. Aspects such as quality, maintainability, and extensibility play a much more important role. I do not see that pair programming could be in any way a disadvantage at the end of the day. In my team, for instance, we have systems that we have continually developed for more than six years. And I cannot see, by any means, that pair programming could be inefficient in such a context.

Pair programming can be challenging. You may discover sides of your colleagues you did not know before. How do you avoid the risk that colleagues cannot stand each other at some point?

Particularly because pair programming is really exhausting, and the duo spends much time in each other's personal space, certain aspects are mandatory: One thing is appropriate workplaces; with larger desks, two monitors, two keyboards, two mice. Every now and then you need breaks. A table soccer is a good thing for this purpose. Occasional team events and even a visit to the beer garden are as important as regular retrospectives to turn a group into a real team. But most importantly, new employees must be compatible with the rest of the team. People must like each other so that they actually want to work as a pair. That does not work for everyone and not everyone is made for this. You have to take care of that when you build a team. If not, you may still have a great team, but it does not work that strictly in pairs.

Pair programming has been rather important at Otto for some years now. How are your experiences so far?

Roughly 20 teams work on the development of otto.de at Otto and each team can decide for itself how they work. Some teams primarily work in pairs since 2011, other teams only do that sporadically. Most teams practice pair programming but some teams are stricter than others in their work methods. In my team, larger work packages are principally handled in pairs, which can take up to 7 to 8 hours a day. We also have tasks and,

obviously, fix bugs. We also try to work in pairs for these jobs as much as possible. In practice, some employees also work individually sometimes. But that is something we observe and do not actually like as a team.

Experiences so far are absolutely positive – pair programming led to the fact that many aspects must not even be documented anymore. Because we permanently work in pairs, watch for a certain rotation, and knowledge of the system is spread very well, things such as coding conventions, that were usually made in writing, are not necessary anymore. The quality is also kept on a high level because your bad conscience sits directly next to you. In this way, you quickly notice that you have chosen a shortcut and your work is a bit unclean, or that refactoring would be necessary in some places. We have made excellent experiences with this matter.

To what parts does your team work in pairs?

We analyze the commits from time to time and how many pairs worked on them. This has a certain deviation but there are roughly 75 to 80 percent of all commits on stories and maybe 60 to 70 percent of tasks and small bugs that are handled in teams. There are situations now and then in which there is an uneven number of developers and pair programming does not work. However, we do not only develop software but we also work in a DevOps model so that the team is also responsible for operation of the application and much work is done on tools required for continuous development. So there are tasks implemented frequently because they require a different kind of quality, have a different lifetime, and pair programming is rather less important in these cases. But for the software that is actually necessary for end customers of otto.de, we are at up to 80 percent. And I do think that is healthy. But as I said earlier, some teams use different methods to achieve their objectives and that does not mean that they perform worse. There is more than one correct approach and the objectives we use pair programming for can be achieved in other ways.





Are applicants and new colleagues directly sent to pair programming?

Definitely. Pair programming is, especially for new team members, the perfect means for a thorough and efficient onboarding. When a new colleague applies or someone wants to see how we work, we invite them to work in our team for half a day. We then typically meet in the morning for our daily stand-up and one or two developers want to take care of the interested employee and then work with them in a pair on a comparatively simple task. It may also happen that two or three commits are pushed in the course of the day, the deployment pipeline starts, and changes go live shortly after. That is nothing unusual because we also work on the principles of test-driven development and continuous deployment besides pair programming. For new internal colleagues that are permanently on our team, we handle it the same way. They do not sit in front of a folder with paper documentation. They get a mentor who accompanies them for the first couple of weeks and helps them with onboarding. Therefore, they directly start working from day one and they often carry out the first live deployment on the first or second day.

Do you only have developers in your team or is there also interdisciplinary cooperation across departments?

We have several cross-functional product teams practicing pair programming, but there is an exchange between teams. Yesterday, for example, we had a discussion with a technical lead of another team who wanted to sit in on in our team for two or three months. From time to time we also have a situation in which one team implements the interface for service and another team must use this interface so that this API is designed together. Depending on the situation, this may also be done in a pair. It may also occur that quality assurance in the team works with developers, so that different roles work together.

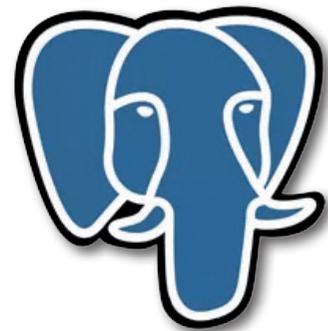
Lisa Damerow

Slonik, the Blue Elephant

PostgreSQL, also known as “Postgres”, is an open source Database management system hosted in the Cloud. We will tell you about the story behind its logo.

The official logo for PostgreSQL is a blue elephant known as “Slonik” which is derived from the Russian word for “little elephant”. Oleg Bartunov, member of the PostgreSQL Global Development Group, stated that logo idea probably originated from a thread on the postgres-hackers mailing

list. Despite the fact that the elephant was chosen as a logo, in 1997, a cheetah beautified the logo. The first implementation of the elephant idea in 1999 was an elephant head in a diamond, which looked “terrible”, according to PostgreSQL contributor Josh Berkus. With the launch of PostgreSQL Inc. in 2003, the current logo, created by an actual designer, was introduced. An interesting fact is that in Japan, due to domestic terrorist symbolism, a turtle is used for the PostgreSQL logo instead.



Today - Elephant | [Source](#)



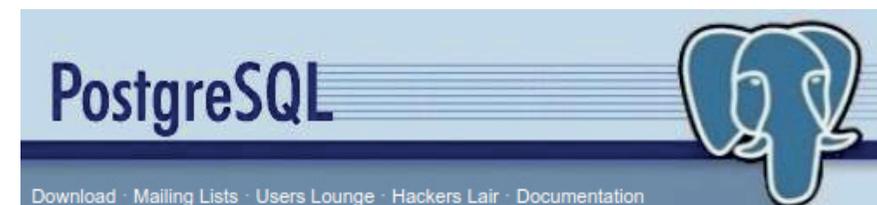
Today in Japan - Turtle | [Source](#)



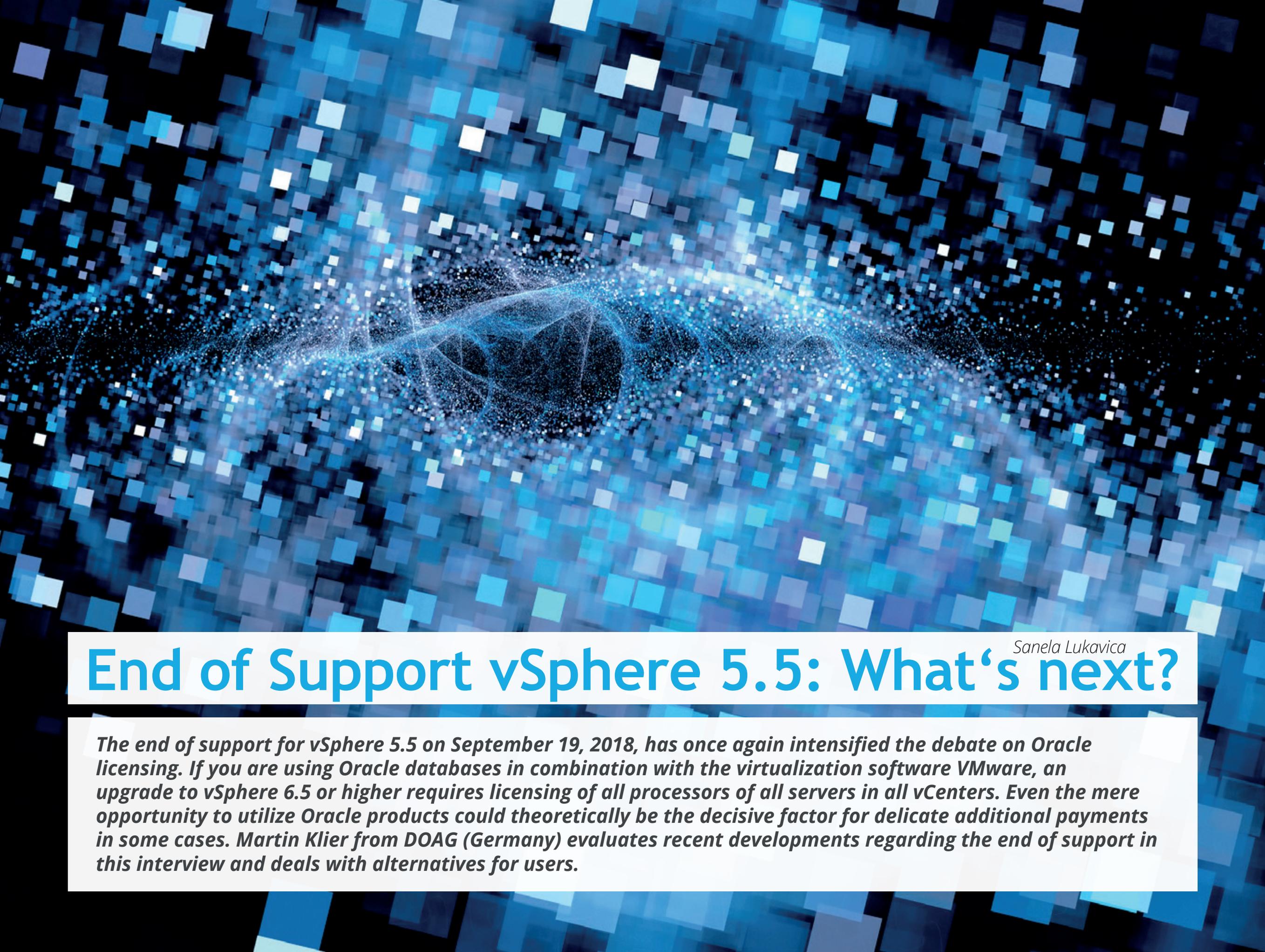
1997 - Cheetah | [source](#)



1999 - Elephant | [Source](#)



2003 - Elephant | [Source](#)



End of Support vSphere 5.5: What's next?^{Sanela Lukavica}

The end of support for vSphere 5.5 on September 19, 2018, has once again intensified the debate on Oracle licensing. If you are using Oracle databases in combination with the virtualization software VMware, an upgrade to vSphere 6.5 or higher requires licensing of all processors of all servers in all vCenters. Even the mere opportunity to utilize Oracle products could theoretically be the decisive factor for delicate additional payments in some cases. Martin Klier from DOAG (Germany) evaluates recent developments regarding the end of support in this interview and deals with alternatives for users.

Will there be a flood of lawsuits after the end of support of vSphere 5.5 – coming from both Oracle and customers?

Rather not. Oracle knows very well that their license agreements with customers do not affect the subject virtualization at all. There is no wording in the agreements that addresses virtualization in particular. The only thing that is explicitly included in the Oracle license agreement is the list of different CPU types. An explicit reference is made to this document, and so you have to adhere to it. However, the frequently cited partitioning document, that apparently regulates virtualization strictly, is explicitly not a component of the agreement. This is also clearly excluded in the partitioning document if you take a closer look at the footnotes.

That's exactly the point of debate, correct? May this also lead to a precedent at the end of the discussion?

This is correct. Both Oracle and customers have an open issue there. Particularly because there is no precedential case yet. Oracle has obviously shied away from arguments on this topic in the past. There are many customers who have made an agreement with Oracle with and without the dubious VLAN approval, but customers had to ensure Oracle that they do not make the details of their agreement public. To me, this shows that Oracle knows exactly that there is a gap in regulation. From practice, I know that customers, who do not adhere to the partitioning document but securely cap the usage of resources, do not have to license more than they use. But there is no official regulation for this, only individual agreements, and that definitely makes it difficult because everyone needs this regulation now.

So the VLAN approval is rather a kind of camouflage?

Yes, it only seems to solve problems. I would even condemn the VLAN approval more strongly because it shows two essential problems in my opinion. First: It is issued for a very specific

setup. When a customer adjusts his virtual environment, which is usually dynamic, he extends it, increases capacities, or advances the technologies, the approval regulates the IT. However, you do not want to ask your software vendor if you may change or extend your environment. This is also a psychological problem.

But what is significantly worse to me: The VLAN approval arrests customers due to its wording that is not part of the regular license agreement, the T-OMA. In my view, signing a VLAN approval leads to a legally worse situation compared to a mere license agreement. The approval is superficially a reassurance for customers but permanently arrests them for the future. That is why I recommend each customer to have the VLAN approval and his applicable T-OMA checked for disadvantages by a lawyer before signing. I have not yet seen a customer who would have had objective contractual advantages from the VLAN approval.

What can users do to prevent a rude awakening – for example in the course of an audit?

I cannot recommend any customer to actively go to Oracle with this topic. Without being a lawyer, I think that the contractual regulation by the T-OMA is absolutely sufficient. The customer obviously has to adhere to it! But Oracle tends to audit more strictly than stated in the agreements in case of license audits and license checks. This is the true scandal that is not even remotely published frequently enough: Oracle does not adhere to its own agreements for license checks, but checks the customers more strictly than necessary. What this means in practice is reflected by the fact that customers can insure themselves against additional payments from an Oracle audit, at quite affordable rates. Oracle never proceeded against this. In case of doubt, there was always a settlement for the benefit of the customer.



Virtualization software of VMware and databases from Oracle are a frequent combination. Could this torpedoing have consequences in the long run?

I think that the assumption of the Oracle management of how urgently customers need Oracle databases and how easily customers let Oracle push them to another virtualization is not in line with the actual developments on the market in Germany or Europe. This is also what I see at our customers. Oracle obviously thinks that a more complicated usage of VMware for the customer automatically leads to an increased usage of the Oracle stack, be it in the field of engineered systems, Oracle virtualization, or cloud services. From what I see, this is not the case. Customers do not let vendors tell them what to do in IT operations. They rather look for technical alternatives to an Oracle database that do not have these restrictions. In this case, we unfortunately have a negative unique selling point of Oracle: No competitor is as inflexible as Oracle when it comes to virtualization.

Do you frequently deal with customers who have chosen a different supplier?

Yes, of course. And I personally think that is very unfortunate. In many cases, I think that Oracle would technically be the best solution by far. Particularly when data must be changed concurrently, there is no competitor of Oracle who does this as well in a technically similar manner. However, the pressure is very high. As a result, customers live with disadvantages in terms of process and performance, only to avoid the risk of a check in operational daily routine and a negative legal confrontation with Oracle. Fortunately, there are also customers with enough self-confidence to let their existing long-term agreements critically check and who are not afraid of this confrontation. But not every CIO wants this or has the necessary support in his company.

What would you ask for regarding the further development of this matter?

Personally, I would like this technically excellent platform Oracle to consider the needs of the real IT in small and medium-sized businesses



The Evolution of TV Martin Meyer



Early Beginnings

Trying to explore the beginnings of television, you come across different approaches in different countries.

The idea for the first mechanical TV was presented and registered for patent by Paul Nipkow in 1884. He is therefore regarded as the real inventor of television.

After World War I, high-frequency engineers tried to electrically transmit images. All of the first television broadcasts used optical-mechanical image scanning, in most cases a Nipkow disk.

The first mechanical televisions were commercially sold from 1928 to 1934 in the United Kingdom, United States, and Soviet Union. These televisions were actually radios with the addition of a television device consisting of a neon tube behind a mechanically spinning disk with a spiral of apertures that produced a red postage-stamp size image, enlarged to twice that size by a magnifying glass¹.



¹ https://en.wikipedia.org/wiki/Television_set

² https://en.wikipedia.org/wiki/Television_set

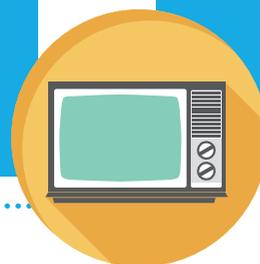
Cathode Ray Tube (CRT)

In December 1930, Manfred von Ardenne succeeded for the first time in transmitting images fully electronically using a Braun tube. In 1932/33, electronic image scanning prevailed due to its superior quality.

The picture tube as the heart of a television set since then was a Braun tube named after its German inventor Karl Ferdinand Braun. This tube consists of a funnel-shaped glass container under vacuum in which, depending on the desired brightness of a pixel, more or fewer electrons are accelerated forwardly from the cathode in the rear neck of the picture tube towards the anode (the actual screen) and activate the luminous layer applied there.

The first commercially made electronic televisions with cathode ray tubes were manufactured by Telefunken in Germany in 1934, followed by other manufacturers in France (1936), Britain (1936) and America (1938)².

Televisions could initially only display black and white images, but nevertheless became a popular consumer product after World War II, first in the US and then in many other countries worldwide.



Color Television with CRT

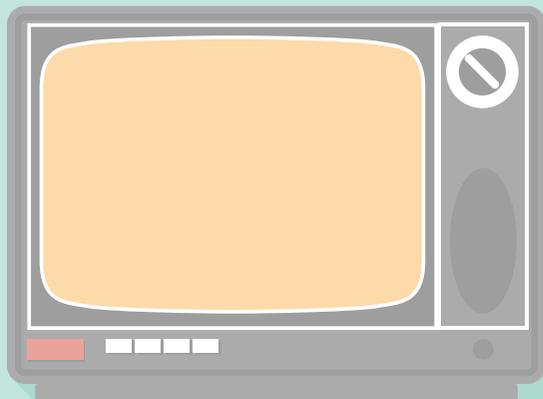
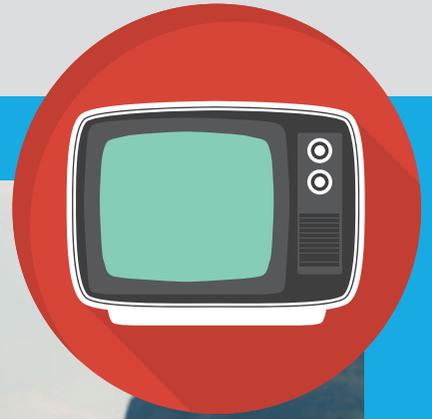
The addition of color to broadcast television after 1953 further increased the popularity of television sets in the 1960s.

In color picture vacuum tubes, there are three electron beam systems. Their beams cross in certain “masks” arranged near a luminous layer. Due to their shading, they can only hit one fluorescent color at a time. These are stripes or dots of the primary colors red, green and blue arranged exactly matching the mask.

The introduction of color television took place at different times in each individual country. It started with the United States as pioneer on a limited scale in 1953 and in Europe in France, the Netherlands and Germany in 1967. Many other countries all around the world followed later in the 1970s.

The television set also became the display device for the first recorded media in the 1970s, such as analog magnetic tape cassettes of the competing standards Betamax, VHS and Video 2000, then Laser Disc and later DVD and Blu-ray as digital media formats on a disc.

Until the 2000s, a television set was based on tube technology.



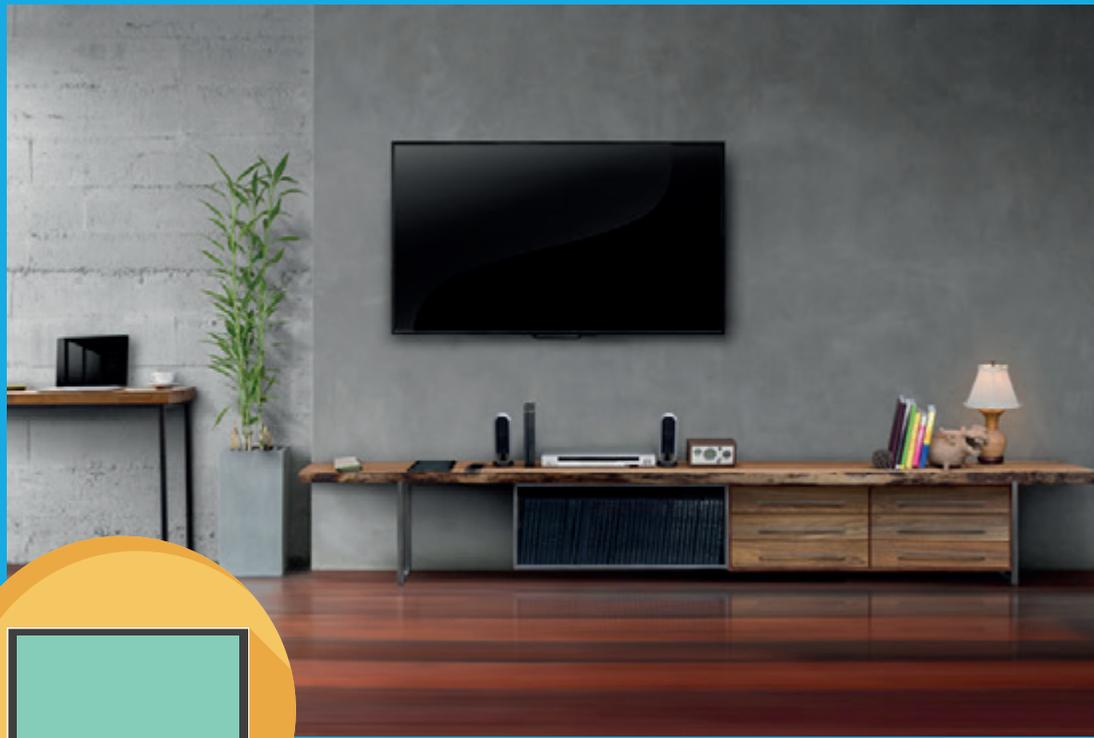
Flat Screen Television Sets

In the 2000s, conventional tube televisions were increasingly replaced by flat-screen televisions with LCD panels, offering a larger screen with a wide-angle aspect ratio of 16:9 compared to the conventional 4:3 ratio.

More flat screen televisions than tube sets were sold worldwide for the first time in 2007.

The main advantage of flat screen technology consisted in the considerably smaller depth of a few centimeters, which is independent of the screen size.

The low weight, which also allows direct mounting on walls fulfills the earlier vision of a television set “that can be hung on the wall like a picture”.



Flat-panel display sets offered for the first time also a higher displayable image resolution and were able to receive HDTV signals.

720p (HD ready) was the first available HDTV resolution standard and had an image resolution of 1280 pixels by 720 lines.

Then followed 1080i and 1080p with a resolution of 1920 pixels by 1080 horizontal lines.

4K or Ultra High Definition (UHD) nowadays is the popular standard for a new television set with a larger screen from 49 inch (125 cm) upwards.

These 4K TVs have a resolution of 3840 pixels by 2160 lines.

Flat Panel Display Technologies

LCD

The first flat panels on the market had a liquid crystal display (LCD). The function of this kind of display is based on the fact that liquid crystals influence the polarization direction of light when a certain amount of electrical voltage is applied.

LCDs consist of segments that can change their transparency independently of each other. For this purpose, the alignment of the liquid crystals is controlled with electrical voltage in each segment. This changes the transmittance for polarized light, which is generated with a backlight and polarization filters.

Plasma

For many years, a plasma display panel (PDP) was the technology that offered the best picture quality of all flat screen televisions. Often used for TV displays of 50 inches (127 cm) or larger, a plasma television was more expensive in comparison to an LCD or LED model.



A “plasma” display was based on a technology utilizing small cells containing electrically charged ionized gases. The larger Plasma panels offered a more vivid picture with more impressive colors and a wider viewing angle.

With the introduction of improved and cheaper LCD screens and the accelerated development of OLED technology, the more expensive plasma technology gradually disappeared from the market.

In the television sector, plasma screens are not available anymore since the last manufacturers Panasonic, LG and Samsung stopped producing plasma TVs in 2014.

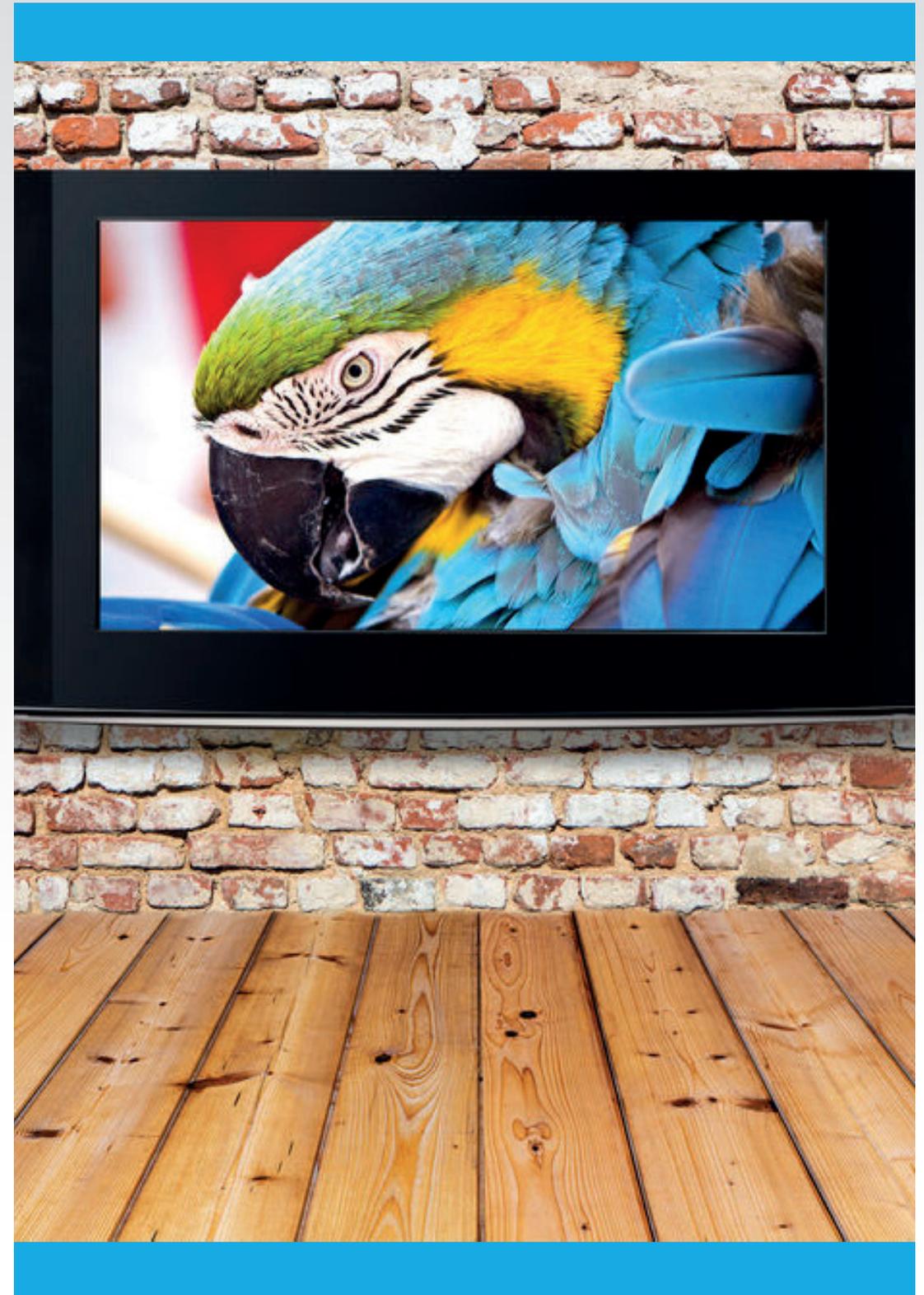
LED Backlight

LED Backlight is a variant of illumination of LC displays. White or colored light emitting diodes (LEDs) are arranged behind the liquid crystal elements and become a source of light behind the screen.

With the lateral arrangement (Edge LED), a few white LEDs are attached to the sides of the monitor and illuminate the entire surface from there. The advantages are a smaller depth of the device and higher energy efficiency but there are problems with even illumination in comparison to full-array backlighting. For cost reasons, Edge LED is the most frequently used technology today.

OLED

Current high-end televisions make use of OLED technology. OLED (organic light-emitting diode) is a light-emitting diode (LED) in which the emissive electroluminescent layer is a film of organic compound which emits light in response to an electric current.



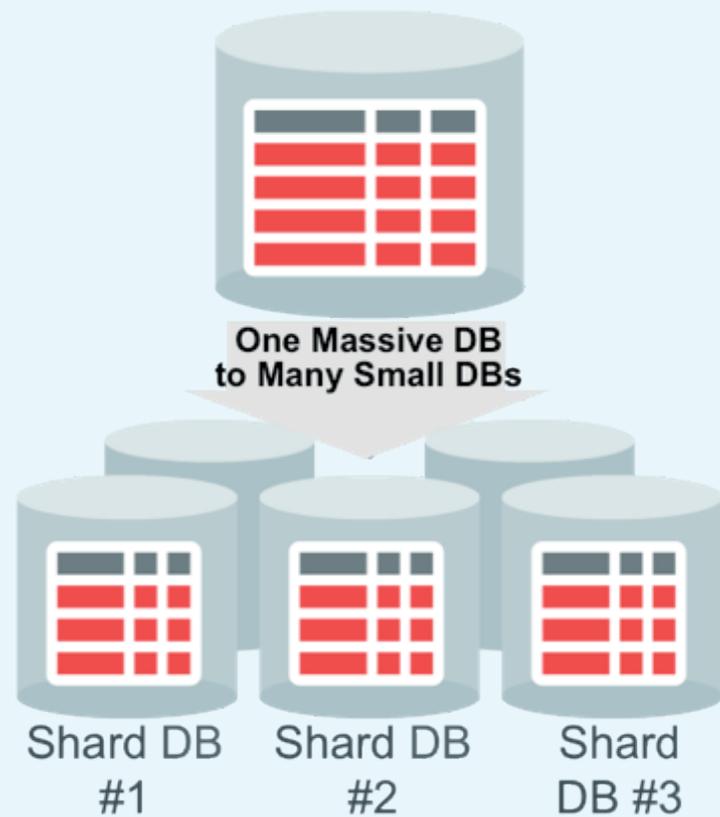
What to Expect from Oracle Database 18c

Maria Colgan

On-Premises and in the Cloud – Part 2

This is the second part of a two-part article about the most useful improvements of Oracle Database 18c. In the first part, Maria Colgan discussed the new additions to the features Multitenant and Database In-Memory. In this installment, she is going to pickup from the previous article and look at Sharding and other small but useful enhancements.





One massive Oracle Database can now be sharded into a pool of smaller databases

Sharding

Starting with Oracle Database 12c Release 2, it is possible to horizontally partition or shard a very large database across a pool of independent databases called shards (up to 1,000 shards). Each shard runs on a separate server and no shared storage or clusterware is required. There is complete fault isolation between shards, and data is partitioned across the pool based on a sharding key. The pool of databases is presented to the application as a single logical database. By specifying the sharding key, application queries are automatically directed to the appropriate database or shard.

However, it is possible to execute queries across all shards to get a holistic view of the entire data set. Sharding enables applications to scale data, transactions, and users to any level, simply by adding additional databases (shards) to the pool.

Starting in Oracle Database 18c, users can now specify how shards are to be defined using either a RANGE or LIST sharding model rather than the default HASH model. Using either a RANGE or LIST approach gives users the ability to ensure that data is placed in a location appropriate for its access. This has the potential to reduce the latency between the application and the database or to ensure data is placed in a specific data center to conform to geographical or regulatory requirements.

Sharded swim lanes in Oracle Database 18c also make it possible to route requests through sharded application servers all the way to a sharded Oracle Database. Users do this by having their routing layer call a simple REST API. The real benefit of this approach is that it can improve throughput and reduce latency whilst minimizing the number of possible connections the Oracle Database needs to manage.

Small But Useful Enhancements

Some of the most appealing new features in Oracle Database 18c are small enhancements. Here is a couple that I think will make your life easier and shouldn't require a huge effort to take advantage of.

Private Temporary Tables

Oracle Database 18c also provides a more flexible approach to storing transient data with the introduction of Private Temporary Tables. Private Temporary Tables allow users to define a global temporary table that is only visible for that session or even just a single transaction. This approach provides more flexibility and can prevent some of the issues seen in previous versions with Optimizer statistics and global temporary tables.

In-Memory Key Value Lookup

In 18c you can now allocate a proportion of the SGA to provide a row store. This used in conjunction with a high-performance lookup means that it's possible to retrieve records via a primary key match faster than was previously possible.

Key-value lookups will bypass the SQL execution layer and will be executed directly in the data access layer via a hash table in memory. This will enable an extremely fast retrieval of the value for the specified key. A new table level attribute MEMOPTIMIZE is used to indicate which table will be populated into memory in this hash format. Tables will be populated into Memory in a new sub-pool in the SGA, the size of which is controlled by the MEMOPTIMIZED_AREA parameter.

More Approximate Analytic Functions

In some cases, the level of precision within an analytical query can be reduced, in a tradeoff for a shorter elapse of time. For example, 'how many distinct visitors came to our website last month?'

An approximate answer that is, let's say, within 1 percent of the actual value but is returned 10 times faster is not only sufficient but also preferable. In order to address this requirement, Oracle's approximate analytic functions provide approximate results in a fraction of the time. In Oracle Database 12c we introduced APPROX_COUNT_DISTINCT (12.1), APPROX_PERCENTILE, and APPROX_MEDIAN. With Oracle Database 18c we added three more APPROX_COUNT(), APPROX_SUM() and APPROX_RANK().

Merge Partitions Online

Just as a grocery store is divided into different departments (fruit and vegetables, meat, soft drinks, etc.), Oracle Partitioning allows a table, index or index-organized table to be subdivided into smaller pieces. Each piece is called a partition and has its own name, and its own storage characteristics. From the perspective of a database administrator, a partitioned table has multiple pieces that can be managed either collectively or individually. However, from the perspective of the application, a partitioned table is identical to a non-partitioned table.

The partitioning strategy for a table is often chosen to facilitate efficient data loading or to optimize query performance. However, as data ages it can often be beneficial to aggregate some smaller partitions into large partitions to simplify administration. For example, hourly or daily partitions could be merged to create monthly partitions. Although this was possible in previous versions of the database, the table was inaccessible whilst the merge operation took place. In Oracle Database 18c you merge your partitions online and maintain the indexes as well.

Integration of the Oracle Database with Active Directory

It's now possible to allow Active Directory to authenticate and authorize users directly without the need to also use Oracle Internet Directory. In the future we hope to extend



this functionality to include other third-party LDAP version 3-compliant directory services. This change significantly reduces the complexity needed to perform this task and as a result improves the overall security and availability of this critical component.

Zero Impact Grid Infrastructure Patching

The final enhancement I want to share should make patching an 18c RAC database easier. Zero Impact Patching enables the patching of the Oracle Grid Infrastructure to occur in a rolling fashion without interrupting database operations. The grid infrastructure on one RAC node can be safely brought down for patching without having to take down the database instance(s) on that node. The database instance is simply connected to the Grid Infrastructure on one of the other nodes until the patching is complete.

Is There any Difference between Oracle Database 18c On-Premises and Oracle Database 18c in the Cloud?

Oracle Database 18c on-premises is the same software executing in the Oracle Cloud, but some features and functionality are only available in the Oracle Cloud or on Oracle Engineered Systems. This is no different to how things worked with Oracle Database 12c. For example, Hybrid Columnar Compression is only available on Engineered Systems, but it is now available in the Oracle Cloud as Oracle Database services are deployed on Exadata Cloud Infrastructure.

You can get more details on the enhancements I described in this article and which features are only available in the Oracle Cloud and on Engineered Systems in the Oracle Database 18c [document](#).



Maria Colgan
Master Product Manager at Oracle Corporation

Marina Fischer

Number of the Month:

84%

BLOCKCHAIN

of organizations are actively involved with blockchain technology. That is the result of a **PwC survey** conducted in 2018 among 600 executives from 15 territories. So it seems that not only everyone is talking about blockchain – companies are actually aiming at being at least somehow involved and not missing out on this trend that is supposed to generate additional business value.

Among the industries that are regarded as leaders in blockchain,

financial services are at the top (46 percent), followed by manufacturing and energy (12 percent each). Looking at territories, respondents see China as a rising blockchain leader as projected from 2021 to 2023 (30 percent), although the US was voted the blockchain leader of today (29 percent). The survey results also point at the biggest barriers to blockchain adoption, which are regulatory uncertainty (48 percent), lack of trust among users (45 percent) and the ability to bring the network together (44 percent).



CBO Artificial

Intelligence

Venkata Ravi Kumar Yenugula and Mari Kupatadze



The Oracle Cost-Based Optimizer (CBO) is a representation of Artificial Intelligence (AI). The original optimizer to the Oracle Database is called Rule-Based Optimizer (RBO) that was phased out and gave place to the well-known and most important component CBO. Instead of following the rules, Oracle decides which plan to choose in which case for a specific SQL or bunch of SQLs. As a result, we get no rules and more intelligence. Moreover, Oracle can improve SQL execution plan time by time by learning all possible plans of the SQL statement and choosing the best of them.

In this and the following issue, we will discuss two separate guides for Optimizer: SQL Profiles and SQL Baselines. We cover their functionality and for better decision-making on which one to choose in which case, we look at their pros and cons.



SQL Profiles

A SQL Profile is a set of auxiliary information and execution context of a SQL statement, which was introduced in Oracle Database 10g. It is created when an Oracle DBA invokes the SQL Tuning Advisor. SQL profiles then guide the optimizer to a better plan.

SQL Profile can be recommended for the following types of statements:

- SELECT
- INSERT with a SELECT clause
- UPDATE
- DELETE
- CREATE TABLE with AS SELECT clause
- MERGE

We can compare it with HINT, but before that let's recall what the HINT is:

Hints are special comments in SQL statements that coordinates the optimizer on how to build execution plan.

For example, in the following query we hint the optimizer to use *nested loop* instead of *hash join*:

```
SQL> select /*+use_nl(t1,t2)*/ *
       from customers t1, cards t2
       where t1.id=t2.id;
```

```
Plan hash value: 4234748652
```

Id	Operation	Name	Rows	Bytes	Cost (%CPU)	Time
0	SELECT STATEMENT		1	60	4 (0)	00:00:01
1	NESTED LOOPS		1	60	4 (0)	00:00:01
2	TABLE ACCESS FULL	CUSTOMERS	1	20	2 (0)	00:00:01
* 3	TABLE ACCESS FULL	CARDS	1	40	2 (0)	00:00:01

The original execution plan without hint:

```
SQL> select *
       from customers t1, cards t2
       where t1.id=t2.id;
```

```
Plan hash value: 2167684981
```

Id	Operation	Name	Rows	Bytes	Cost (%CPU)	Time
0	SELECT STATEMENT		1	60	4 (0)	00:00:01
* 1	HASH JOIN		1	60	4 (0)	00:00:01
2	TABLE ACCESS FULL	CUSTOMERS	1	20	2 (0)	00:00:01
3	TABLE ACCESS FULL	CARDS	1	40	2 (0)	00:00:01

If we compare SQL Profile to hint, the benefits of Profile are revealed:

- Unlike hints, SQL Profile does not tie the optimizer to a specific plan.
- Unlike hints, SQL Profile is transparent to the user and no changes are required to existing application code.

Managing SQL Profiles

The basic tasks to manage SQL Profile are the following:

- Implementing the Profile that was recommended by SQL Tuning Advisor.

After creating the tuning task for a specific SQL and viewing its report details from Oracle Enterprise Manager, you may see the following recommendation:

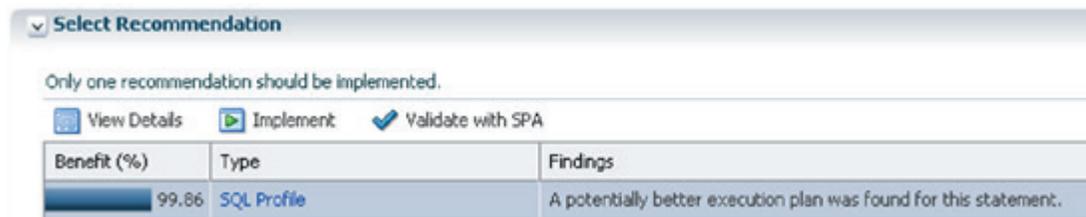


Figure-1

We can see how the plan looks like before and after SQL Profile by clicking on the "SQL Profile" link in the **Figure-1**:

Original plan (sum of the costs: **40**):

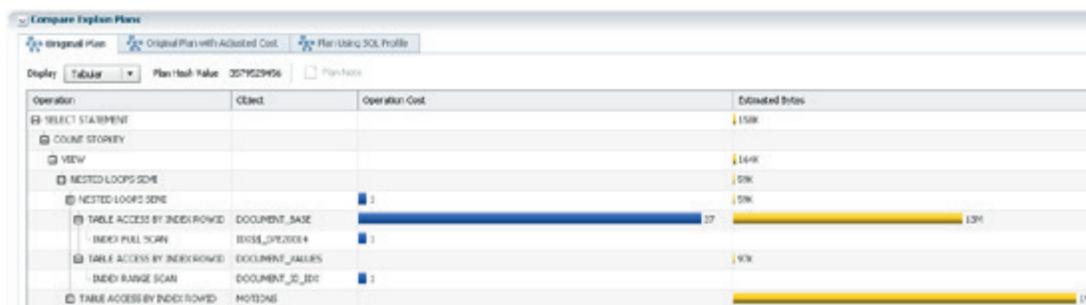


Figure-2

Plan using SQL Profile (sum of the costs: **5**)

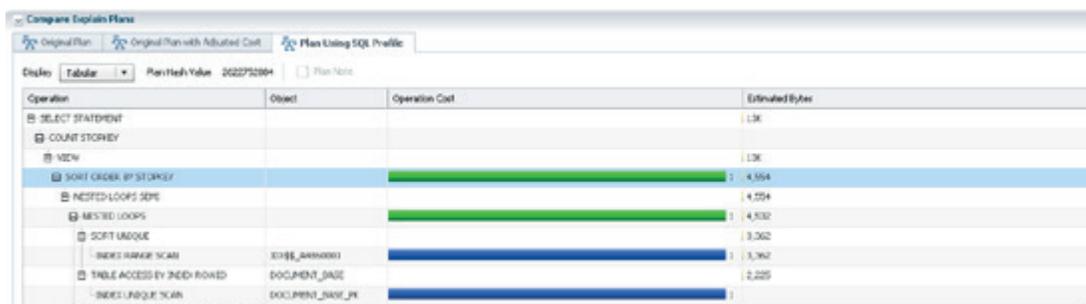


Figure-3

The new plan with SQL Profile looks better than the original, so we can apply it by using the following procedure:

```
BEGIN
  DBMS_SQLTUNE.ACCEPT_SQL_PROFILE(
    task_name => 'SQLTuningAdvisorTaskName'
  );
END;
/
```

➤ Listing the existing profile name, sql_text , category and status:

```
SET LINESIZE 1200
SET PAGESIZE 1500
COL NAME FOR a28
COL SQL_TEXT FOR a95
COL STATUS FOR a7
SELECT NAME, SQL_TEXT, CATEGORY, STATUS
FROM DBA_SQL_PROFILES;
NAME                                SQL_TEXT                                CATEGORY STATUS
-----
SYS_SQLPROF_0164e57ceccd0003 select count(id) from... DEFAULT ENABLED
...
```

➤ Modifying SQL Profile attributes.

```
BEGIN
  DBMS_SQLTUNE.ALTER_SQL_PROFILE (
    name => 'SYS_SQLPROF_0164e57ceccd0003'
    ,attribute_name => 'CATEGORY'
    ,value => 'HR_SESSIONS'
  );
END;
/
```

You can restrict sessions affected by SQL Profile by altering its CATEGORY attribute.

After changing the above attribute, set SQLTUNE_CATEGORY initialization parameter for the session you want to restrict:

```
SQL> ALTER SESSION SET SQLTUNE_CATEGORY = 'HR_SESSIONS';
```

➤ Dropping SQL Profile.

If you decide that SQL Profile is no longer necessary, you can drop it by the following way:

```
BEGIN
DBMS_SQLTUNE.DROP_SQL_PROFILE(
  name => 'SYS_SQLPROF_0164e57ceccd0003'
);
END;
/
```

➤ Transporting SQL Profile from another database that has same release or later.

- Create staging table using DBMS_SQLTUNE.CREATE_STGTAB_SQLPROF procedure.
- Move profile data into staging table by DBMS_SQLTUNE.PACK_STGTAB_SQLPROF.
- Move staging table to destination database using Data Pump or Network Link.
- Unpack imported staging table in the destination database by DBMS_SQLTUNE.UNPACK_STGTAB_SQLPROF

Disadvantages of SQL Profile

Over time, profile can become outdated and cause the performance of SQL statement to degrade. That can lead to large database response time. In that case, SQL Tuning Advisor



Mari Kupatadze

Oracle Certified Master,
Senior Solutions Architect at
FlashGrid Inc



Venkata Ravi Kumar Yenugula

Oracle ACE Director & Oracle
Certified Master, DBA-Lead at
Infolob Solutions Inc

will catch resource intensive SQL statement and generate or even implement a new SQL Profile.

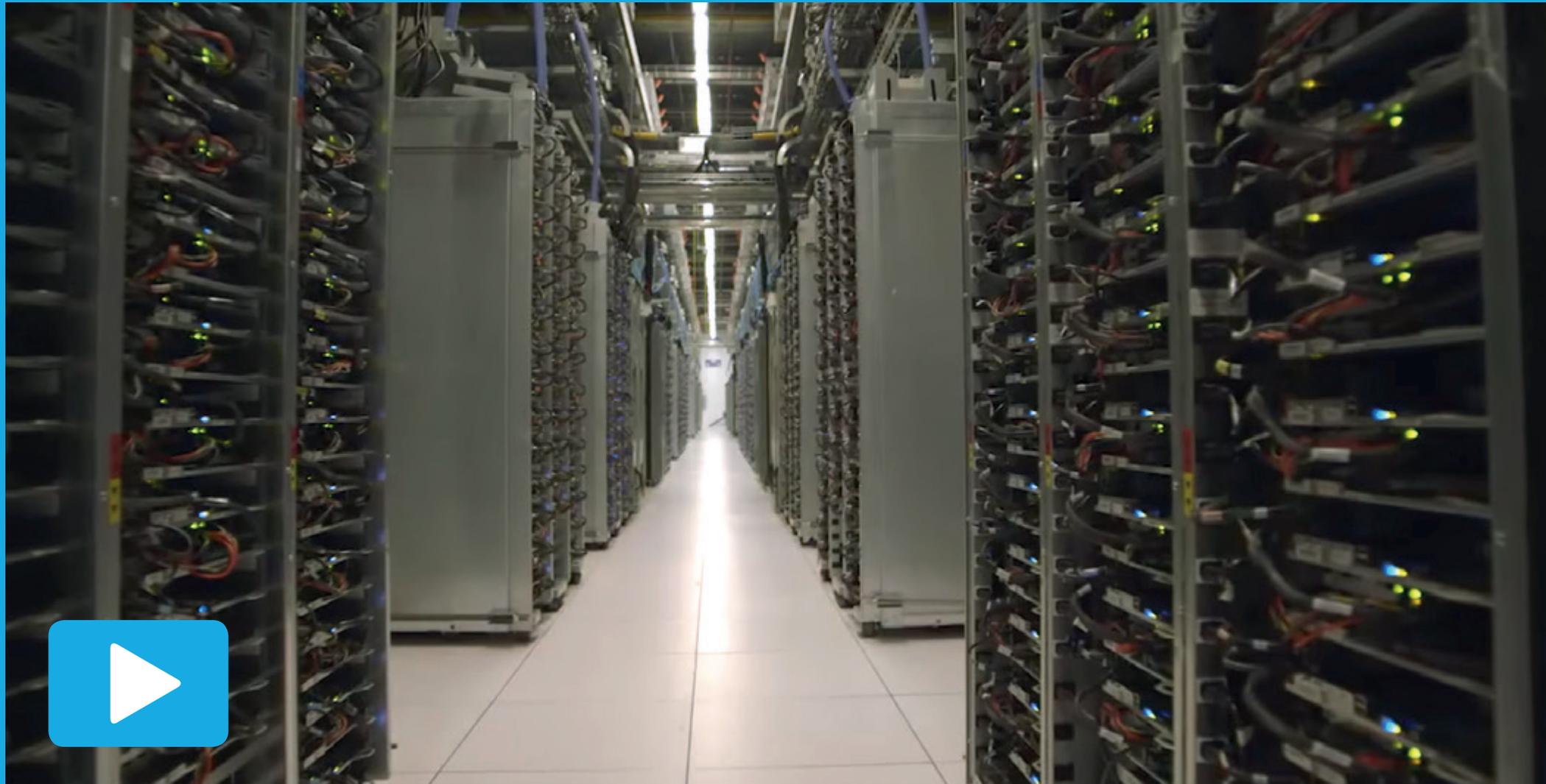
SQL Tuning advisor focuses on tuning the individual SQL statement and it may recommend applying SQL profile that uses parallel execution. Executing SQL in parallel will make it faster but will also eat resources and may result in other SQLs even not being able to run.

So be cautious when implementing SQL Profile. Observe how the execution plan changes if we accept it and then make the right decision.

To be continued

This was the first part of two articles that look at two separate guides for the Cost-Based Optimizer: SQL Profiles and SQL Baselines. The second part of the article will be published in ORAWORLD #13.





Inside a Google Data Center Martin Meyer

Have you ever asked yourself where your data is being processed? Follow Joe Kava, Vice President of Google's Data Center Operations, on his tour through a Google data center. See the impressive technical structure in a giant building in South Carolina and learn about important issues like highly efficient security, huge server racks, continuous hard drive exchange, sustainability and cooling. The data center is one knot in a worldwide network.

A Conference in the Tajik Mountains Heli Helskyaho

Tajikistan Oracle User Group (TajOUG) has always held a special place in Heli Helskyaho's heart. Their yearly conference will celebrate their fifth anniversary next year, and she has been involved from the start and followed the user group's growth. Read on for her report on their history and this year's conference.



It all started in 2015 when Rustam Khodjaev, the president of TajOUG, contacted me and asked if there is any way to get foreign speakers to Tajikistan. Rustam told me that it would also be very important to have speakers that would be able to speak Russian. After a short brainstorming we created the "Russian Speaking Tour" and "Tajikistan Tech Conf" as part of it. We invited two Oracle ACE Director speakers, Alex Gorbachev and Yury Velikanov, to present in several Russian speaking countries: Latvia, Russia and Tajikistan. Unfortunately, we then

ran out of Oracle ACE directors who were able to present in Russian, and also in addition, the other participating countries already had a lot of activities or were not that interested in organizing anything. In the end, Tajikistan was the only one interested in continuing: they still had a need and also the passion to organize this event. So when we decided it will be only Tajikistan, English became the official language for the speakers. As a result, in 2016 we had Joel Perez presenting in Tajikistan, and last year it was Rob Lockard and myself.



This year the event was organized in the beautiful mountains of Tajikistan in a Winter resort and the speakers were Roger MacNicol and, again, myself. I was talking about machine learning and Roger spoke about the autonomous database and the success story of Exadata. We both also gave a motivational talk. After the conference, attendees then were able to take part in all kinds of fun activities. Later in the evening, the bus took us back to the city and we had a very interesting dinner and met with Exadata customers in Tajikistan.

The food in Tajikistan is very good, especially all the vegetables and fruit are much tastier than anywhere else. The country is beautiful and full of mountains and clear rivers. People are friendly and helpful.

Next year, this event will celebrate five years and there will be a special seminar for the celebration. It has been wonderful to see the user group grow so much during these years and how attendees have learned more English to make it possible to have the whole content in English. Tajikistan is very lucky to have a user group leader like Rustam Khodjaev who looks after the Oracle users and their education in Tajikistan. The preparations of the fifth anniversary conference are on and the call for papers will be open very soon. I hope many of you will have a chance to join this special conference next year.





Heli Helskyaho

Sushi and Sashimi in Tokyo

“One of my favorite cities in the whole world is Tokyo”, says Heli Helskyaho. “I have visited Tokyo many times, but this was the first time I was presenting there at a conference.” Find out more about her trip in the following article.

It was a three-day event (September 19-21) called “DB Tech Showcase Tokyo”, organized at the UDX Conference Center in Akihabara which is a true technology paradise in Tokyo. The building was huge and it took me a while to find the right place. I gave three talks about machine learning, multi-model database and database designing at the event. There were four tracks of which three were in Japanese and one in English.

On the evening of the first conference day, there was a big party including cutting a tuna for sushi and sashimi for the party attendees to eat and an extremely fun bingo game. The event was very interesting and it was fantastic to be able to attend my

first ever Japanese IT conference. And there probably is no need to say this, but the sushi was the best we ever had!

Tokyo is a beautiful city and if you should get bored in one part of the city, you just take a metro and drive to another part and everything is new and exciting again. People in Japan are very polite and nice, and it is very clean everywhere. The public transportation is easy to use and always operates on time. But still, what I think is absolutely the best in Japan is the food: fresh fish, fantastic meat, and there is always something that you have never tried before! If you have not visited Japan yet, I would highly recommend doing it as soon as you can. And I really hope I will be invited to Japan again ☺





#NextGenTrip18 — DOAG #NextGen Community Community at Its Best

At DOAG, the German Oracle User Group, Oracle experts kept asking the same question again and again over the last years: "How do we reach and fascinate more young people for our technology and the user group?" The therefore newly founded NextGen Community finally has the answer: "Simply let the young people experience it." That is why we, the NextGen Community, visited another Oracle Community in Europe this year. Together with twelve highly motivated young IT professionals, six women and six men, from student to freelancer from all over Germany, we went to the Swedish Oracle User Group (SWEOUG). The "APEX Day" took place for the second time in Stockholm, a free event covering news, tips, and experience reports around Oracle's APEX technology. Eight of our participants have documented their personal impressions to summarize their trip.

Charlotte Pröller: Arrival, Exchange and a Night on a Houseboat

After we started our trip in Berlin with a reunion and a welcome, we moved on to Stockholm. Our accommodation was on a houseboat and we had the chance on deck to exchange our experiences with Carsten Czarski and Shakeeb Rahman during dinner. After this interesting evening, we put on our NextGen T-shirts in Swedish colors the next morning and went to the SWEOUG together. We attracted attention as a group and we gladly answered the many questions about our T-shirts and the community.

Jonas Gassenmeyer on the Presentation of Mogens Norgaard: "Latency Hiding – a Beerdrinker's Perspective"

The presentation started with the words: "If you have to explain what latency is, maybe you should start by looking at the word and check why it already contains 'late'". 😊

Avoiding latency is no child's play. It often starts with making it clear to the person in charge whether the problem can be solved at all. Mogens shared his views on handling fast and not so-fast Oracle systems with amusing and inspiring anecdotes, without using any slides. Also exciting: His explanations on how the Oak Table was founded – the probably most famous cooperation of Oracle gurus on the planet.

Matthias Nöll on the Presentation of Øyvind Isene: "Use APEX to Visualize Spatial Data"

Øyvind Isene presented a step-by-step instruction in his presentation for displaying geo-information on a map. Basis for this purpose were geodata of data type SDO_GEOMETRY, the map platform Mapbox, and APEX, obviously. Even though

Isene mentioned that participants usually fall into a deep sleep when they hear the term SDO_GEOMETRY on conferences, all listeners actively followed his speech and were excited by the fast and simple implementation.

Ali-Riza Catak on the Presentation of Carsten Czarski: "APEX 18.1 and Beyond: What's New?"

Carsten Czarski held an outstanding presentation on APEX 18, making it clear with practical examples. Carsten's extensive knowledge, which he used in a way that each step was comprehensive even for absolute beginners, turned this presentation into something special. For this reason, he had the undivided attention of the audience and it was easy for him to explain functions and features of the new APEX version 18.1. His quote "You do not have to use APEX 18, but it makes things easier for you" is what stuck in my memory and suits his presentation perfectly.

Victoria Burkard on the Presentation of the #NextGen: "8-Minute Pitches about Their First APEX Projects"

Four young professionals reported on their first project they implemented with APEX. The different perspectives on the same event gave a wonderful impression of how you get used to APEX as a young professional, namely true to the motto "learning by doing". They encouraged us to simply try new things without hesitation. The presenters highlighted their own approach in the presentation but also the question of an ideal support by colleagues or superiors. In focus was the understanding that a correctly timed "learning by teaching" can be a successful addition to the mentioned "learning by doing".





4 NextGen Participants together on "My first APEX Project"

Tobias Arnhold: Swedish Food for Everyone

Nobody had to stay hungry in Sweden. Even though this was a free event, the range of food options was more than enough. For lunch, there was plenty of local food such as salmon, bread, and salad. We were able to taste original Swedish cookies for coffee time, and in the evening, there was a trip to a roof-top bar for those who stayed.

Jan Winkels on the Presentation of Mathias Magnusson: "APEX Plugin from a PL/SQL developer perspective"

In his presentation, Mathias Magnusson showed us how to

create plug-ins for APEX with simple means and without any knowledge of JavaScript. As an example, he used a text field that automatically carries out a validation and checks if the input is in the format of an e-mail address. He also gave useful tips on naming conventions for our own plug-ins. The internal name of the plug-in should always be in line with the domain format. This avoids name conflicts in case that the plug-ins are published.

Magnusson also presented pitfalls in plug-in development. For instance, it is not sufficient to "only" write the code for the designated field – care should be taken that the defined render function is written into the "Render Procedure/Function Name". The required CSS should also be added, because otherwise, the element will remain in standard HTML style and not fit the look and feel of APEX. In conclusion, he demonstrated another plug-in: The "Secure Select List" prevents DOM manipulation by validating the transmitted value.

Carolin Hagemann and Davide Groppuso on the Presentation of Shakeeb Rahman: "The Most Amazing Universal Theme yet"

The last presentation was by no other than Shakeeb Rahman of Oracle. As the primarily responsible person for the universal theme, i.e. the design of Oracle APEX, he gave a lot of input on the new design elements in APEX 18.1.

We were able to listen to examples, applications, and presentations of new features and impressions by Shakeeb for a full one and a half hour, because the following presentation had been canceled shortly. Among other things, his presentation was about new features in Font APEX, gesture support on mobile devices in the universal theme,

general extensions directed towards mobile designs and responsiveness, as well as additional template options to set all these new configurations. At the end, Shakeeb showed us how quickly a pared-down Twitter clone can be set up with Quick-SQL or the Blueprints and some design adjustments. To sum it up, this really was a well-made presentation and the perfect conclusion for an informative and communicative day.

Gaining experience, feeling the IT spirit, contributing and keeping in touch with the community we have shown how this can be done. The recipe is simple and can be used by everyone: Free access for young professionals, low costs for the user group, coupled with something new, and a lot of community spirit make it possible.

It should be obvious that this combination turned the trip to Sweden into something really special. The feedback of a student sums up this experience: "It was great! I, for myself, have learned that I will finally start making something with APEX – and I will definitely keep in touch!"

If you want to learn more about DOAG NextGen Community, you should check out the article in ORAWORLD #7.



Shakeeb Rahman on the Subject "Universal Theme" and "Nordic Tour 2018"

Heli Helskyaho

Ambassador's Corner

Dear user group leaders,

I hope you and your user groups are doing well!

Oracle OpenWorld 2018 and Code One 2018

Oracle OpenWorld 2018 was as exciting as ever and the renamed Code One (which used to be Java One) was a great experience. In addition, we had a good representation of EMEA speakers at both events.

On Monday, we had Appreciation Luncheon for user groups led by Tom Scheisen and the rest of the user group team at Oracle, including Bianca Greco. We learned about the Global Customer Programs' Update, an interesting presentation about Oracle's Value Realization Program (Bianca has sent the user group leaders these slides) and we heard about the Oracle Developer Program.

EOUC Leaders' Meeting in Nuremberg

Our next face-to-face meeting was held in Nuremberg, Germany, on November 19. This meeting was 100 percent organized by user groups. I want to take the opportunity to thank DOAG for their support on organizing this meeting! All user group representatives were given a complimentary pass to the amazing DOAG conference held in Nuremberg

Your Ambassadors:

If you have anything we can help with, please do not hesitate to contact us!



Ami Aharonovich
iIOUG (Israel)
ami@dbaces.com



Heli Helskyaho
OUGF (Finland)
heli@miracleoy.fi

November 20-23. Thank you for your support to the EMEA user group community DOAG! You can read more about our meeting in the next issue of ORAWORLD #13.

Best regards,
Heli

Call for Papers

Full Stack Developer Conference

November-December, 2018
Helsinki, Finland
CFP@fsdc.fi

iIOUG Tech Days 2019 – Call for Papers

Until December 10, 2018
Petah Tikva, Israel
<https://www.papercall.io/ilougtechdays2019>

RigaDevDays

Until December 10, 2018
Riga, Latvia
<https://www.papercall.io/rdd19>

Kscope19

Until December 5, 2018
Seattle, Washington
<https://kscope19.odtug.com/page/abstract-submission>

JavaCro'19

Until March 15, 2019
Umag, Croatia
<http://2019.javacro.hr>

AOUG Anwenderkonferenz 2019

Until June 2019
Vienna
call4papers@aoug.at



Events



MKOUG Tech Meetup

December 12, 2018
Skopje, Macedonia
info@mkoug.org

Oracle OpenWorld Europe

January, 16-17, 2019
ExCeL London, UK
<https://www.oracle.com/uk/openworld/index.html>

iIOUG Tech Days 2019

January 28-29, 2019
Petah Tikva, Israel
<https://www.iloug.org>

Javaland 2019

March 19-21, 2019
Brühl, Germany
<https://www.javaland.eu>

2019 Spring Conference

March 21-23, 2019
MS Color Fantasy Oslo-Kiel-Oslo
<https://www.ougn2019.com>

Collaborate 19

April 7-11, 2019
San Antonio, USA
<http://collaborate.ioug.org/>
<http://collaborate.oaug.org/>
<http://questoraclecommunity.org/>

APEX Connect 2019

May 7-9, 2019
Bonn, Germany
<https://apex.doag.org/de/home/>

JavaCro'19

May 15-17, 2019
Umag, Croatia
<http://2019.javacro.hr/>

Full Stack Developer Conference

May 21-22, 2019
Helsinki, Finland
www.fsdci.fi

iIOUG Tech Days 2019 – Call for Papers

Until December 10, 2018
Petah Tikva, Israel
<https://www.papercall.io/ilougtechdays2019>

RigaDevDays

May 29-31, 2019
Riga, Latvia
<https://rigadevdays.lv/>

AOUG User Conference 2019

June 2019
Vienna, Austria
<http://www.aoug.at>

Kscope19

June 23-27, 2019
Seattle, Washington, USA
<https://kscope19.odtug.com>



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