

Autonomous Database and **CHANGING EXPECTATIONS** *for DBAs*



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Editorial

Dear Oracle User Group Members,

I would like to welcome you to our new issue of ORAWORLD. For this issue we had the opportunity to interview one of the leading futurologists, Lars Thomsen, who will give the keynote speech at the DOAG 2019 Conference + Exhibition in November.

If you have already heard the name Apache Kafka and want to read more information: Ann-Sofie Vikström Often's article will show you application possibilities.

On the subject of Autonomous Database, Jim Czuprynski shows which changes in the work of a DBA will come with this new technology. Let him surprise you!

Every year a highlight among the User Group Conferences in Europe is the Croatian Conference. We asked Davor Rankovic, the president of the country's user group HrOUG about their secret recipe – and you will be surprised that the recipe for success is very simple.

As always, you find a list of the upcoming User Group events at the end.

I hope you enjoy reading our magazine. If you are interested to submit your contribution, please go to our website www.ORAWORLD.org.

Yours, Dietmar Neugebauer



Dietmar Neugebauer
Former Executive Chairman of DOAG (Germany)



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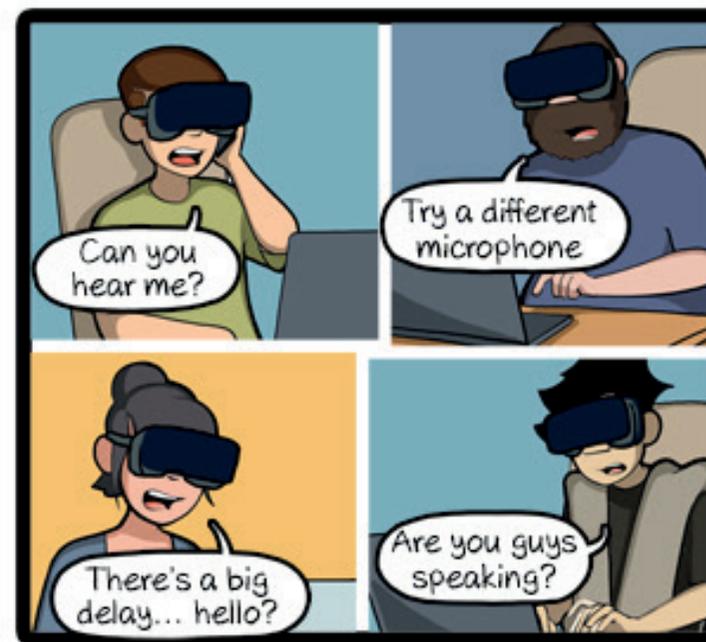
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The Future of Video Conferencing

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Interview by Christian Luda

**“The future is
made where
people can
test and
implement
their ideas
most efficiently“**

Lars Thomsen is one of the leading global futurologists. In anticipation of his keynote at the DOAG 2019 Conference + Exhibition we talked to him about his past and present – and of course the future.

Mr. Thomsen, what is the reason you became a futurologist?

We often talked and discussed about the future at home when I was a child. Our mother always encouraged us to give our imagination free rein (she was a kindergarten teacher) and our father advised us not to only build castles in the clouds, but also to think about how to realize such an idea (he was an engineer). This combination of creativity, curiosity, and technical expertise were the ingredients and fundamentals that still shape my work today.

What impact did science fiction have regarding your fascination for the future?

Science fiction also works with a combination of imagination and technological Utopia. Most works in science fiction follow a precise logic in their projection and are often quite plausible and justifiable from a technical point of view. In futurology, we work similarly. Incidentally, the TV series "Star Trek" originated because producer Gene Roddenberry had a think tank of leading scientists from different fields back then. They were allowed to dream about how their field could develop in 300 years.

We live in an age of big changes. What do you tell people who are afraid of the future due to these changes?

People are afraid of things they do not know or cannot change. The more you deal with the future, the less you are afraid of the future and the change that comes with it. That is nothing new: Change is always the result of innovations. All the convenient things we use in our everyday life in the civilized world today used to be a Utopia at some point and were surely refused by many as "nonsense". But those innovations that made sense and created added value for people have been established. Be it electric energy, democracies, drinking water from a central water supply, or the automobile – each innovation came with a change for many people and industries. You can decide for yourself if you want to be part of the change or if you want to ignore or fight against it.

How far in the future do you look as futurologists and how did digitalization change this timespan?

We usually look at the upcoming 520 weeks, that is to say ten years. We are particularly interested in so-called "tipping points" meaning breaks and disruptions because of technical, social, and economic trends, innovations, and changes. You also have to consider the interdependencies between these trends. Digitalization alone, for example, is not very interesting if you look at it. Its impact on work, society, and industries, however, is huge and with artificial intelligence, the dynamics will be completely different again.

Has your job become more difficult due to the digital change?

Our job is becoming a bit easier with digitalization because we can research and communicate easier, but also more complex because the change dynamics have increased significantly. However, we keep our timespans for the applicable development road maps.

Could you briefly outline the impact of artificial intelligence on our lives?

In our opinion, artificial intelligence will change life, work, economy, and society in the upcoming 10 years more than the triumph of the steam engine that changed people's life in the second half of the 19th century. The reason is that this is a completely new technological paradigm: Machines can learn for the first time. We are still at the beginning of this development, but when we consider that humankind only came this far because we were able to learn and not only play "the same program" again and again, you can only imagine what kind of power artificial intelligence may have in the long term.

To what extent has the significance of this subject already reached economy, politics, and society?

Unfortunately, the current debate on the technology and its chances, limits, and risks is insufficient and often naive. That is why we in the group of futurologists are very concerned if Europe is actually capable of unlocking the potential of these new key technologies.

You have mentioned the meaning of so-called tipping points. Could you explain such a point to us with an example from the past?

A tipping point is the moment when a new problem solution becomes cheaper, more attractive, and more useful than the current solution. Let's take the automobile as an example: When the first cars were developed and built, horse-drawn carriages were still the better choice for many people. Because of innovations of the product and in manufacturing, the car became better, cheaper, and more efficient. This led to a point when horses and horse-drawn carriages could not keep up with. First car buyers were greeted with smiles and horseshoers and horse dealers persuaded themselves for a long time that the horse will still dominate the future but that is not how it turned out – and at the tipping point (Model T from Ford), everything changed even faster.

What other trends and technologies – besides AI – will particularly make an impact on our future? Where do you expect tipping points?

We currently observe 22 trends with tipping points – there are indeed many changes. Some of the most exciting current trends are service robotics: machines that work with human interaction and in human environments. Besides that, there are many indicators for tipping points in the field of food production such as “vertical farming” or in artificial meat production. We also expect some changes and breakthroughs in the fields energy, education, materials, mobility systems, and third-generation medicine in the next 520 weeks.

The big visions for the future seem to be developed in Silicon Valley. Is there a risk that only a few companies decide on our future and we in Europe miss the bus?

The future is made where people can test and implement their ideas most efficiently. For this purpose, you need venture capital and the entrepreneurial courage to make mistakes every now and then. We do not lack education or

ideas in Europe, but we are at risk of becoming more and more worriers instead of innovators. I often ask myself if we would reject the automobile as “nonsense” and fight against it if it was invented today.

Where do you see a particular need for action?

We need more venture capital and courageous entrepreneurs; we will lose ground more and more otherwise. On top of that, our focus was far too long on “incremental” innovation, product improvements, but we ignored disruptive innovation. We need many more visionaries again – in all fields of society. Changes do not come by themselves; they follow a vision. But I get the impression that society and politics are now a bit more open for this again compared to previous years.

You spend almost one third of your time with research journeys and expeditions. How can we imagine such a journey, and could you tell us what your last location was and what you have researched there?

In most cases, I follow a specific megatrend and research a lot regarding data, facts, and scenarios as well as the most important protagonists. I then contact these persons and talk to them about developments and their and our scenarios on future developments. This often leads to very interesting insights for both sides. Currently, I am in the USA, visiting numerous founders, investors, and scientists on the subject of “future food production”. After discussing evaluations, expectations, and projections of 30 to 50 experts, we locate the expected tipping points with this trend in our road maps. The best way to research the future is to talk with the people who are working on it.

Are there places in the world where you can research the future particularly well? Where are these places and what defines them?

By now, there are many “innovation hot spots” that partially have very different subjects or focus technologies. Silicon Valley still is one of the places where you can discover and see a lot – particularity when it comes to mobility of people

and goods in the future. But I also spend a lot of time in China nowadays. China is very well-prepared in many of the future key technologies. However, places are only spots where interesting and visionary people live, work, and exchange views. That is why I also like visiting these people at fairs, technology festivals, or conferences such as the South by Southwest (SXSW) in Austin, Texas.

What is the proportion of speculations and Utopian dreams in futurology? Does a futurologist need a certain degree of imagination?

Absolutely! Future describes a time that is not yet here. But you can and should take the freedom and time to imagine a Utopia or a scenario with your imagination. Then you will see more clearly why people are working on these visions and what their motivation is. Speculation is always required when you can justify it based on logics, models, data, and facts. Ultimately, Utopian dreams and speculations even influence the future: Whenever people share these ideas, this changes the way of thinking and the dynamics of developments in a system.

How useful is it to look back to the past for your work? Is it useful to compare the industrial revolution of the 19th century to current changes?

You can notice and derive certain patterns from the past that will be applicable for the future as well. Human behavior is easier to understand when you study the past compared to just looking at the present. You soon come to realize that innovation has always been the driving force of changes in society, work, and life of people. In the past, social acceptance of breakthrough innovations has been very low at the start of a development as well. When the prospect of electric energy “for everyone” was presented at the Paris International Exposition in 1900, the majority of the population was against bringing electric energy to houses. Today, we see similar reservations against artificial intelligence, electric cars, robots, and many other technologies.



Lars Thomsen
future matters

<http://future-matters.com/lars-thomsen>

Where do you see the IT sector in 10 years from now? What are the biggest challenges?

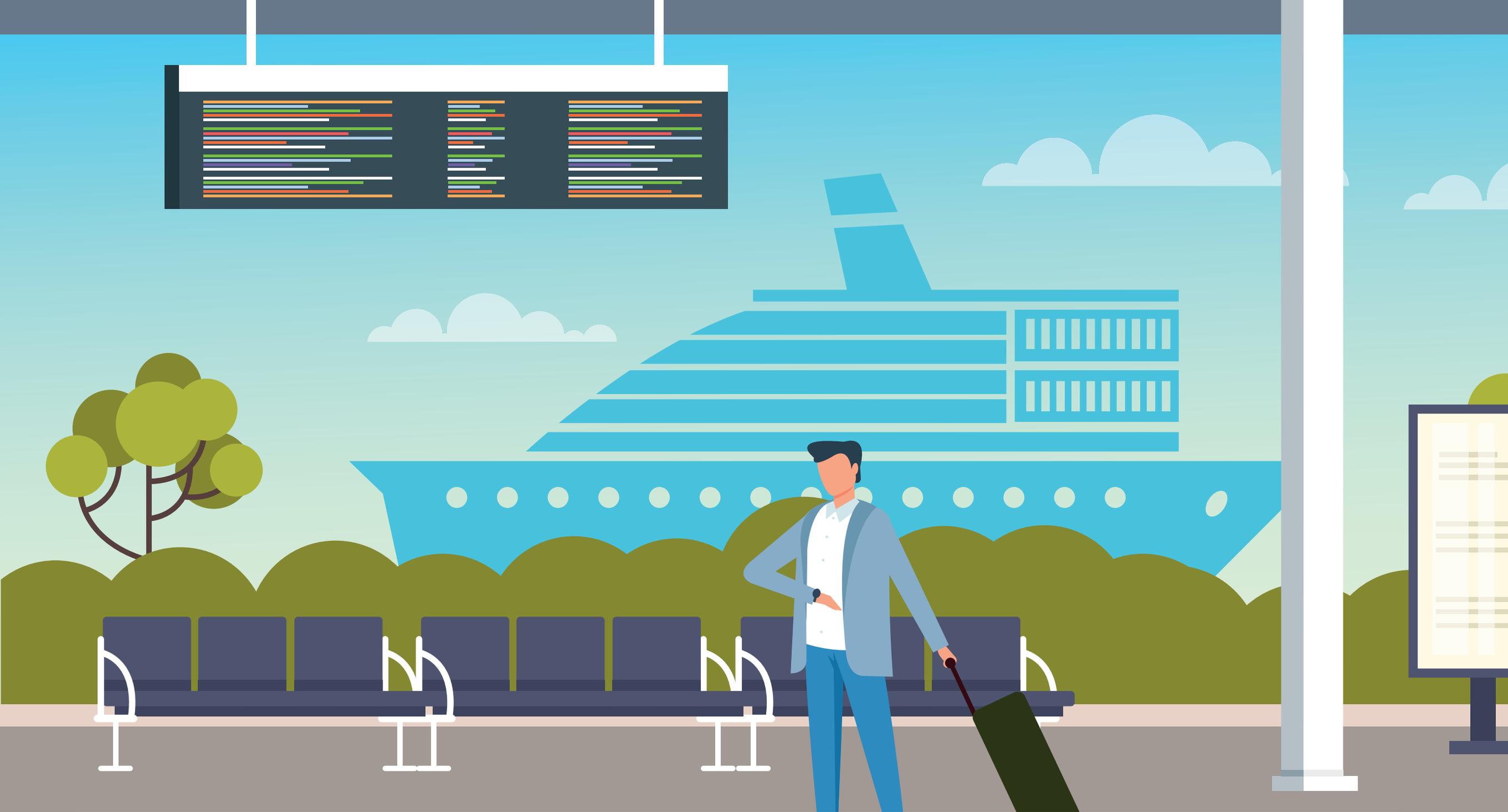
Artificial intelligence is the most important challenge for the IT sector because it essentially presents something that is completely different compared to batch processing or classic programming. Machine learning is a completely new paradigm for interactions between humans and machines in the future. The abbreviation IT stands for information technology. You do not have to be a futurologist to realize that it is about more than information: It is about intelligence and the interaction between human and artificial intelligence in almost every aspect of work, society, education, and economy. This means that the IT sector and the people working there also need to relearn and rethink things. And not only our children – all of us!



Introducing a New Sustainable Technology Called Carrot

Martin Meyer

Always looking for the latest unique thing, that is even healthy and easy to handle? It's so simple! It's stupid, it's the carrot! You don't believe it? Watch this video and convince yourself! The good things still exist and resist even digitalization.



Autonomous Database and Changing Expectations for DBAs:

When Your Ship Comes In, Will You

Jim Czuprynski
Be Waiting at the Train Station?

It is Monday, and you are a typical senior Oracle DBA with a metric ton of run-of-the-mill tasks to accomplish, plus a brand-new application development project that your boss has made you the lead project manager for because you have developed a reputation within your organization for being extremely organized and focused upon the needs of your company's businesses.

As you turn to the normal weekday tasks at hand – checking if all of last night's database backups were successful, looking for any unexpected spikes in poor database performance, and thinking about how to keep your junior DBA's performance tuning expertise up-to-date – there's a knock at your cubicle. You look up and realize it is your most troublesome user, Bernice Pane-Diaz, who has worked at the company for almost 40 years and who also just happens to be the cousin of the CEO.

Bernice mutters the words you most dread to hear: *"There's something wrong with the database."*

Your heart flutters a bit as you ask, "What seems to be the problem?" Bernice says, "My query is running slow again. I need it to finish by lunchtime, and it has been running since my last break about an hour ago. You better get it fixed." You know from experience that now you are going to have to personally disengage from your schedule to take a look at what is wrong with the SQL statement, application, and maybe even the database itself. And you remember that the CEO encouraged your mentor, the prior Oracle DBA, to seek other opportunities when she accidentally got on Bernice's bad side.

In the back of your mind, a voice keeps whispering: *There has got to be a better way.*

The Safest Place for a Ship Is at Harbor ...

I talk a lot with colleagues at Oracle user events, and I detect there is a still quite a bit of confusion and concern about where our profession is heading, particularly with the onset of Oracle Cloud Infrastructure and, more recently, the Autonomous Database. Our profession demands constantly upgrading our skill sets after any minor database release, and the pressure to direct our teams of developers and DBAs to build the best systems possible demands we consider the best technology for the job at hand. But lately, I have also seen some interesting sea changes in IT organizations that portend a different path for our profession.

On-premises isn't really as great (or safe) as everyone believes.

A lot of CIOs and senior managers I have spoken with desperately want to get out of the datacenter business. Granted, some organizations have regulatory or security constraints that require them to remain on-premises, but for many shops it makes sense to move to a Cloud-oriented strategy to manage hardware capacity effectively and flexibly. And while there is a natural resistance to placing trust in someone else's datacenter, there is also a growing realization that our own datacenter personnel must be vetted with extreme discretion to avoid having them **suborned by outside actors**.

The BiCloud offers intriguing possibilities. The recent announcement of the **new Oracle Microsoft partnership** – what I like to think of as *The BiCloud* (with apologies to Asgard) – may finally introduce the best of both worlds for IT organizations: the unquestionable security and performance of Oracle databases when absolutely needed, paired with Microsoft SQL Server databases when less demanding



performance is needed, combined with the *de facto* dominant Microsoft Office 365 for the front office.

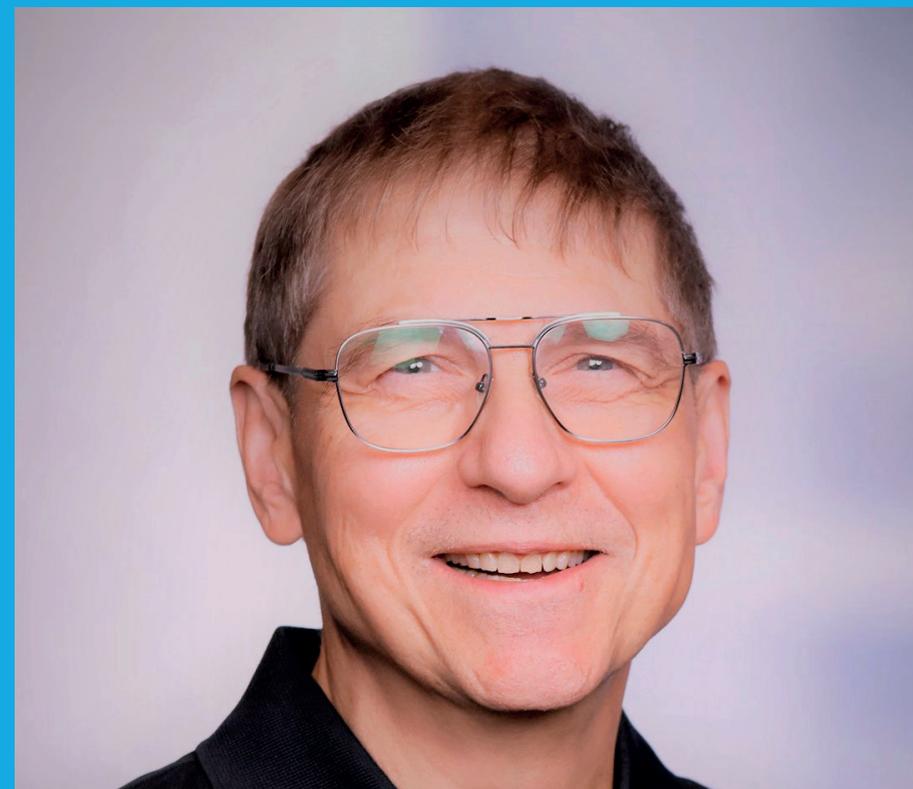
If Data Is the New Oil, Then Bringing It to the Surface is Job One.

Finally, the era of the DBA acronym connotation of “Don’t Bother Asking” is coming to an abrupt end. The new role – what I’m calling the *Enterprise Data Architect* – is focused on getting precisely the right data to the right user community at the right time – now! – securely and without added complexity. That means we will need to embrace Oracle features like 18c’s Partitioned External Tables and 19c’s Hybrid Partitioned Tables so we can combine data from within our internal Oracle databases with external data in CSV, HDFS, or JSON format.

Autonomous DB: Not a Toddler Anymore

And that brings us to what I see as the true promise of Autonomous Database: If used correctly and for the appropriate application workloads, it can be a true force multiplier for busy Enterprise Data Architects. As we approach Oracle OpenWorld 2019, it is important to realize that Autonomous Data Warehouse (ADW) is almost two years old now, and Autonomous Transaction Processing (ATP) nearly 18 months old, so there has been plenty of time to shake out any unexpected issues with either platform.

I recently leveraged ATP Serverless (ATP-S) to shake out a scalable release of Swingbench that incorporates the Transaction Processing Performance Council’s “extreme” OLTP workload (TPC-E) that simulates transaction processing for a relatively complex stock trading system. I was pleasantly surprised to find that ATP-S provided five specific database services for each set of OLTP or reporting transactions. All I had to do was select the most appropriate service to assign the transaction to, and the ATP-S instance easily handled the transaction load that I threw at it.



About Jim Czuprynski

Jim has nearly four decades of professional experience in IT, serving diverse roles at several Fortune 1000 companies before becoming an Oracle DBA in 2001. He has been an Oracle ACE Director in 2014 and is a sought-after public speaker on Oracle Database technology features.

Jim has authored over 100 articles on facets of Oracle DB administration since 2003 at databasejournal.com and IOUG SELECT. His **Generally ... It Depends** contains regular observations on all things Oracle and the state of the IT industry. He is currently the Senior Enterprise Data Architect for Viscosity North America.

Even more impressive, the new *auto-scaling* feature of ATP-S detected that over time, the workloads that I was testing would perform better with the addition of OCPUs. I had originally allocated just two OCPUs to my database instance, but as the application workloads' demands increased, ATP-S automatically added two more OCPUs. When the peak demand period had passed as my workloads neared completion, ATP-S automatically reduced the number of OCPUs from four to three, and then from three to two – all without any manual intervention.

ATP Dedicated: A Serious Commitment

I have also had the opportunity recently to experiment with the latest release of Autonomous Transaction Processing known as *ATP Dedicated* (ATP-D for short). The big advantage of ATP-D is the elimination of potential “noisy neighbors” – for example, having to share a virtualized hardware platform's resources with other potential consumers of similar resource demands.

Once again, I leveraged my Swingbench implementation of the TPC-E application workload against an eight-OCPU ATP-D instance to see how well it could handle its demands. My experimentation also yielded a look at the implementation of another relatively new feature in Oracle 19c, *Automatic Indexing*. Automatic Indexing is automatically activated on any new ATP-D instance, so once I had loaded the thirty-odd tables and corresponding primary key indexes required to execute a sufficiently-robust TPC-E workload, I was able to test out how well Automatic Indexing ascertained the need for any beneficial secondary indexes.

To my satisfaction, Automatic Indexing not only identified about two dozen secondary indexes based on the workload I generated, it also implemented the handful of them that led

to immediate improvement of the workload by a factor of over **670X**. Many of the workload's SQL statements improved their performance by several orders of magnitude as a result of the newly constructed indexes; in fact, two statements improved by a factor of over **110,000X**. I'll be publishing deeper details of my experiences in an upcoming white paper just after Oracle OpenWorld 2019, but for now, here is a look at the corresponding [summary report](#).

In my playbook, the best thing about Automatic Indexing is that it is a likely foil for the case of Bernice, the application user whose constant complaints couldn't be dismissed, and the disruption those complaints caused for our typical Oracle DBA's daily workload. While the need for a secondary index certainly *might* alleviate Bernice's long-running query issues, it does take time to figure out if that is really the best solution to the problem. That is time spent away from my most important task as an IT professional: *helping my application development team build better systems proactively, not reactively.*

... But That's Not What A Ship Is Built For.

There is no doubt that the role of Oracle DBA is definitely undergoing a dramatic upgrade itself as the shift towards Cloud continues at a rapidly-increasing pace, and there is no doubt that Oracle technology like Autonomous DB will continue to contribute to the dramatic changes required for the skill sets and responsibilities of Enterprise Data Architects. Personally, I have chosen to embrace these shifts as challenges to overcome instead of a direct threat to my professional career. Perhaps it is time to contemplate the wisdom of the old saying: “A ship in harbor is safe. But that is not what ships are built for.”

How Monty's Daughter Got a Sea Lion

Martin Meyer

MariaDB continues the tradition to name the software after the founder's children. The database management system is a fork of MySQL that was initiated in 2009 by MySQL's former main developer Michael "Monty" Widenius.



MariaDB bears the name of Monty's younger daughter Maria (MySQL is named after his first daughter My). Initially, a storage engine was already called Maria, but to avoid mix-ups it was renamed Aria, when MariaDB started.

Trying to figure out, what kind of logo should be chosen, the involved team first decided that it should absolutely be once more an aquatic mammal. Because the dolphin was already part of the MySQL Logo, among the options were various species of killer whales, a narwhal and a seal or sea lion as MariaDB Release Manager **Daniel Bartholomew remembers**. The team finally decided for the seal as it is known to be fast, smart and friendly.

The initial logo was created by Mike Zinner and the outcome was technically not a seal but a sea lion. Still, the logo is often referred to as a seal.

Recently the brown color of the lion has been changed to white and the whiskers have been dropped, but the basic shape has remained. However, the MariaDB foundation, which was formed in 2012 and oversees the development of MariaDB, still uses the brown logo that you can see on the right.

Since the first development steps in 1994, MySQL has developed into a central pillar of the Internet and the open source world. But then MySQL was purchased by Oracle in 2010.

MariaDB again is a free, relational open source database management system. In the meantime, according to expert opinion, the little sister Maria has technologically overtaken



its big sister My in many areas according to experts. Its lead developer is still Michael "Monty" Widenius.

By the way: Maria and My also have a brother named Max who gave the name for MaxDB, a relational database management system (RDBMS) currently developed by SAP.

Image: <https://mariadb.org/about/logos/>



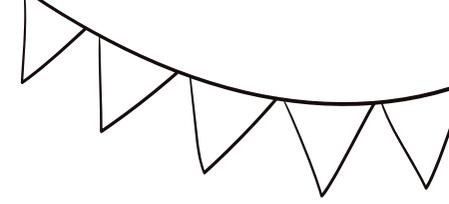
Sohaib Abbasi



Frank Hoffmann

“The main benefit of Forms was developer productivity”

Oracle Forms celebrates its 40th anniversary this year. In our previous issue we featured Frank Hoffmann's extensive article on the history of the famous software tool as well as his interview with Forms developer Bill Friend. As promised, we now bring you the interview with Sohaib Abbasi who took over when Friend left in 1985. Abbasi was responsible for Forms until his retirement from Oracle in 2003. By then he was Senior Vice President of the company's Tools and Education divisions.



Can you tell us how you came to Oracle and why you took over where Bill Friend left off?

In 1982, I joined RSI (Relational Software Inc.) to start the sales operations in 13 mid-western states of the US. At that time, RSI did not have any customers nor an office in the Midwest. After two years of meeting hundreds of customers to market and sell Oracle products, I transferred to product development in 1984. I chose to work on Tools because the number one customer requirement was to help improve developer productivity. And Tools improved developer productivity.

How popular was Forms when you got into responsibility and what did you think about its 4GL (= "fourth generation language") technology at the time?

Almost all Oracle customers used Interactive Application Facility (IAF) that was first renamed to "SQL*Forms" and later to "Oracle Forms". It was the primary "front-end" for building data entry, or transaction processing, applications for Oracle. As an early 4GL, Forms pioneered several concepts including declarative application development, metadata-based specification, automated metadata-driven code generation and visual development environment.

How important was backwards compatibility for Oracle Forms all these years?

Forms supported compatibility with multiple versions of the Oracle database, operating systems, and GUIs as well as backward compatibility with older Forms versions. In fact, early Oracle customers who built applications on mainframes with character-mode interfaces migrated these applications to client-server systems with graphical user interfaces (GUI) and later to the Internet with web browser interfaces – all without changes to their code. In other

words, using Forms, the customers automatically adapted to new computing systems.

What do you think are the key benefits of Forms, why did Forms become a strategic tool for Oracle and other tools did not?

The main benefit of Forms was developer productivity: building transaction processing applications faster than using 3GLs or other tools. Another key benefit was database integration: Forms automatically took advantage of the latest Oracle database innovations. Perhaps, Forms' most important unique benefit was portability and adaptability –portable applications that ran across multiple operating systems and GUIs – adaptable applications that even ran on multiple generations of computing – mainframes, client-server and Internet. Portability and adaptability without requiring customers to change their code.

How important was Forms for Oracle?

Until 1994, on mainframe and minicomputers, almost every Oracle customer used Forms. After 1996, on client-server systems, Forms became the preferred tool for Oracle, competing against third party tools on Microsoft Windows. And, in 2001, Forms enabled applications to be access on the Internet, simply by using a Java-powered web browser. The Tools product line, including Forms, was important for Oracle but the reason for its importance changed. Until 1994, Tools were important as a significant revenue generating product line. After 1994, another reason for the importance of Oracle Tools was that Oracle E-Business Application Suite was built and delivered using these. Oracle Tools, including Forms, was one of Oracle's top advantages over the traditional database vendors. IBM, Ingres, Informix and Sybase did not offer similar tools. In the late 1980's, Tools generated more than 35% of Oracle's product revenue.



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What were the major enhancements you added to Oracle Forms in your responsibility time for Forms?

Developer productivity: Metadata-driven specification stored in the database. Visual development using a “screen painter”. Scalability and performance: Client-side PL/SQL that supported application partitioning – moving business logic, coded in PL/SQL, between client and server to improve performance. Portability and Adaptability: allowed mainframe applications to seamlessly migrate to client-server platforms and later to Internet – all without forcing customers to change their code.

PL/SQL was added to Forms in 1988 with Version 3 – was this difficult?

Forms was the first tool to include PL/ SQL. The database included PL/SQL after Forms. Adding PL/SQL was difficult because Forms had to help debug PL/SQL V1. Adding PL/SQL to Forms was also difficult as Forms supported declarative application development and PL/SQL supported procedural development – two different approaches. In addition, both Forms and PL/SQL separately integrated with the Oracle database and it was difficult to share this context. The benefit was that PL/SQL became an extension to write any business logic in Forms, making Forms even more capable.

How big was your development team in your active years?

Tools development in 1985, after Bill Friend left, was one person: me. By the time I retired in 2003, Oracle Tools had more than a thousand developers.

What do you think how many customers have developed with Forms in its peak times?

The majority of Oracle database customers and every Oracle E-Business Application customer were using Oracle Tools, including Forms. Ten of thousands of enterprises used Forms.



Frank Hoffmann
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Did you think Oracle Forms would reach the age of 40 years today with the perspective of another 10 years support?

We certainly did not plan for that long. We always focused on the next version and, more importantly, the next computing platform like the Internet.

Why do you think is it so difficult to replace Forms?

Forms offered a unique declarative development approach well integrated with the Oracle database. As the Forms applications continue to function, there was less reasons for customers to consider alternatives.

The interview was conducted by Frank Hoffmann on January 21, 2019.



Apache Kafka Could Be Something for You to Consider

Ann-Sofie Vikström Often



Ann-Sofie Vikström Often

Kafka or more correctly Apache Kafka, is an open source distributing platform, originally developed by LinkedIn, and donated to Apache Open Source Foundation around 2012. In 2014, three former employees of LinkedIn (Jun Rao, Jay Kreps and Neha Narkhede) started the company [Confluent](#), focusing on Kafka. Since then Kafka has grown and is now used by many enterprises as their preferred technology of data streaming.

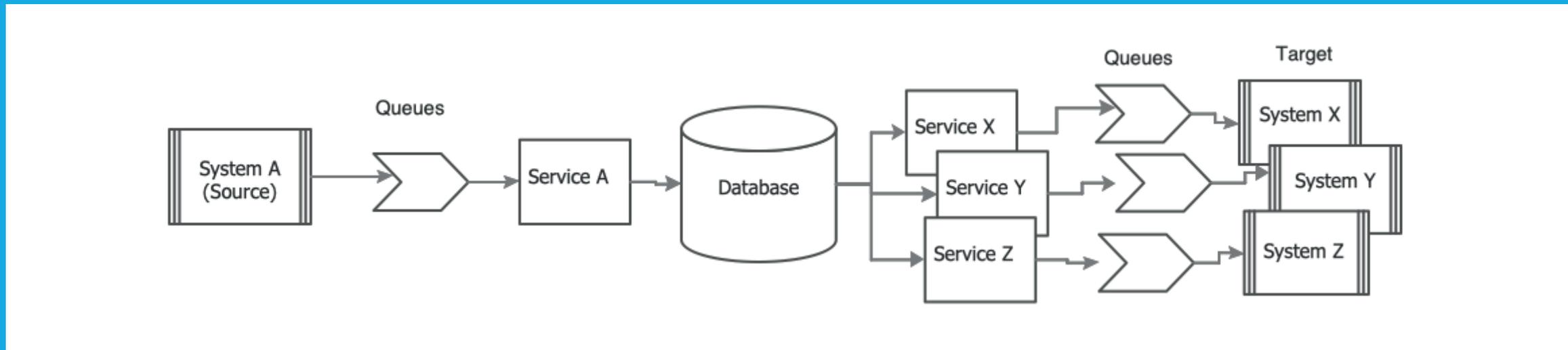


Image 1: Example of a high-level architecture of traditional distribution of data, used in many enterprises today, and the complexity added to it due to different protocols for transportation of data to target systems. (source: Ann-Sofie Vikström Often)

Is your enterprise struggling to spread information to different consumers and using a lot of time re-running lost transfers, or at least what you think is lost? Does this sound familiar to you? Then Apache Kafka could be something for you to consider!

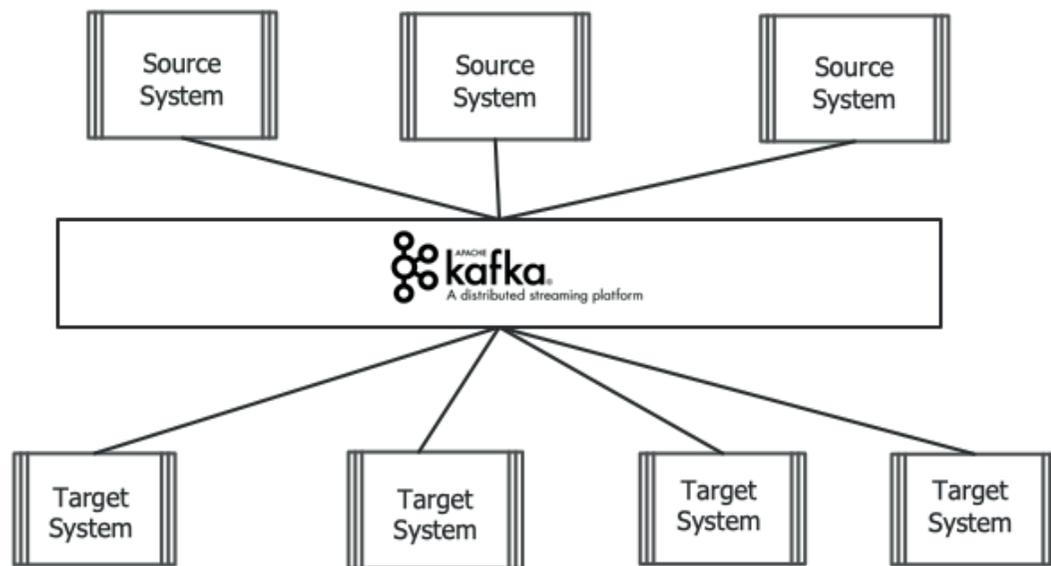


Image 2: The architecture of image 1 represented in Apache Kafka (source: Ann-Sofie Vikström Often)

Apache Kafka has three capabilities, for also being a more or less real-time streaming platform:

- Publish and subscribe to streams of records or the enterprise messaging system
- Store streams of records in a fault-tolerant durable way
- Process streams of records as they occur

Use cases for Apache Kafka:

- Messaging system
- Activity tracking
- Gather metrics from many different locations, and application logs
- Stream processing
- De-coupling of system dependencies
- Integration with Big Data technologies, i.e. Flink, Hadoop, Spark etc.
- Even traditional transactional systems (but in asynchronous fashion) – like ordering system, invoicing system etc.

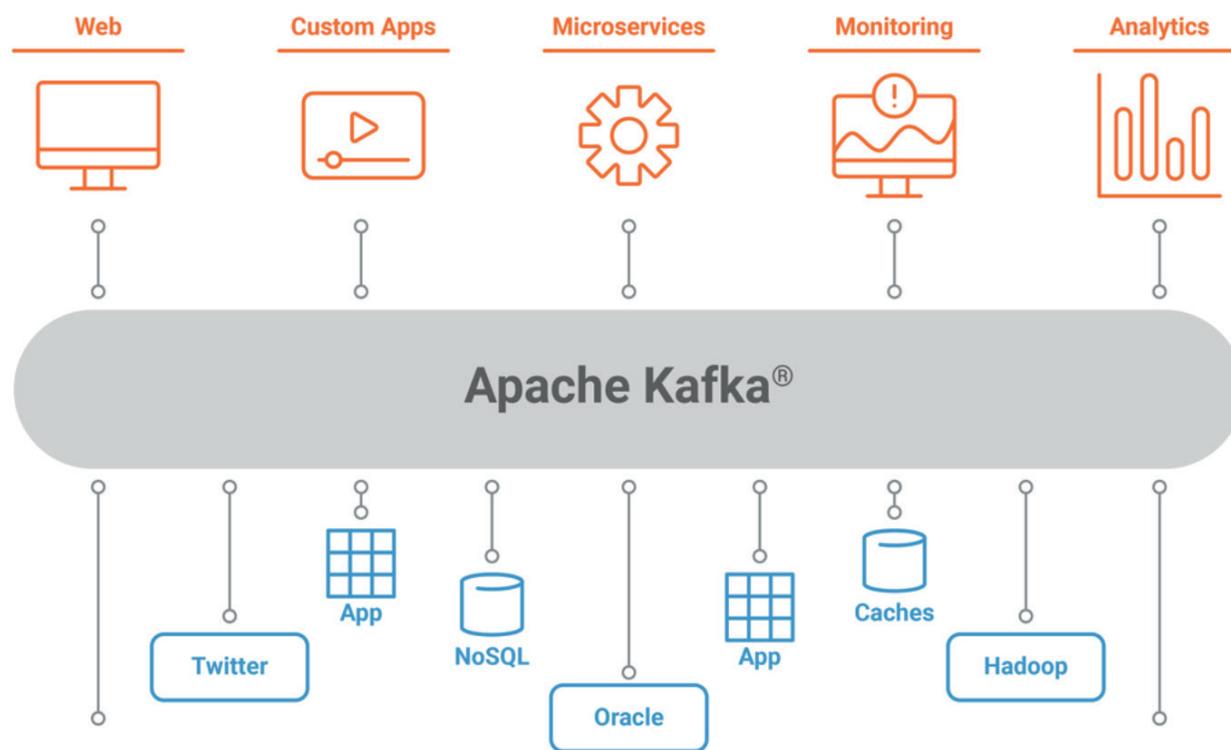


Image 3: Apache Kafka used as central data hub (source: confluent.io)

Horizontal scalability

There are examples of hundreds of brokers or Kafka servers, and with up to two million messages per second depending on the hardware used. With this high performance it is naturally given low latency as well.

Main objectives of Kafka:

- Get data from one system to one or more in real time
- Transform or react on the streams of data in real time
- Real time Extract-Transform-Load (ETL) processing
- Merging message bus with the storage in the single solution

Many people think of Apache Kafka as an event driven Publish/Subscribe framework but with Kafka Streams

and Kafka Connect, it can be a perfect substitution of the traditional distribution platform shown in Image 1.

But how does it work?

- The streaming records are stored in categories, called topics, and run in the Kafka cluster on one or more servers
- The clusters can be replicated in multiple datacenters

What is a topic?

A topic is the feed that the stream-records are published to. Naming conventions should be adopted from day one, since changing names later is difficult and therefore not recommended. On Chris Riccomini's blog you can find a [useful guideline](#) for Kafka topic naming.

A topic can have 0 to many consumers, and a partitioned log maintained by the Kafka cluster. The partition is keeping the order of the streams as a structured commit log.

Each record consists of a key, a value and a timestamp. The record is assigned to a unique sequential id, called "offset" in the partition. The record is being kept in a partition similar to the record in the database, and not being discarded on read as it is situation with traditional messaging systems.

Apache Kafka provides the following four core APIs:

- **Producer API** – allows an application to publish to Kafka Topics.
- **Consumer API** – allows an application to subscribe to Kafka Topics and process the stream of records
- **Streams API** – allows an application to act as a stream or ETL processor of Kafka Topics producing output streams to other Kafka Topics

- **Connector API** – allows building and running reusable producers or consumers that connect Kafka Topics to an existing application or a data system and can be declaratively configured. There is a long **list of supported connectors**, but it is also possible to add unsupported as well as own connectors.

Communication between client and servers is done by a language agnostic TCP protocol, which means you can use different client software.

Never lost again

Since messages are appearing in the order they are sent by the Producer, the Consumer will never lose any record again. Setting up a topic with replication factor is part of making this happen.

This was a brief overview, but how is this important to you, an Oracle user?

As an integration consultant, I am facing a lot of different issues at customer sites using Oracle middleware. One of them is assuring that all systems have received the data they are subscribed to. Other issues are plenty of time used in Operations to surveil and resend, duplicate control, heavy load when resending and so on. A Kafka-based system can solve these problems easily as every message can be replayed or resent as needed. Moreover, Kafka Streams deliver exactly one guaranty, thus preventing duplicate messages to happen.

And of course, the most used use case – and behind the origin of this platform – is streaming data to big data or to data warehouse databases and back (by using Change Data Capture or CDC connectors).

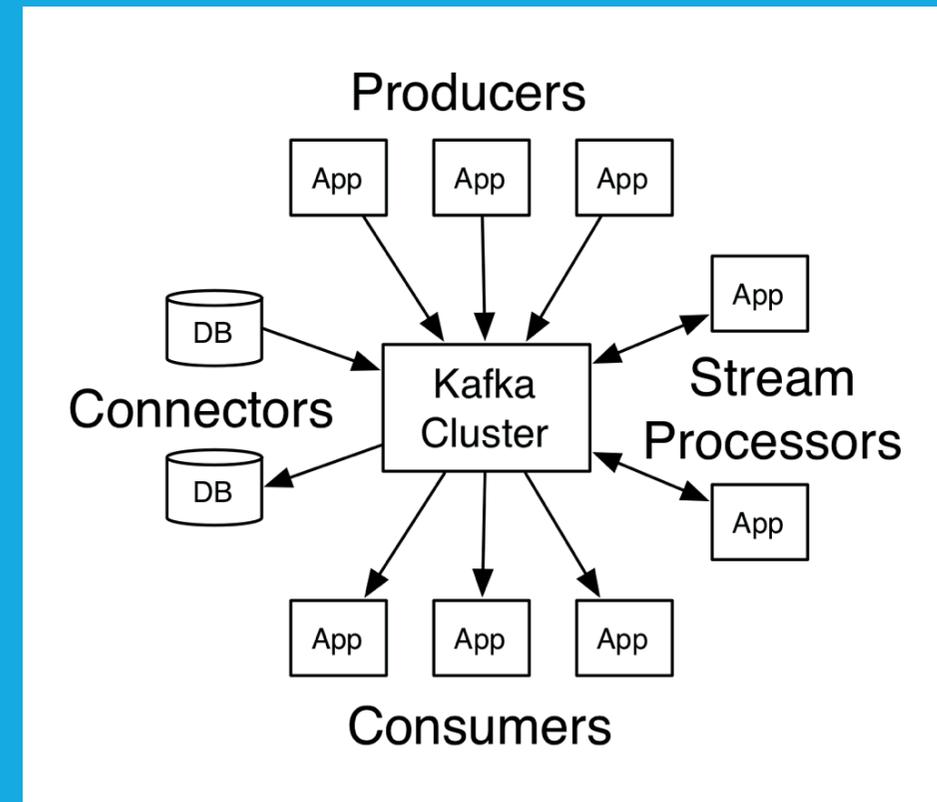


Image 4: Kafka's four core APIs (source: kafka.apache.org)

Want to learn more? There is a lot of information out there so go ahead and test it out!

[Apache Kafka website](#)

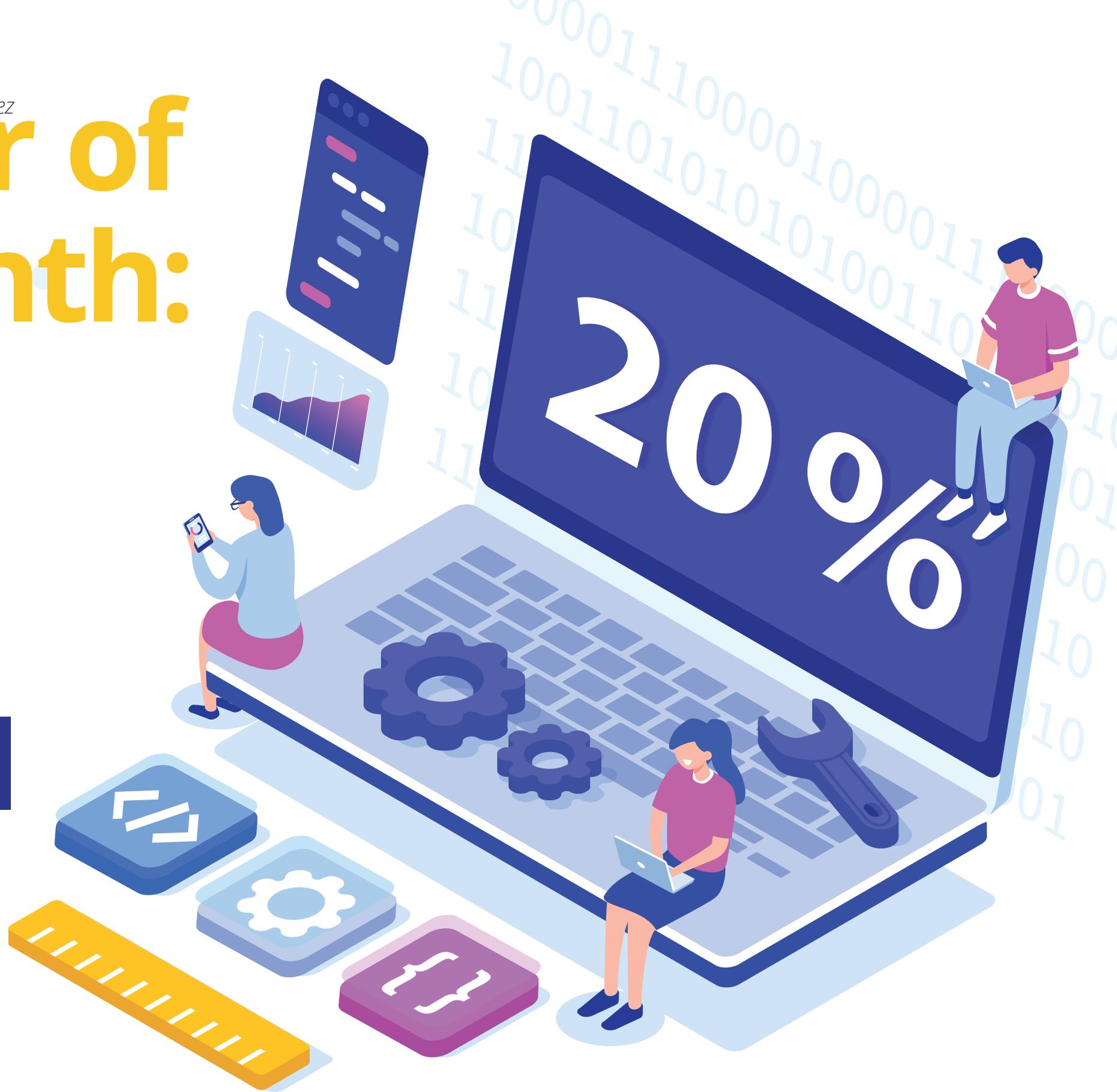
[Confluent website](#)

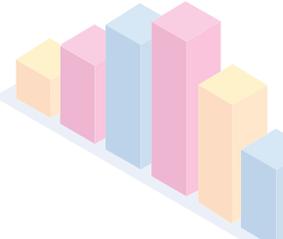
YouTube video: [The Event Streaming Platform Explained | Jay Kreps, CEO, Confluent](#)

Marcos López

Number of the Month:

The Share
of DevOps
Elite
Performers
has Risen
from 7
to 20 %





At the end of August, the experts of DORA (DevOps Research & Assessment) together with Google Cloud have published information and statistics on the status quo of DevOps. As their study “Accelerate State of DevOps 2019” – the largest and longest running study of its kind – shows, the share of Elite Performers has almost tripled: from 7 to 20 %. Among the Elite Performers are DevOps pioneers who have firmly established the improvement from the areas of software development and system administration in the corporate process.

For the survey results, answers from more than 31,000 experts from all over the world have been incorporated. The study shows that DevOps approaches and methods are gaining ground and that companies from all industries are improving their overall DevOps expertise.

It further suggests that Elite Performers are increasingly relying on open source solutions rather than proprietary software for process management, because costs and maintenance for these solutions now represent an incalculable risk for these companies.

The increase of DevOps Elite Performers is a sign that DevOps can help improve performance and productivity in organizations.

However, there are also a few downsides in the current report: While the number of elite performers almost tripled from 7 to 20 %, the number of high performers dropped by more than half, from 48 to as little as 23 %. High performers, like the Elite Performers, are among the DevOps experts. If one takes the proportion of elite and high performers together, one comes to 43% of profound and regular DevOps use in companies. The share of elite and high performers nevertheless shrank by a total of 12 % compared to the previous year, from 55 to 43 %. Therefore, next year’s “Accelerate State of DevOps” should be interesting. It will be exciting to see whether the trend towards an increase in elite performers will continue and how this will affect high and medium performers.

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<https://cloud.google.com/devops/state-of-devops/>

<https://cloud.google.com/blog/products/devops-sre/the-2019-accelerate-state-of-devops-elite-performance-productivity-and-scaling>

<https://www.doag.org/de/home/news/die-studie-accelerate-state-of-devops-2019-belegt-anteil-der-elite-performer-steigt-fast-um-das-dreifache/detail/>





Oracle OpenWorld and Oracle Code One 2019

Heli Helskyaho

Oracle OpenWorld and Oracle Code One were held from September 16 to 19 in San Francisco.

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 www.oraworld.org

This year the events were a bit different since Oracle changed their colors right before the event and this time the city was not red as before. The rebranded Oracle is seen everywhere including the UI of the Oracle Cloud, the corporate website, UX of the Oracle Applications, and all the Oracle slides.

Also, this time, the streets were not closed and the events were organized in a more compact way: OpenWorld was in Moscone West while Code One took place in Moscone South. Right before the events, we received sad news that Mark Hurd had to stay on sick leave and would be replaced by Safra Catz for his keynotes. I wish Mark a speedy recovery.

Something that has always stood out – and it was the same this year – are Larry Ellison’s keynotes. What made them special this year were signs of collaboration with Microsoft and VMware. It was very nice to see that Oracle has seen the benefits of collaboration instead of just competing. In his keynotes, Larry announced many interesting things. Maybe the biggest thing was the **Oracle Cloud Free Tier**, the new always free cloud service. I am sure this is the right step for Oracle to win over the cloud customers.

Many customers surely will be convinced by the products when they have a chance to test them. Products like APEX (Oracle Application Express), database options, machine learning, and of course the Autonomous Database itself. Larry also announced Oracle Autonomous Linux, autonomous JSON database, the blockchain table, and a new JSON datatype. Larry talked about the Second-Generation Cloud, converged database, Oracle Data Safe, OCI Next Generation Storage Platform, new data centers, new hardware (Exadata X8M, ODA X8), and so much more. Something that might have been a surprise to some customers was the news about the support for non-container database architecture to end with database version 20c.

The week in San Francisco was extremely busy with all the presentations, panels, exhibitions, Groundbreaker Hub activities, meetings, and of course dozens of parties and dinners. I really enjoyed this year’s OpenWorld and Code One very much. I wish all the best for the relationship building with Microsoft and VMware. I believe it will not only be a benefit for Oracle, Microsoft and VMware but also for all their customers. Collaboration is always better than competing.



Interview by Christian Luda

“Our main goal is achieved when participants leave the conference with a smile on their face”

*From October 15 to 18 the **“HrOUG 2019”** will take place in Rovinj, Croatia. It marks the 24th annual conference of the Croatian Oracle user group HrOUG. On this occasion we spoke to the user group’s president Davor Ranković about what makes this conference special.*

Davor, what made you start an Oracle user group in Croatia?

25 years ago, we were regular visitors of EOUG conferences across Europe. We realized that these conferences were a little bit different from other conferences, and we liked the idea about a conference that presents lots of knowledge and opportunity to learn, but also plenty of time for networking and fun during social evening events.

With a history of more than 20 years, the Croatian Oracle User Group is one of the older user groups in EMEA. How has it developed? What were major steps?

Our engine was the executive committee consisting of 10 members – 5 representatives of Oracle partners and 5

representatives of Oracle users. All members had a great impact in the Croatian Oracle community and our first annual conference already had about 200 participants. Each year, our conference grew in number of lectures and participants.

What are the main goals of your user group?

Our mission is to promote achievements, best solutions and appliances of technology among community members. HrOUG is bringing insight into the best market solutions for our community even when they are not strictly related to Oracle but have game-changing or disruptive potential. Connecting people is something that we intend to do. People who need solutions or knowledge, people who have something to share and to offer.



Can you tell us more about this year's conference?

Our annual conference is being held for the 24th time this year. The location of our conference is Istria, a region that many compare with Tuscany in Italy. The conference takes place on St. Andrew Island, right in front of Rovinj, one of the most beautiful cities on the Croatian Adriatic. We have one rule at the HrOUG conference, which is: "when we work, we work hard, and when we have fun, there are no limits for fun". This year we will have about 90 lectures in 5 parallel streams. It is a great honor and pleasure that the lectures will be delivered by 20 speakers from the Oracle ACE program. The conference is a bit more technology-oriented, though every year we make an increasing effort to integrate application solutions through the end user experience presentation. This year we expect between 400 and 450 participants.

Can you tell more about the agenda of the conference itself?

Traditionally, the conference starts with two keynotes, first by an Oracle speaker who usually presents the audience what's new and shows trends as well as Oracle's current direction. The second keynote will be "Future of Humankind and of the Universe" by Ivica Puljak who is a Croatian physicist, professor and politician. He is best known for participating in the research and discovery of the Higgs boson with scientists at CERN in Switzerland, the European Council for Nuclear Research. The next three conference days are packed with content. The lectures run from morning to evening and are divided into seven streams: Cloud, DBA, Development & Tools, Success Stories & Best Practices, Java, Business Intelligence & Analytics, and APEX. In addition to the HrOUG conference, during the year we also organized our Java conference with almost 300 participants. Therefore, there are no Java topics at the annual HrOUG conference. At the conference, participants rate their satisfaction with the lecturers and their lectures. When the surveys are processed, we publish the top five lecturers per stream on the conference website. All survey slips enter

the prize draw for participants. Prizes are drawn on the last day of the conference. Each day, before lunch we will have interesting keynotes: "What is new in the Relational Database World" by Julian Dontcheff (Accenture), "The Basic of Machine Learning" by Heli Helskyaho (Miracle Finland), and "Stress Driven Development, and How to Avoid it?" by Dimitry Vinnik (Salesforce).

What can you tell us about the Oracle Groundbreakers EMEA Tour that will make a stop at HrOUG conference?

This year I participated in the Oracle Groundbreakers EMEA Tour building process and I'm glad we had the opportunity to be involved in the process of selecting topics and presenters for the tour. Since Oracle covers costs, they have an influence on the choice of topics. Oracle has a focus on its business policies and product lines they want to promote. That's the reason why we don't know yet, who and which topics Oracle will approve for the tour. This process goes a little bit slower than we as conference organizers expected. I believe the Groundbreakers Tour will be a great addition to our regular conference program. I expect great presenters with lots of experience.

Your conference participants praised the conference as a unique one where attention is paid not only to the lectures but also the entertainment program itself.

It's true. We try very hard to organize an interesting and entertaining program. The participants of our conference work hard in their companies all year and in addition to the opportunity to acquire new knowledge they deserve to have a good time, relax and have fun. We are aware that it is not possible to satisfy everyone's taste, so for years we have been organizing entertainment according to what we like as organizers. I don't know any other user group conference where participants have three or four parties (most of them with open bar) that are included in the conference fee. Making a profit never will be our goal. Our main goal is achieved when



participants leave the conference with a smile on their face, because they felt the experience that we as organizers wanted to convey.

Oracle no longer has the initiative to convene OUG Presidential Meetings in the EMEA region, which was a great place to share experience and knowledge between user groups. How do you see the future development of OUG in the EMEA region?

I really loved the Presidents meetings organized by Tom Scheirsen. It was a place where we had the opportunity to discuss common topics, find solutions to our problems, and apply all the positive experiences to our user group, thus enhancing the Oracle user community in our countries or regions. Unfortunately, this opportunity is gone, and it's time to organize ourselves and perhaps restart the EOUC, agree on the structure and leadership, and find the best way to fund activities. We need to be aware that the Oracle brand is included in the name of our user groups and they have an impact on the content of our user group conferences. Until we become fully financially independent, we will have to make compromises. There are just few user groups that are big enough to have freedom of choice.

What are your plans for the upcoming years?

Development, whether it relates to Oracle products, applications or technology itself, is extremely exciting and there is a lot of news every year that we want to convey to our members. Today we are in an era of cloud that is finally becoming clearer not only to experts but also to end users of IT products and services. Tomorrow's main topic will be something new, but exciting too. IT development is extremely interesting and if you try to remember what we talked about and used 10 years ago and what is applicable today, you will find that there are so many new things to learn, especially considering the fact that today's phones have reached the level at which they can serve as the only piece of equipment you need and use to get the job done.



About Davor Ranković

Davor graduated from the Faculty of Economics and received a master's degree in management. For 30 years he has worked in large companies, managing IT, organization and communications. What he is most interested in is how to provide quality information for business decision making from the information system, but also from the environment. Big data and data analysis are of special interest to him. In private, Davor is a big fan of high-definition audio and video playback. For years, he has been building the ideal hi-fi system as well as serious home theater.



Heli Helskyaho

Ambassador's Corner

Dear user group leaders,
I hope you and your user groups are doing well!

EOUC Leaders' Meeting

The EOUC leaders' face-to-face meeting will be held on November 18 in Nuremberg, Germany. This meeting will be very important because the main topic of the meeting is starting a legal entity and a new future for the EOUC. I hope many user group leaders will be able to join this meeting.

Oracle OpenWorld 2019

The Oracle OpenWorld and Oracle Code One were in San Francisco in September. We had excellent presentations from EOUC at the event and a good reason to be proud of our members. There is an article about the OpenWorld and Code One in this ORAWORLD issue if you want to read more about it.

All the best to you and your user group!

Best regards,
Heli

Your Ambassadors:

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



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Call for Papers

COLLABORATE 20

August 19 - October 11, 2019
Mandalay Bay Resort and Casino, Las Vegas, Nevada
<https://questoraclecommunity.org/events/conferences/collaborate/call-for-presentations/>

DBA dag

October 12, 2019
Oracle headquarters, Utrecht, The Netherlands
<https://www.nloug.nl/page.aspx>

ILOUG Techdays

Petah Tikva, Israel
<https://www.iloug.org>



Events

Analytics Modernisation Summit

October 8, 2019
Millennium Gloucester Hotel, Kensington, London, England
<https://ukoug.org/page/ukougreporting>

Oracle Groundbreakers EMEA Tour 2019

October 10 - 18, 2019
Dushanbe, Istanbul, Baku, Portoroz, Rovinj, Bucharest
<http://www.ogbemea.com>

HrOUG 2019

October 15 - 18, 2019
Rovinj, Croatia
<http://2019.hroug.hr>

Oracle Groundbreakers Nordic Tour 2019

October 22 - 25, 2019
Copenhagen, Oslo, Helsinki, Stockholm
<http://www.ogbnordic.com>

Security & Compliance 2019

November 5, 2019
The Queen Elizabeth II Centre, London, England
<https://ukoug.org/page/ukougsecurity2019>

Cloud Applications Experience

November 6, 2019
Holiday Inn London, Kensington Forum, London, England
<https://ukoug.org/page/saaspaas>

SAOUG Connect 2019

November 10 - 12, 2019
Emerald Hotel and Resort , Vanderbijlpark, South Africa
<https://www.emeraldcasino.co.za>

QXW - Quest Experience Week

November 12 - 15, 2019
Virtual event
<https://www.questoraclecommunity.org/qxw>

JD Edwards Update Event

November 14, 2019
Fort Voordorp, Utrecht, The Netherlands
<https://www.theoraclecommunity.eu/nl/evenementen/jd-edwards-update-event-2019/>

Autumn Conference 2019

November 15 - 17, 2019
Hotel Riu Pravets Resort , Pravets, Bulgaria
<https://bgoug.org/en/>



Events

DOAG 2019 Conference + Exhibition

November 19 - 22, 2019
Nuremberg, Germany
<https://2019.doag.org/en/home>

Techfest 2019

December, 1 - 4, 2019
Brighton, England
<https://www.ukoug.org/page/techfest19>

Sangam19

December 6 - 7, 2019
Hyderabad, India
<http://sangam19.info/>

DBA dag

December 13, 2019
Oracle headquarters, Utrecht, The Netherlands
<https://www.nloug.nl/page.aspx>

ItOUG Tech Days 2020

January 29, 2020
Milan, Italy
<http://www.itoug.it>

ILOUG Techdays

February 3 - 4, 2020
Petah Tikva, Israel
<https://www.iloug.org/program/>

JavaLand 2020

March 17 - 19, 2020
Brühl, Germany
<https://www.javaland.eu/en/home/>

COLLABORATE 20

April 19 - 23, 2020
Mandalay Bay Resort and Casino, Las Vegas, Nevada
<http://QuestOracleCommunity.org>

Kscope20

June 28 - July 2, 2020
Boston, Massachusetts
<https://kscope20.odtug.com/>



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