

End of Life Avoidance - the best of both worlds with **SAP BW 7.5 on the Google Cloud Platform**

Earlier this year, SAP made it clear that its future is well and truly aligned with SAP S/4HANA; with the announcement of their commitment to support this platform until 2040. To assist and enable customers to make their transformative business transition to S/4HANA, SAP has also extended the maintenance timeframe for SAP Business Suite 7 until 2027 (and then optionally until 2030).

SAP BW/4HANA, the data warehouse counterpart to S/4HANA, has also had its maintenance schedule extended until 2040. By extension, the last version prior to BW/4HANA, SAP BW 7.5, has also had its mainstream maintenance extended to 2027 (with extended maintenance to 2030).

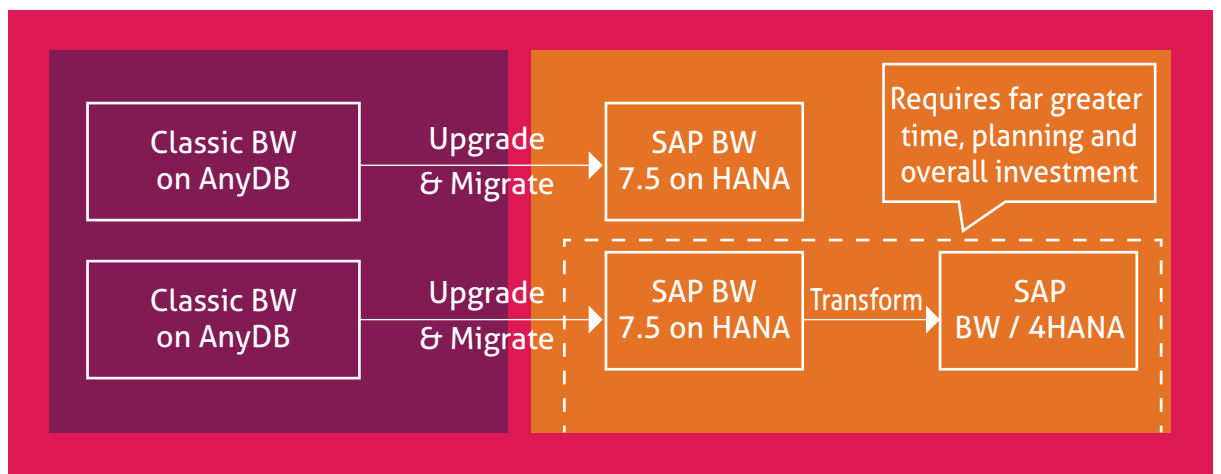
Classic versions of SAP BW prior to 7.5 will have their support expire on 31st December 2020, so with less than 5 months until this deadline – **the time to act is now.**

Why not BW/4HANA?

SAP BW/4HANA, the next-generation data warehouse product based exclusively on the SAP HANA platform, has been at the forefront of SAP's Enterprise Data Warehouse (EDW) roadmap for years now and has been solely receiving all feature investments since 2016, when BW 7.5 was put into 'maintenance only' mode. This is unsurprising, as it offers organisations the most benefits in terms of functionality, openness and integration with data sources. However, with the support deadline so close, there are plenty of reasons to consider upgrading to BW 7.5 **today.**

An in-place conversion (upgrade) to **BW/4HANA has the prerequisite of BW 7.5 on HANA** and includes converting all classic BW objects into their HANA-optimised counterparts, which requires significant planning and effort.

A BW 7.5 on HANA upgrade requires substantially less time and effort than a full transformation to BW/4HANA whilst still providing access to many of the latest features. This enables the team looking after the system to simultaneously deliver BW reporting and also to prepare the landscape for the eventual move to BW/4HANA. When the go-ahead is actually given to move to BW/4HANA, the opportunity still exists to consider one of the newer upgrade strategies (i.e. Remote or Shell Conversion) or go with the classic landscape conversion (standard upgrade), but with the time to do so properly, without urgency dictating a hasty decision or last-minute strategy.

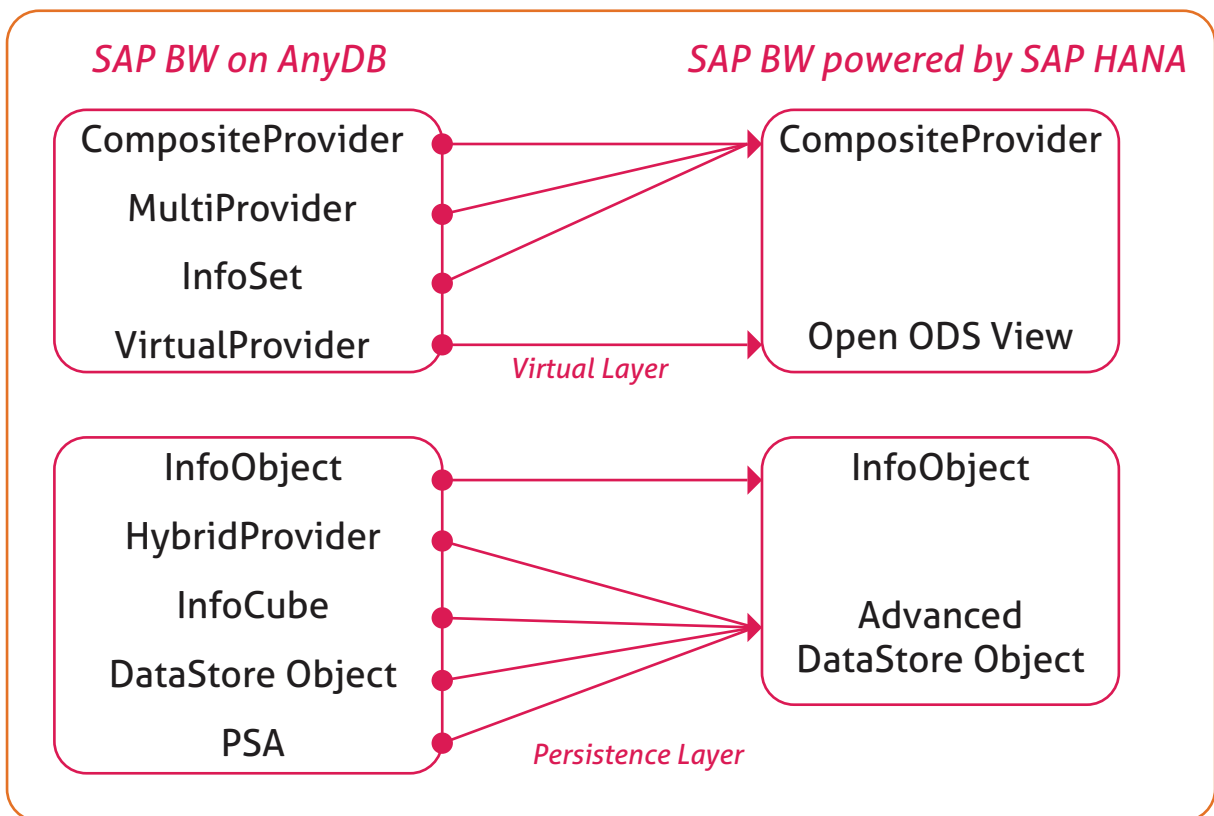


Benefits of BW 7.5 on HANA

SAP BW 7.5 powered by HANA is not new by any stretch, but its benefits are just as applicable today.

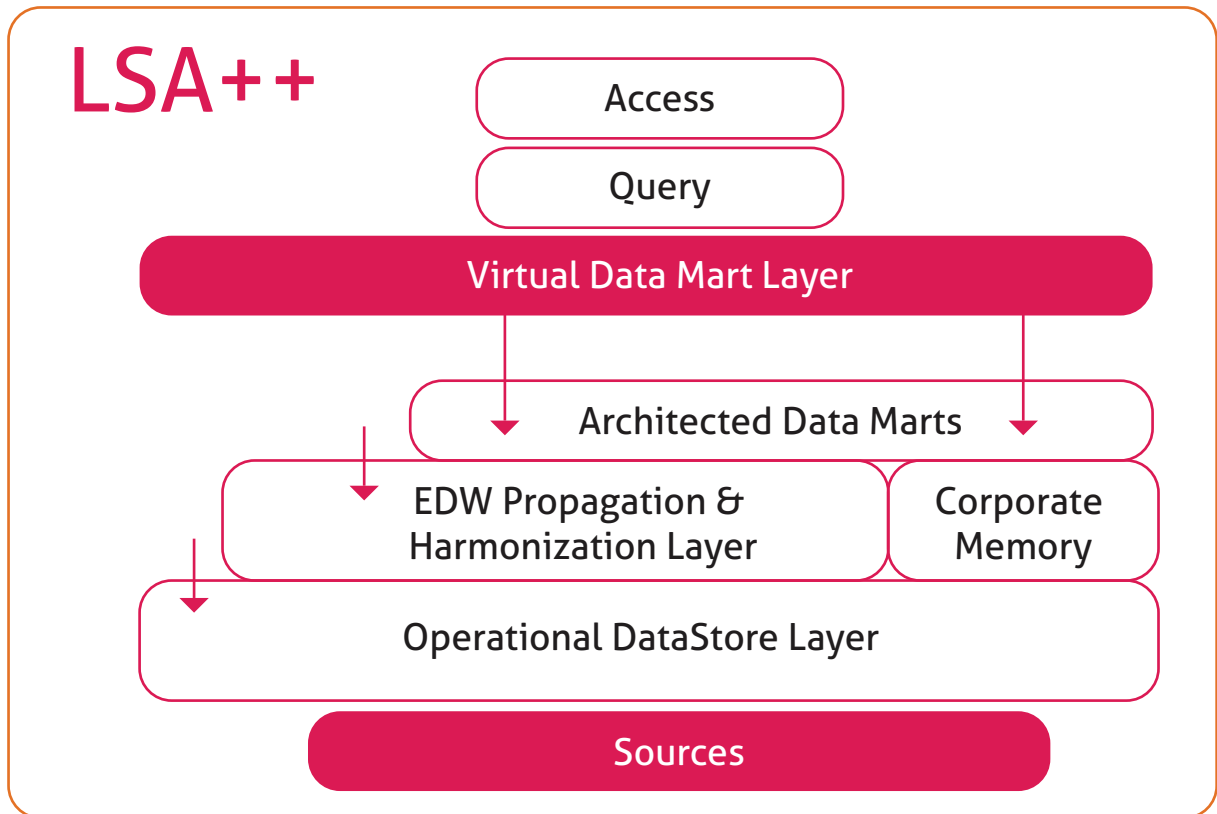
Simplification

In the previous versions of SAP BW, data modelling utilises a wide variety of artefacts depending on the complexity of the business scenario, which in turn will increase the complexity of any solution. SAP BW 7.5 on HANA provides an easy path to transform from the classic BW solution architecture to the simplified architecture of BW/4HANA comprising just four key modelling objects. Fewer objects to maintain also translates to less administration effort and greater agility in data modelling, as the objects can be flexibly used to tackle differing scenarios.



Historically, SAP has provided a standardised approach to developing a data warehouse based on solid guidelines with good governance, in the form of the layered scalable architecture (LSA). With 7.5, based on the use of BW on HANA-specific modelling objects, SAP has updated this with the LSA++ for simplified data warehousing.

Whilst still offering a standardised template-based approach to EDW design, the LSA++ has fewer layers. This is thanks to the HANA-optimized objects that offer business flexibility through the ability to perform reporting on all objects, either virtually or on persistent data, without the need to create an explicit reporting layer. This heightened modelling flexibility results in less data required to be stored and consequently less time spent loading and activating data, and ultimately faster time to insight for business users.





The power of HANA

While BW 7.5 will work on anyDB, it is on the SAP HANA database where its market differentiators truly shine. SAP HANA uses in-memory columnar storage that enables data compression of up to 5X and vastly improves query runtime.

Following a migration to SAP HANA, performance benefits for BW are immediately realised. These are most noticeable when data loading with the activation of data being processed directly in the database, without the overhead of the application server. Similarly, direct transformations will also have their processing 'pushed-down' to HANA, enabling data load times to be truly turbo-charged. Similarly, the BW features only available on HANA offer remarkable performance benefits when compared to their previous counterparts. These include ABAP Managed Data Procedures (AMDP) which enable transformation routines to be written in SQL Script and HANA Analysis Processes (HAP), the successor to APDs, both of which not only leverage HANA's performance, but also provide further integration options with access to numerous specialized libraries like PAL, AFL or R.

SAP BW is a true Enterprise Data Warehouse with the purpose of offering a single source of truth by connecting and harmonising multiple disparate data sources. This objective is further realised on the HANA platform as integration with even more source systems is offered through the native functionality of Smart Data Access and Smart Data Integration. These tools not only offer more system options, but can also enable true real-time and near-real-time reporting when business users cannot wait for that next batch window to see updates to their data.



Data modelling and reporting flexibility

A BW system operating on a HANA database provides enhanced flexibility when developing data models and exposing them for consumption.

Previously unimaginable scenarios are now not only feasible but easy with the use of Composite-Providers, the replacement for MultiProviders and InfoSets, the artefacts previously used for combining InfoProviders with unions, but with enhanced functionality to also offer join operations. On top of BW InfoProviders, they can also consume HANA views and therefore utilise data from more than just BW.

As well as accessing HANA functionality from within BW, the inverse is also possible by exposing BW objects as HANA views. This facilitates HANA data modelling techniques and operations combined with classic BW modelling through what's been dubbed Mixed Modelling. With data modelling being performed in HANA, this enables data to be consumed by SQL or other open interfaces (API, JSON etc).



Cloud Benefits

The benefits of running enterprise infrastructure in the cloud are well documented. Furthermore, most, if not all reservations that businesses have had regarding running their SAP infrastructure footprint in the cloud have been addressed in the years of partnership between SAP and the large hyper-scalers.

Arguably one of the biggest benefits is the flexibility to scale systems as required. This flexibility translates to both agility and cost reduction. In a SAP BW environment, this is particularly attractive, offering the possibility to start with a smaller footprint and scale up the infrastructure within minutes and with minimal effort. Alternatively, to scale out the environment by adding additional worker nodes, standby nodes or extension nodes with a fraction of the effort required in an on-premise environment is also possible.

The agility that the cloud offers in terms of both scaling existing infrastructure and deploying new environments (e.g. test and sandbox) is further improved by the array of automation software and scripts available. **Provisioning times for SAP systems have been compressed from weeks to just a few hours.**

High levels of redundancy, the ability to distribute infrastructure across zones and regions with SLAs up to 99.99% have resulted in better uptime and improved business continuity. For applications deployed in a single zone, a single instance SLA of up to 99.5% may still apply. High availability and disaster recovery scenarios are simpler and more cost effective in the cloud.



Cloud computing makes it far easier to drive innovation, providing access to a rapidly growing portfolio of technologies like IoT and container technologies with which to create and extend enterprise applications.

Finally, there is the lower TCO that operating SAP in a cloud environment offers. As you only pay for what you actually use, the opportunity exists to reduce costs by shutting down non-essential systems when they are not utilised, whereas environments required to run 24X7 can benefit from committed-use plans which offer substantial discounts. Systems can be scaled up as and when required, avoiding the costs involved with upfront over-provisioning of infrastructure and detailed capacity planning and thereby reducing total cost of ownership.



Benefit matrix

To assist in making the business case for your migration to BW on HANA 7.5 on the Google Cloud Platform, we've provided the below easy to follow matrix:

 Today's problems	 Tomorrow's solutions
Affected by end of SAP Support from 31.12.2020?	Maintenance extends through 31.12.2027
Experiencing slow data loads and poor query performance?	Processing "pushed-down" when on the HANA database
Care about the environmental impact of running IT systems?	100% renewable energy-achieving carbon neutrality
Is your BW DB full or nearing capacity?	Cloud hosting offers high scalability and elasticity
Struggling with high system infrastructure maintenance costs?	Competitively priced complete hosting support
Lacking time or budget for a lengthy upgrade process?	Rapid upgrade
Poor performance from data-centre or on-premise infrastructure?	Sub-millisecond, secure, Google owned network
Planned or otherwise system outages causing disruption to business continuity?	Save millions in reduced downtime



Why Google Cloud?

SAP and Google are creating solutions to help businesses thrive by combining the power of SAP applications like SAP S/4HANA and the reliability, security and cutting-edge innovation available on Google Cloud.

Google's mission is to organise the world's information and make it universally accessible and useful. Google harnesses a culture of innovation to solve the unsolvable with the broadest suite of collaboration products. There are nine Google-built solutions with decades of experience delivering useful/helpful technologies to global users at planet scale and one of these solutions is Google Cloud Platform. Google Cloud's mission is to drive digital transformation with data-powered innovation and modern computing infrastructure. Google Cloud aspires to work with customers to solve their toughest data and technology challenges.

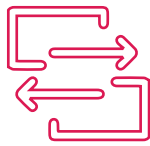
Enterprise customers are rapidly adopting Google Cloud as the platform for innovation with the security, scalability and performance that they need to run their enterprise applications like SAP. These customers are interested in combining the market leading innovation of Google Cloud with the strengths of SAP to drive better outcomes and transformation for their business. Google Cloud's ability to bring a Google approach to the SAP partnership and co-innovate to create unique solutions that accelerate customers' digital transformation journey is a key differentiator in our partnership with SAP.

Google Cloud brings best-in-class public cloud security, reliability, price performance and AI/ML capabilities to SAP landscapes. Customers can leverage these benefits from day one to drive additional value from their mission critical SAP applications:



Focus on Security

Security is Google's number one priority, and security engineers work tirelessly to protect customers' data. Google's security model is an end-to-end process designed to provide security through the entire information processing lifecycle. Google's best-in-class security infrastructure provides secure deployment of services, protected storage for business-critical assets, secure communication between services, and secure and private communication with customers over the internet. Google products regularly undergo independent verification of security, privacy, and compliance controls and have earned certifications covering the most widely recognized internationally accepted independent security standards including, but not limited to, ISO 27001/27017/27018, SOC 1/2/3, FedRAMP, and PCI DSS. Given the EU Court of Justice has recently upheld the use of EU Model Contract Clauses, it is important to note that customer use of Google Cloud Platform meets GDPR's standards for transfer of personal data outside of the EU.



Live Migration

Google Cloud uses only purpose-built infrastructure for security, scale & reliability and delivers near-zero platform downtime for hardware maintenance with Google's proprietary live migration solution. Google Cloud's Compute Engine live migrates running instances to another host in the same zone instead of requiring those VMs to be rebooted. This allows Google to perform maintenance that is integral to keeping infrastructure protected and reliable without interrupting any SAP applications running on VMs--Google will never send customers a "down for maintenance event" notification.



Global and Unique Networking

Google Cloud provides higher bandwidth network connections than any other cloud provider because Google owns one of the world's largest fiber networks (as measured by bandwidth delivered) and network points of presence (140+). Unlike other cloud providers who use the public internet to provide cloud connectivity between regions, Google Cloud Platform acts as a single, global private network. This enables faster, more reliable connectivity and simpler operations, as there is no need to deploy, maintain and traverse VPN gateways between regions or zones. Google Cloud also supports a single global, routable IP address space which can be directly connected to existing customer internal networks allowing communication between on-prem and cloud hosted RFC1918 private address spaces. The subnets within Google VPC networks can be dynamically grown without downtime, and can be shared and managed by a central team rather than independent development groups, and deliver high throughput, low latency connectivity across Google's private fiber infrastructure directly to end-user ISPs. Distinct advantages of our network for SAP workloads include subnetworks which can stretch across multiple zones in a region and VPCs which can stretch across multiple regions (even globally), thus eliminating the need for IP remapping for HA and DR systems.



100% Virtual Machines

All of Google Cloud's current SAP certified instances are based on virtual machines, allowing gradual growth based on the customer's system needs. All Google Compute Engine infrastructure, even the bigger instances (12TB), are located in Google Cloud's own data centers and are not co-located resulting in no extra latency during communication between application servers and database servers. With their latest certifications of c2, n2 and m2 machines on Intel Cascade Lake chipsets and n2d machines on AMD Rome chipsets, customers are getting more SAPS per dollar for their spend on Google Compute Engine VMs.



Certified Custom Machines

Custom machine types are a unique feature of Google Compute Engine that let customers easily create a machine type customized to their needs. With custom machine types, customers can create virtual machines with the optimal amount of CPU and memory to fit their specific workloads. This allows a greater flexibility to adapt and right-size SAP workloads so customers only pay for what they need. Custom VM types that adhere to SAP-specified vCPU to memory ratios are certified for both SAP NetWeaver and SAP HANA use cases. On average, customers who deploy custom machine types save 19% in Compute Engine costs.



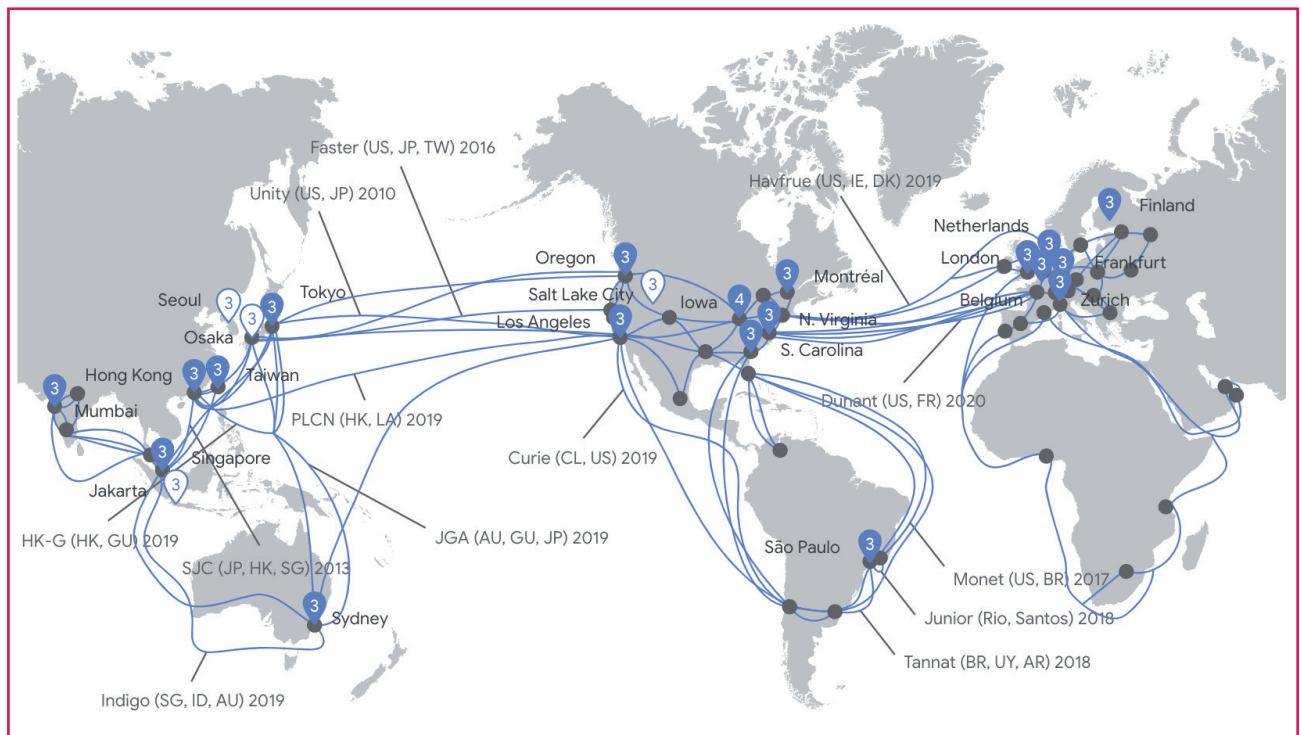
Automated Deployment

Google Cloud Platform is built for automation with Deployment Manager to enable infrastructure-as-code and autoscaling to enable elasticity, and reduce costs and errors. Customers routinely use Google Cloud provided deployment manager templates to deploy SAP HANA high availability clusters with pacemaker and HANA system replication in under 30 minutes.



Sustainability

Google has been carbon neutral since 2007 and they use ML to optimize power usage at their data centers resulting in over 50% lower data center energy consumption.

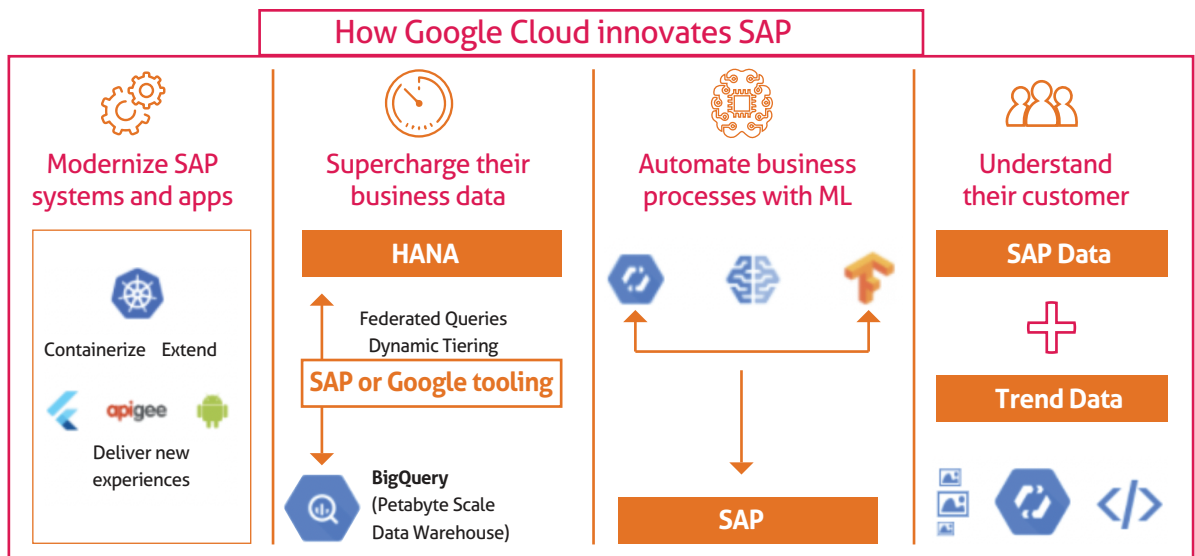




Smart Analytics

Google BigQuery is a serverless data warehouse that enables low cost, high performance analytics at petabyte scale. Google has worked with SAP to natively integrate SAP HANA with BigQuery through Smart Data Access (SDA) which allows customers to federate SAP HANA's capabilities and query data stored within BigQuery by means of virtual tables.

Enterprise customers consolidate enterprise transactional data with other data sources in BigQuery to leverage Google's smart analytics capabilities to enrich data and run advanced analytics for full insight across the business. Using the SAP HANA External Machine Learning (EML) library, customers can seamlessly integrate Google ML models in their HANA workflows. Alternatively, when data is stored in BigQuery, business users with limited ML expertise can easily leverage AutoML to develop and train high-quality models specific to their business needs, and then integrate them into their business applications to drive additional insights. Cloud AutoML relies on Google's state-of-the-art transfer learning and neural architecture search technology and it provides an open architecture for cutting edge capabilities such as voice and image recognition and natural text translation.



Lower TCO with the Cloud Acceleration Program

Google is committed to the successful migration of SAP workloads to Google Cloud and will invest in every customer's future for digital transformation. To help customers launch their SAP migration to the cloud, Google Cloud is offering the Cloud Acceleration Program (CAP) through the end of 2020.

Under CAP, Google Cloud will cover cloud migration costs for most SAP lift-and-shift scenarios based on the size of a three year infrastructure spend commitment when the migration is performed by select integration partners such as Mindtree, who provide top-tier support for SAP migrations to Google Cloud.

In addition, Google Cloud will provide up to six months of free infrastructure for the customers' SAP landscape until they are productive, so they don't have to pay double infrastructure cost from project launch to cutover.



Why Mindtree?

Mindtree has a long and award-winning history in the field of SAP BW. We have hundreds of SAP BI and BW consultants based all over the world, who are highly experienced in BW generally and the basis, technical and functional elements of BW upgrades specifically.

We pride ourselves on having just the right mix of theoretical knowledge (often gleaned from or enhanced by our close partnership with SAP) and hands-on experience from delivering sophisticated solutions at a wide array of clients.

Our upgrade experience extends across all aspects of the related lifecycle, from scoping through installation to all stages of testing and best practice exploitation of the new functionality. It's thanks to this end-to-end exposure that we lay claim to having one of the most mature, evolved approaches, using accelerators including our proprietary Runbook methodology to enable faster 'time to live'.

Why both?

By choosing Mindtree to move classic BW systems to SAP BW 7.5 on HANA hosted by Google Cloud, customers will enjoy the win-win of avoiding the BW maintenance end-of-life and moving to an industry leading cloud platform with the lowest TCO option available in the marketplace.

About Mindtree

Mindtree [NSE: MINDTREE] is a global technology consulting and services company, helping enterprises marry scale with agility to achieve competitive advantage. "Born digital," in 1999 and now a Larsen & Toubro Group Company, Mindtree applies its deep domain knowledge to 290+ enterprise client engagements to break down silos, make sense of digital complexity, and bring new initiatives to market faster. We enable IT to move at the speed of business, leveraging emerging technologies and the efficiencies of continuous delivery to spur business innovation. Operating in more than 15 countries across the world, we're consistently regarded as one of the best places to work, embodied every day by our winning culture made up of over 21,000 entrepreneurial, collaborative and dedicated "Mindtree Minds".