

How to Bring SAP® to Google Cloud with Minimal Operating Cost and Maximum Performance



The SAP suite of products, including its flagship resource planning (ERP) solution, is a powerful foundation for any enterprise technology stack. Running SAP systems in the Google Cloud alongside other enterprise workloads makes them even more powerful. However, with SAP's power comes dizzying complexity, making migrating to the cloud feel like a daunting prospect. Unexpected challenges can quickly arise before, during, and after migrating mission-critical SAP systems to the cloud. That is why choosing the right partner is critical for guaranteeing success.

One of those challenges is optimizing performance and cost. Managecore partners with Google Cloud and AMD to not only make SAP migrations smooth and worry-free, but also to take full advantage of the security, performance, and cost benefits of AMD CPUs for SAP and other enterprise workloads. In this guide, we'll begin with an overview of the shared Managecore/AMD/Google Cloud solution for SAP and other enterprise applications. Then, we'll take a look at the step-by-step process of setting up SAP enterprise applications on Google Cloud powered by AMD. And finally, we'll illustrate three examples of use cases that manufacturers can adopt to take advantage of these solutions: yield optimization, predictive asset maintenance, and real-time quality inspection.

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How Managecore, AMD, and Google Cloud work together to optimize SAP and other enterprise applications

Managecore

Managecore combines innovative technology with years of ERP and industry experience to deliver a complete solution for enterprise customers. Managecore's focus is optimally maintaining your most business-critical application, SAP. They create a relationship with customers that is built on trust and delivers services with full transparency.


Each of Managecore's consultants is dedicated to the customer's SAP investment and advancing their business by leveraging the continuous innovations that SAP and cloud technology has to offer.

MANAGECORE BY THE NUMBERS

 **100%**
customer satisfaction

 **15+ years**
of SAP experience per consultant

 **24x7x365**
global support


SPECIALIZATION
Partner of the Year
SAP on Google Cloud
2021

Google Cloud
Partner of the Year
for SAP Specialization

SAP migration: ManagecoremG safely migrates enterprise customers to the cloud via a proven, fully-managed, zero-risk process implemented by a knowledgeable and certified team of Managecore's SAP and cloud infrastructure experts. The ManagecoremG project plan, built with Managecore IP, is tracked down to the minute, in full compliance, and is audit-ready. Migrating your SAP workloads to the cloud with ManagecoremG comes with guaranteed success. That's made possible by Managecore's extensive SAP and cloud experience, along with an automation toolset built on SAP best practices and deployed by senior consultants.

SAP cloud hosting and technical managed services: ManagecoreGo is intelligent cloud hosting services for your SAP and IT systems including infrastructure support and ongoing monitoring. The public cloud, similar to on-premise infrastructure, requires day-to-day support and ongoing management just like any other hardware environment. For maximum impact, ManagecoreGo can be paired with:

-  **ManagecoreiQ** – intelligent, proactive SAP managed services support that offers SAP Basis and database management, as well as direct access to dedicated teams of senior resources.
-  **ManagecoreIT**, which provides expert support to your full IT landscape beyond your SAP workloads with full security, networking, data, and infrastructure management.
-  **Watchdog**, a component of ManagecoreiQ, which proactively monitors your entire IT landscape and automates SAP Basis tasks.



AMD

AMD is helping Google Cloud customers to make digital innovation possible with breakthrough cloud, hybrid cloud, and multi-cloud capabilities. Google Cloud virtual machines (VMs) powered by 3rd Gen AMD EPYC™ processors deliver leading price-performance solutions for general-purpose (N2D), compute-optimized (C2D), and scale-out (T2D) workloads.

- The power to choose:** It may come as a surprise that you have a choice when selecting the type of CPU powering the optimal VM to run your cloud workload. But in fact, that choice can have a measurable effect on performance and cost. You can gain immediate cost efficiencies by choosing a VM with a CPU that gives you a better price-performance ratio than alternatives.
- Lowest total cost of ownership (TCO):** For example, N2D VMs powered by 3rd generation AMD EPYC™ processors offer 13% lower cost than comparable N-series VMs.¹ In addition, running your workload on a more performant CPU can reduce run time, thus saving you ongoing compute costs.
- Certified for SAP applications:** Google Cloud N2D, C2D, and T2D machine types powered by AMD EPYC™ processors are [certified to run SAP solutions](#) (except for SAP HANA Cloud Database).

- Confidential compute:** In partnership with AMD, Google Cloud was the first cloud provider to offer confidential compute capability. The N2D and C2D machine series offer confidential compute capability, which protects not just the data at rest or the data in transit, but also the data in use. You get security without compromising the ease of use or the performance – simply by checking a box to deploy.

Google Cloud

SAP on Google Cloud frees businesses to work smarter, move faster, and do more with less compared to legacy systems. Recent reports by Forrester² and IDC³ based on customer interviews also found that availability dramatically improves as does staff productivity, all while driving an impressive return on investment.

- Data encryption by default** protects data both at rest and in transit for increased security and performance.
- The BigQuery Connector for SAP** gives customers a solution: a fast, simple, cost-effective and massively scalable way to make SAP data fully accessible within BigQuery.
- AI, ML, and advanced analytics** help you maximize the insights you derive from your SAP data.
- Google data sources and API management** allow you to extend SAP with a richer dataset and more control.



SAP on Google Cloud frees businesses to work smarter, move faster, and do more.



2 Migrating and setting up SAP and other enterprise applications on Google Cloud powered by AMD EPYC™ processors

Migrating to the cloud is a critical first step in digital transformation that improves performance and cost-effectiveness when done well. In fact, the ideal cloud migration is one that users don't even notice occurred – except for performance improvements and a more efficient cloud spend. A poor migration, however, can easily go over budget, lead to user dissatisfaction, or compromise the integrity of your company's most important asset: data. That's why it's vital to have a skilled partner from start to finish.

At Managecore, cloud migrations are performed by senior-level consultants who are cross-trained in Google Cloud and SAP technologies and who have at least fifteen years of experience. The migration takes place over a disciplined, **four-stage process**:



1 Planning

As part of the initial project kickoff, Managecore's designated technical project manager will detail out the parts of the project plan pertaining to the Google infrastructure buildout and the necessary activities for the migration project. Managecore will also begin to review all servers and applications to determine the target architecture and migration method to Google Cloud.

2 Cloud foundation and initial migration

The actual migration then begins with building out the Google Cloud infrastructure needed to support the new environment. During this stage, Managecore is not only streamlining the migration process, but also starting to optimize system performance and measuring with ongoing user testing. Tech leads ensure that the migration operates correctly and provide access so that the client can test and validate the installation.

At this point, Managecore technicians systematically move the SAP systems into a staging environment, regularly checking that each system is properly sized to optimize cost, and confirm that each has the right level of compute horsepower. They also evaluate the options around scaling out across multiple application servers, as well as tuning servers and SAP databases to optimize performance.

3 Deployment and migration

Production deployment involves shutdown of the system on the source site, transferring data to the cloud, then turning it on and releasing the system. Central to Managecore's process is leveraging proprietary automation and runbooks to bulletproof the procedure with full documentation of commands; database and application operations; and scripts to ensure success.

Managecore technicians leverage automation tools such as Watchdog, Terraform, and Ansible in Google Cloud, combining standard migration processes from SAP's best practice methodologies with proprietary automation toolsets and skilled resources. When the systems are switched back on, the only differences users should notice are faster performance and improved redundancy and resiliency. To date, Managecore has a 100% success rate: all migrations have been on time, on budget, and resulted in 100% customer satisfaction.⁴

4 Post-deployment

After the go-live comes a period of "hypercare" to fine-tune and provide further optimization over the course of several weeks or even a month. For example, leveraging Google's sustained-use discount during migration and right-sizing, then switching to the committed-use discount, thus optimizing pricing overall once the migration project is complete. In addition, Managecore deploys Watchdog to continue analyzing performance and fine-tuning as necessary.

During this period Managecore technicians may also develop secure deployments and infrastructure using Google's native technologies such as Shielded VM's and Secure Boot, hardening the OS images, and performing SAP security tuning in addition to employing Confidential VMs powered by AMD EPYC™ processors.



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3 Three real-world manufacturing use cases

Cloud capability is important for all industries, and manufacturers are no exception. They strive to lower IT operational costs, accomplish sustainability goals, and enable new digital transformation to stay competitive. Google Cloud, Managecore, and AMD can combine forces to help deliver all of those objectives.

In fact, hosting SAP on Google Cloud can reduce IT infrastructure costs by over 30%, while also improving the efficiency of IT teams by 56%.⁵ Here are three use cases that can be powered by the Managecore, AMD, and Google Cloud partnership to drive significant value for manufacturing companies using best-of-breed cloud capabilities:



As an SAP customer we are pleased with with our decision to leverage AMD technology powered by Google Cloud supported by Managecore for our IT infrastructure, and would highly recommend this solution to other enterprise customers.

- Enterprise SAP customer

1 Yield optimization

Yield loss is one of the biggest costs in manufacturing processes – and often top of mind for companies as they try to utilize digital technologies to impact their bottom line. Effective yield optimization starts with a comprehensive view of the material inputs, the conversion process, machine performance, and worker capabilities. Manufacturers can capture process characteristics, monitor changes in the production output, and quantify the waste generated during the process. By organizing and analyzing these inputs and outputs, manufacturers can optimize the process to maximize overall efficiency.

YIELD OPTIMIZATION RESULTS⁶

✓ Up to 30%
increase in production throughput by optimizing processing

✓ Up to 10%
reduction in raw ingredient costs by reducing overconsumption.

② Predictive asset maintenance

Compared to traditional time-based maintenance practices, performing maintenance only when required limits machine downtime and encourages effective use of labor. This approach allows supervisors to schedule maintenance as needed, based on the true condition of machines, and to effectively coordinate production around planned machine downtime. Here's how it works: data from manufacturing execution systems (MES), ERP systems, maintenance systems, operational historians, and sensors are used to train ML models and drive analytics. In turn, real-time analytics and alerting capabilities inform plant workers of machine status.

PREDICTIVE ASSET MAINTENANCE RESULTS⁷

✓ 10-20%
increase in overall equipment effectiveness

✓ 5-10%
reduction in maintenance costs (labor, spare parts)

✓ Up to 20%
reduction in waste due to start up and stopping

③ Real-time quality inspection

Quality is a crucial area of focus for manufacturers, and real-time quality monitoring can help in understanding the root cause of an issue. The process involves implementing edge devices such as sensors and cameras to run automated inspections and collect product quality data. Manufacturers can then leverage this data to uncover trends in quality issues and perform quality assurance process optimization. Over time, this data can be used to build algorithms to perform real-time root cause analysis followed by automatic action to resolve issues proactively.

REAL-TIME QUALITY INSPECTION RESULTS⁸

✓ 20-30%
reduction in rework and scrap material waste

✓ 14-18%
increase in first-pass yield

✓ 14-24%
improved overall customer satisfaction



Harness the combined power of Managecore, AMD, and Google Cloud



Migrating your mission-critical workloads such as SAP to Google Cloud is the first step toward digital transformation that will give your organization greater agility, flexibility, and efficiency.

In order to reduce risk, leverage the experience of a trusted partner such as Managecore to facilitate not only the migration, but the ongoing management of your SAP and other enterprise workloads on Google Cloud. Powerful and cost-effective, AMD EPYC™ processors are the foundation for cloud cost optimization, and combined with the leading-edge technology and expertise offered by Managecore, they enable significantly greater savings and performance.

Together, Managecore, AMD, and Google Cloud can transform your SAP systems into an even more powerful driver of growth and profitability for your organization.

To learn more about the partnership between Managecore, AMD, and Google Cloud, [contact us now](#).

Sources:

¹ [Announcing the N2D VM family based on AMD | Google Cloud Blog](#)

² [Forrester: The Total Economic Impact of SAP on Google Cloud](#)

³ [IDC: Business Value of Google Cloud for SAP Environments](#)

⁴ [SAP to Cloud Migrations - Managecore](#)

⁵ "Business Value of Google Cloud for SAP Environments." IDC. Della Rosa, Frank; Marden, -Matthew; Mohan, Deepak. July 2020

⁶ [sap-google-cloud-for-manufacturing.pdf \(inthecloud.withgoogle.com\)](#)

⁷ [sap-google-cloud-for-manufacturing.pdf \(inthecloud.withgoogle.com\)](#)

⁸ [sap-google-cloud-for-manufacturing.pdf \(inthecloud.withgoogle.com\)](#)