



SAP ASE 16 Cloud Strategy and Offerings Available Today

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Agenda

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SAP ASE potential cloud services for on-premise

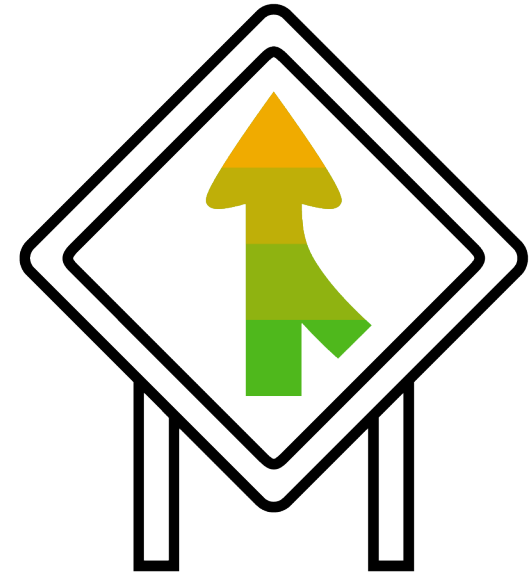
Conclusion

SAP ASE cloud strategy



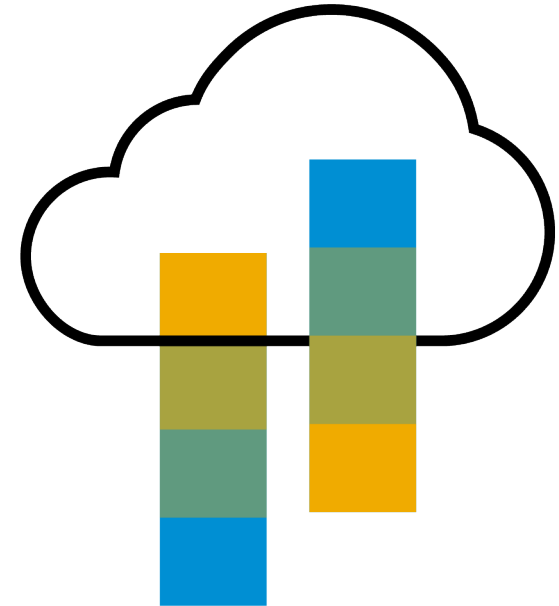
SAP ASE Cloud Strategy

- **Empower new developers on SAP ASE in the Cloud**
 - Rapidly build and run new cloud apps to solve new problems, engage new customers, and drive new revenue
- **Use Cloud Services to enhance and extend SAP ASE on-premise installations**
 - Quickly add new features to your existing cloud and on-prem apps to optimize your existing investments by adding services that are available in the cloud
- **Integrate Apps and Data**
 - Connect your cloud and on-prem apps to eliminate data silos and make digital access simple, secure, and scalable



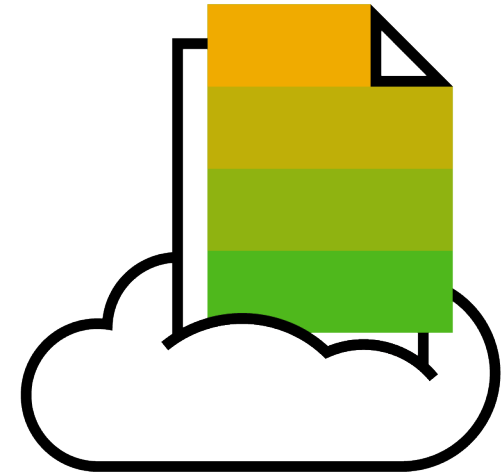
Value of SAP ASE in Cloud

- **Lower Cost of Ownership**
 - Only pay for what you're using
 - No dedicated hardware sitting idle and taking space
- **Lower barrier to entry for enterprise level services**
 - Lower startup and maintenance costs
 - Less expert staff needed
 - Gives smaller organizations all of the capabilities of large enterprises
- **Faster time to deployment**
 - Setup in hours and days instead of weeks and months
 - Dynamically expand / contract resources



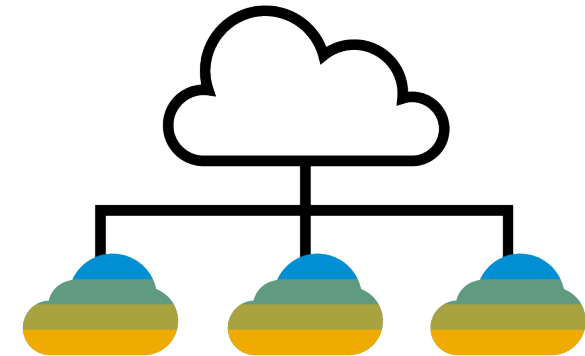
Deployment options for applications with databases

- **Any combination of the following could be used:**
 - Databases run on **on-premise**, non-virtualized physical machines
 - Traditional legacy environment
 - Customer owns and fully manages
 - Databases run on on-premise, virtual machines (**private cloud**)
 - Data and compute are virtualized and behind customer firewall
 - Better utilization of hardware, fast time-to-value
 - Some databases run on on-premise, other databases run in public cloud (**hybrid cloud**)
 - On-premise environment is extended through a secure connection to public cloud provider
 - Example: on-premise applications connected to cloud applications running in a VPC (Virtual Private Cloud) on Amazon



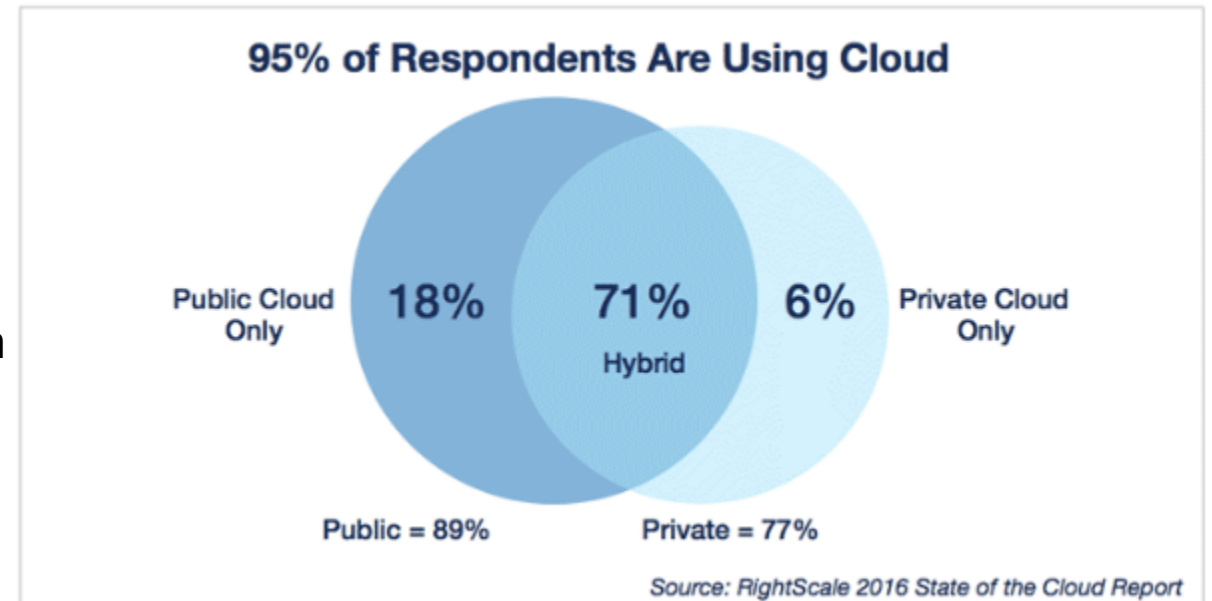
Deployment options for applications with databases

- **Any combination of the following could be used:**
- Databases in cloud-provider virtual machines (**IaaS**) (**Infrastructure as a Service**) (**public cloud**)
 - Dynamically expand / contract resources
 - Customer usually manages the dataserver
 - Cloud provider manages the hardware and operating system level
 - Example: Applications running on Amazon EC2 instance
- Databases fully managed in cloud as a service (**DBaaS**) (**Database as a Service**) (**public cloud**)
 - Lower costs, no remote data center to maintain
 - Cloud provider fully manages database; customer manages application
 - Example: SAP ASE running on SAP Cloud Platform
- Application fully managed in cloud as a service (**SaaS**) (**Software as a Service**) (**public cloud**)
 - Lower costs, no remote data center to maintain
 - Cloud provider fully manages everything
 - Example: SAP S/4 HANA running on SAP Managed Services Cloud



Cloud Adoption Trends

- **Private Cloud adoption increased from 63% to 77%**
 - Customer owns and fully manages
- **Hybrid Cloud adoption increased from 58% to 71% y-o-y**
 - 17% of enterprises have more than 1,000 VMs in public cloud
 - Security concerns about cloud are dropping
 - Resources and Expertise for cloud is the top concern
- **DevOps adoption rose from 66% to 74%**
 - Docker adoption rose to 27% v. 13% y-o-y
- **AWS is used by 57% and Azure 17%**
 - Lower costs, no remote data center to maintain
 - Higher reliability and availability
 - Cloud provider fully manages



SAP ASE cloud footprints



SAP ASE on the cloud today

Vendor	Product Edition	Key Capabilities
Amazon	Enterprise Edition on Linux and Windows	<ul style="list-style-type: none">• IaaS with BYOL (Bring Your Own License)• Customers can run options
Amazon	Runtime Edition (for SAP Business Suite) on all platforms	<ul style="list-style-type: none">• IaaS with BYOL (Bring Your Own License)• Runtime Edition included options
Docker	Developer, Express and Enterprise Edition	<ul style="list-style-type: none">• Certification
SAP Managed Services Cloud	Enterprise Edition	<ul style="list-style-type: none">• SAP Apps on SAP ASE hosted services• Fully managed environment
SAP Cloud Platform	Adaptive Server Platform Edition (ASP)	<ul style="list-style-type: none">• Subscription• Fully managed DBaaS

SAP ASE on Amazon Marketplace (IaaS)

- SAP ASE 16.0 SP02 PL01 is available on images in 19 T-Shirt Sizes
 - Utilizes Amazon EC2 and EBS services
 - Uses BYOL (Bring Your Own License) model from SAP
 - Buy perpetual license for software from SAP
 - Windows and Linux images available
- Amazon Pricing
 - Pricing is for Amazon services only
 - Depends on AWS region, subscription term and actual usage
- Maintenance and Support
 - Customer is responsible for database administration
 - SAP ASE support is through SAP support contract

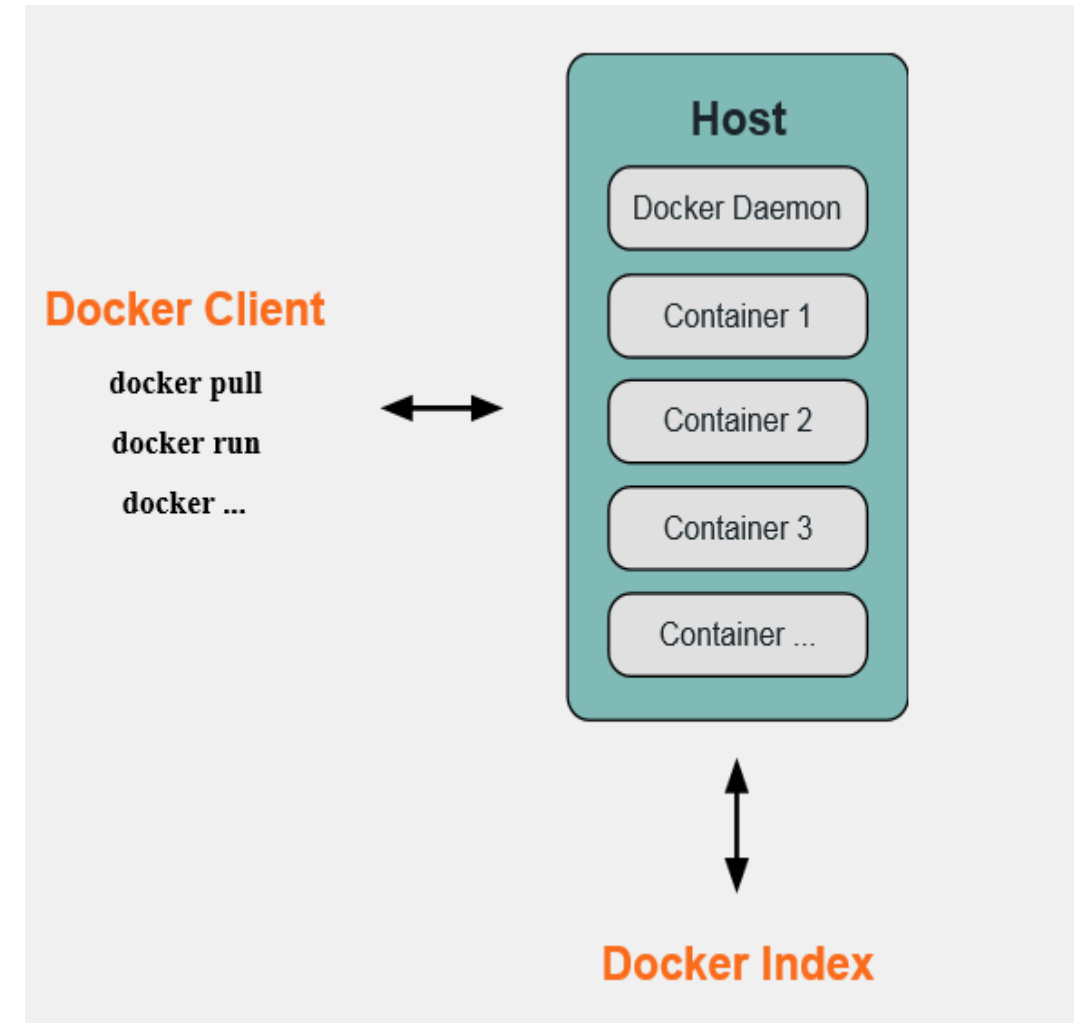


SAP ASE docker certification



What is Docker?

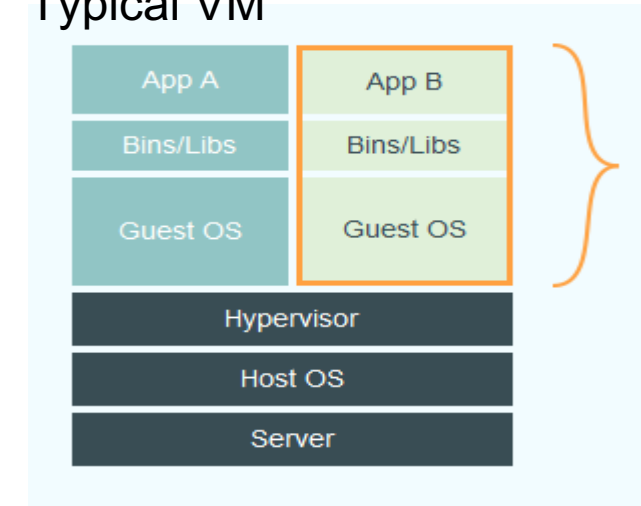
- Docker is an open platform for developers and sysadmins to build, ship and run applications. Docker consists of -
 - Docker Engine: A portable, lightweight container virtualization technology combined with a work flow for building and containerizing the application.
 - Docker Hub: A SaaS service for sharing and managing application stacks.
- Architecture of Docker
 - Components
 - Docker Daemon
 - Docker Client
 - Docker.io registry



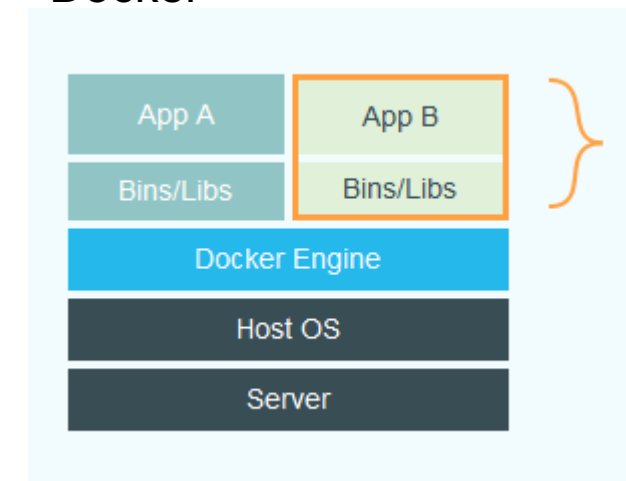
Benefits of Docker

- Fast delivery of applications
 - Standard container format to minimize the provisioning overhead
 - Easy to build new containers
 - Enable rapid iteration of the applications and increase the visibility of changes
 - Containers are lightweight and fast
- Deploy and scale more easily
 - Containers run (almost) everywhere – desktops, physical servers, vms and private and public clouds.
 - Easy to move the applications around

Typical VM

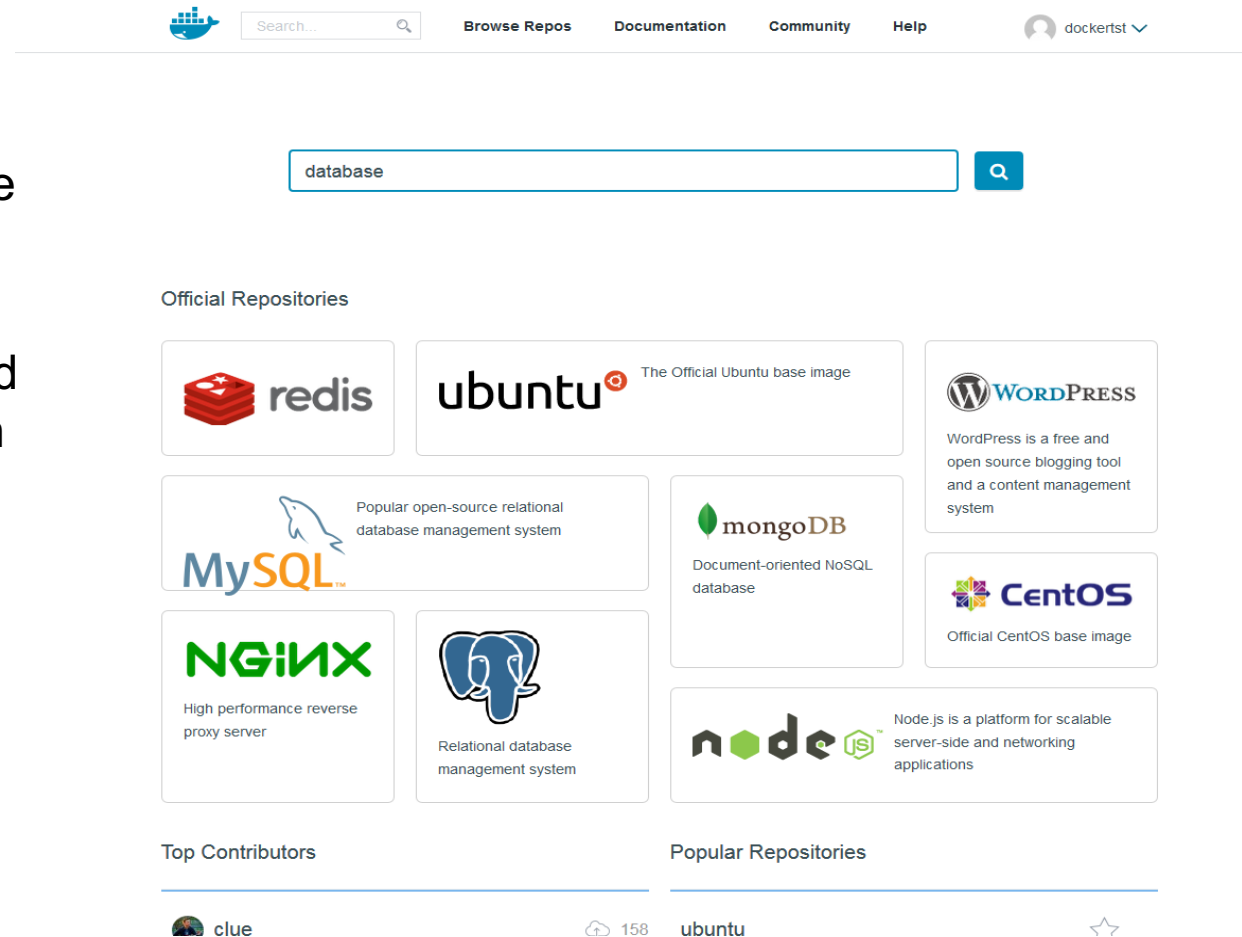


Docker



Benefits of SAP ASE on Docker

- For Developers
 - “Dockerized” apps are portable and can run anywhere
 - Developers can get going by starting with one of the apps available on Docker Hub.
 - With Docker Hub, developers can automate their build pipeline and share artifacts with collaborators through public or private repositories.
- For SysAdmins
 - Standardized environments for development, QA and production.
 - Flexibility in where the workloads run – bare metal, data center, VMs or public clouds.



SAP ASE on SAP Cloud Platform DBaaS



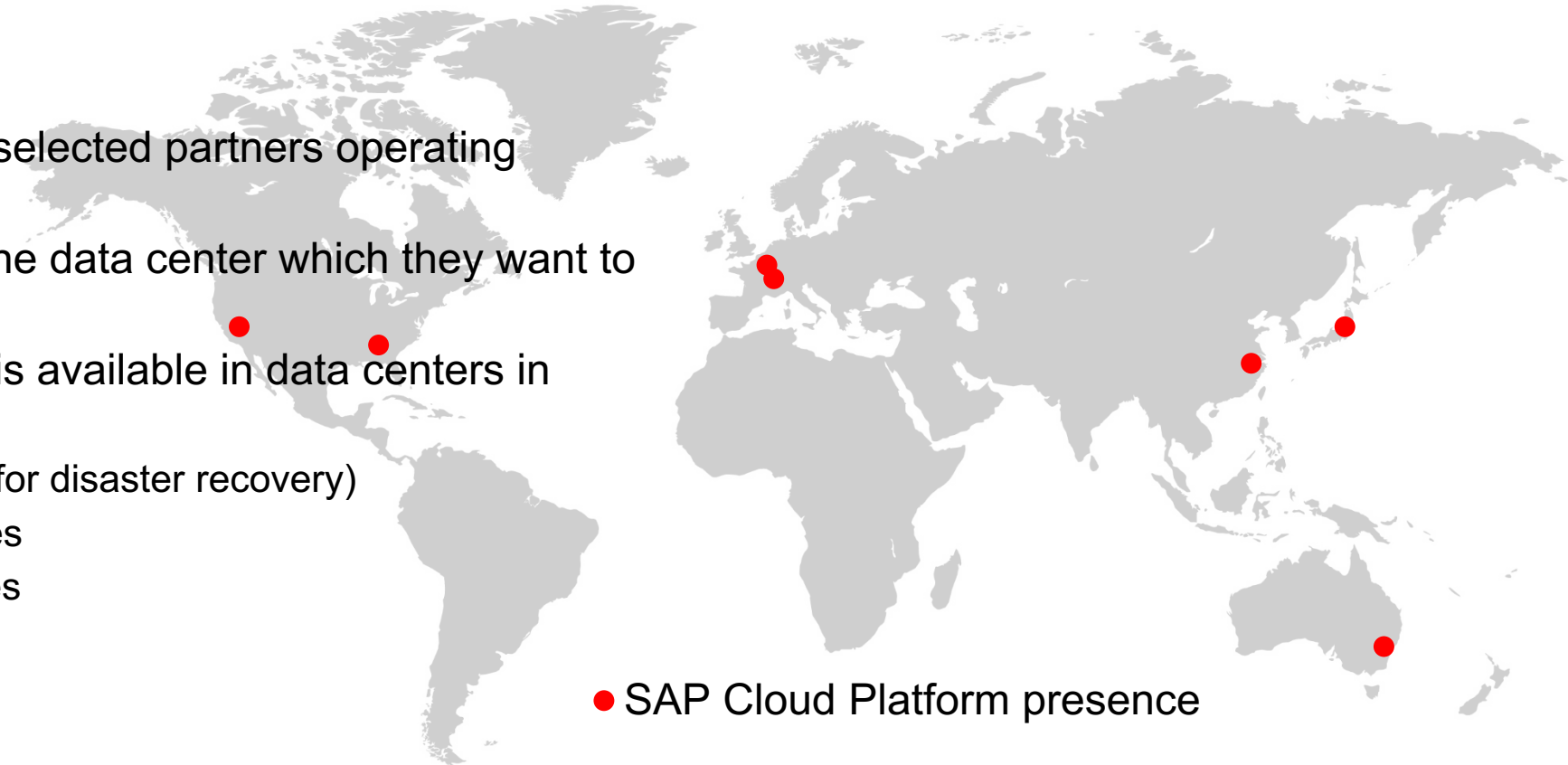
Infrastructure

SAP Cloud Platform, Data Centers

SAP Cloud Platform runs in SAP's data centers around the globe. It offers SAP tier-3 and 4 data centers with 24/7 global support and 99.9% availability.

Data centers

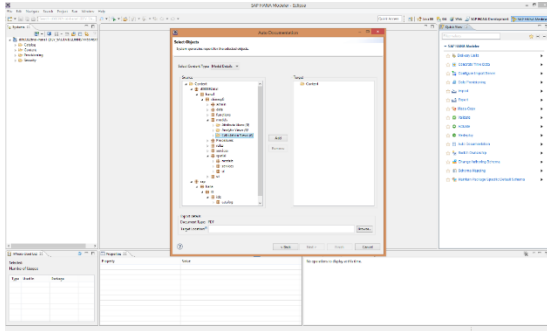
- SAP managed data centers & selected partners operating according to SAP standards
- Customers / partners choose the data center which they want to use
- Currently SAP Cloud Platform is available in data centers in
 - St. Leon-Rot, Germany
 - Amsterdam, Netherlands (only for disaster recovery)
 - Ashburn (Virginia), United States
 - Phoenix (Arizona), United States
 - Sydney, Australia
 - Tokyo, Japan
 - Shanghai China



For more details, see www.sapdatacenter.com

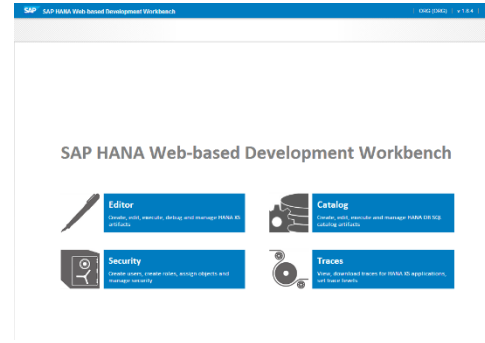
SAP ASE on SAP Cloud Platform - Persistence as a Service

Developer Focused



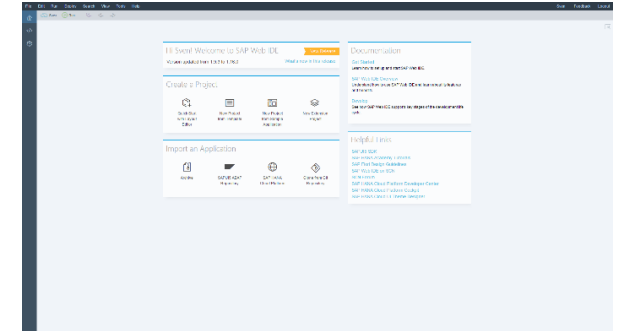
Eclipse

- Use of the popular open-source Eclipse IDE on the local computer
- Full fledged Integrated Development Environment with the ability to add your favorite plugins and profit from the huge ecosystem



SAP HANA Web-based Development Workbench

- Browser-based IDE for lightweight creation and editing of development objects and debugging for SAP HANA
- Four sub-tools: Editor, Catalog, Security, Traces



SAP Web IDE

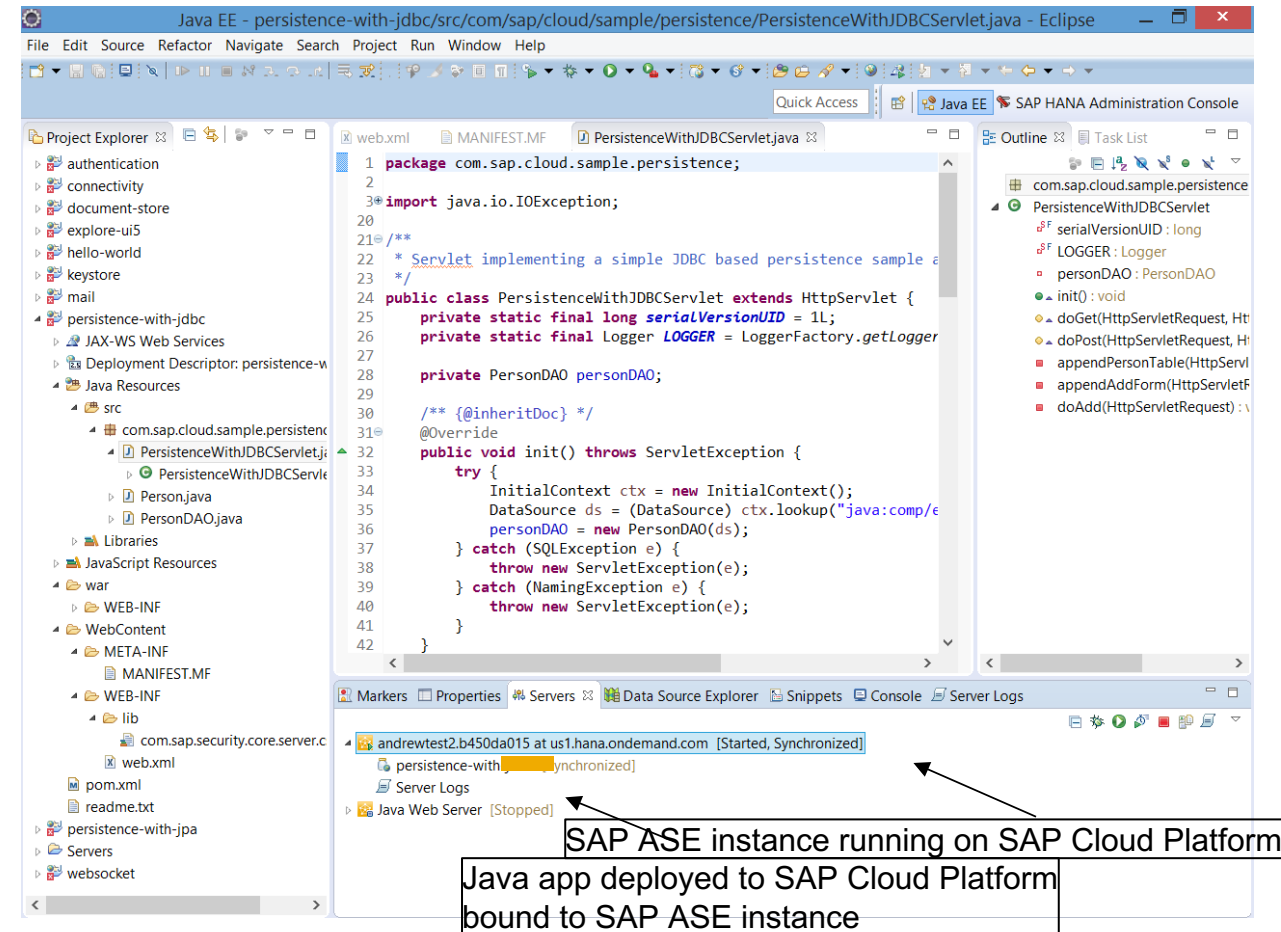
- Enable developers to build new business applications in the cloud with zero footprint
- Simplify SAP Fiori and SAP UI5 development and support end-to-end application lifecycle with one tool

Complement each other

SAP ASE on SAP Cloud Platform - Persistence as a Service

■ Quick Deployment

- Quick set up and no maintenance worries with full cloud management
- SAP Cloud Platform manages data replication, backup and recovery, monitoring and alerting, balancing and scaling, configuration
- Provides high availability and disaster recovery for continuous operations
- Supported sizes (HDD): 32 GB, 80 GB, 160 GB, 320 GB, 640 GB



Eclipse IDE with SAP Cloud Platform plug-ins and SDKs

SAP Cloud Platform Resources

[SAP Community Network](http://scn.sap.com/welcome) (<http://scn.sap.com/welcome>)

[SAP.com](http://www.sap.com/) (<http://www.sap.com/>)

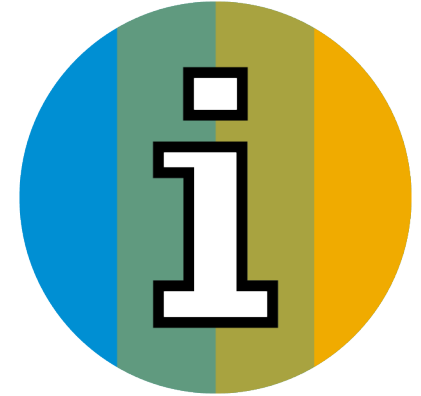
[SAP Cloud Platform persistence service \(SAP ASE\)](https://cloudplatform.sap.com/capabilities/data-storage/ase-dbaas.html)
(<https://cloudplatform.sap.com/capabilities/data-storage/ase-dbaas.html>)

[Introduction to SAP Cloud Platform online course](https://scn.sap.com/community/developer-center/cloud-platform)
(<https://scn.sap.com/community/developer-center/cloud-platform>)

[SAP Cloud Platform Developer Center](https://scn.sap.com/community/developer-center/cloud-platform) (<https://scn.sap.com/community/developer-center/cloud-platform>)

[SAP Cloud Platform Documentation](https://help.us1.hana.ondemand.com/) (<https://help.us1.hana.ondemand.com/>)

[SAP Adaptive Server Enterprise Documentation](https://help.sap.com/viewer/p/SAP_ASE/) (https://help.sap.com/viewer/p/SAP_ASE/)

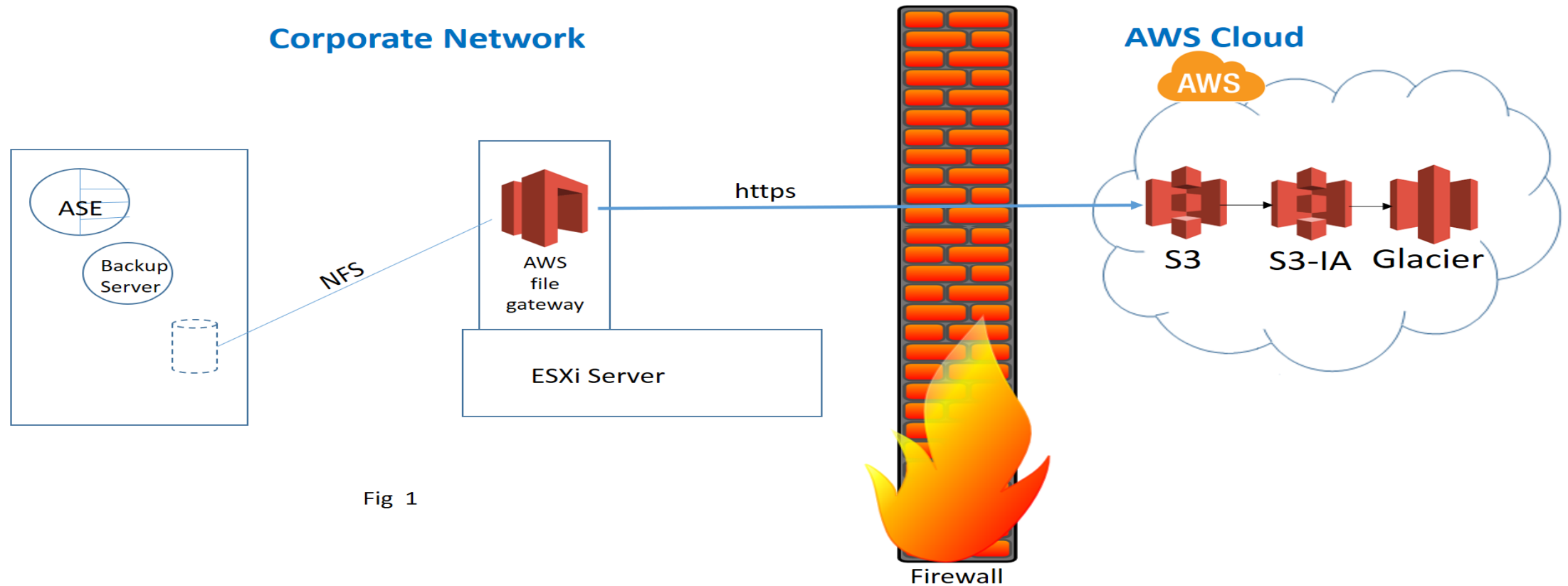


SAP ASE backup to AWS S3 with file gateway



SAP ASE Cloud Backup using AWS file gateway architecture

ASE Cloud Backup



SAP ASE Cloud Backup through AWS File Gateway to S3

■ Advantages

- Gives elastic and geographically remote storage
- Removes storage purchase and management
- Only pay for what you use
- Data is secure and encrypted at rest and in transit
- Meets compliance retention requirements
- No changes required to existing backup scripts or schedules except for backup location

■ How it works

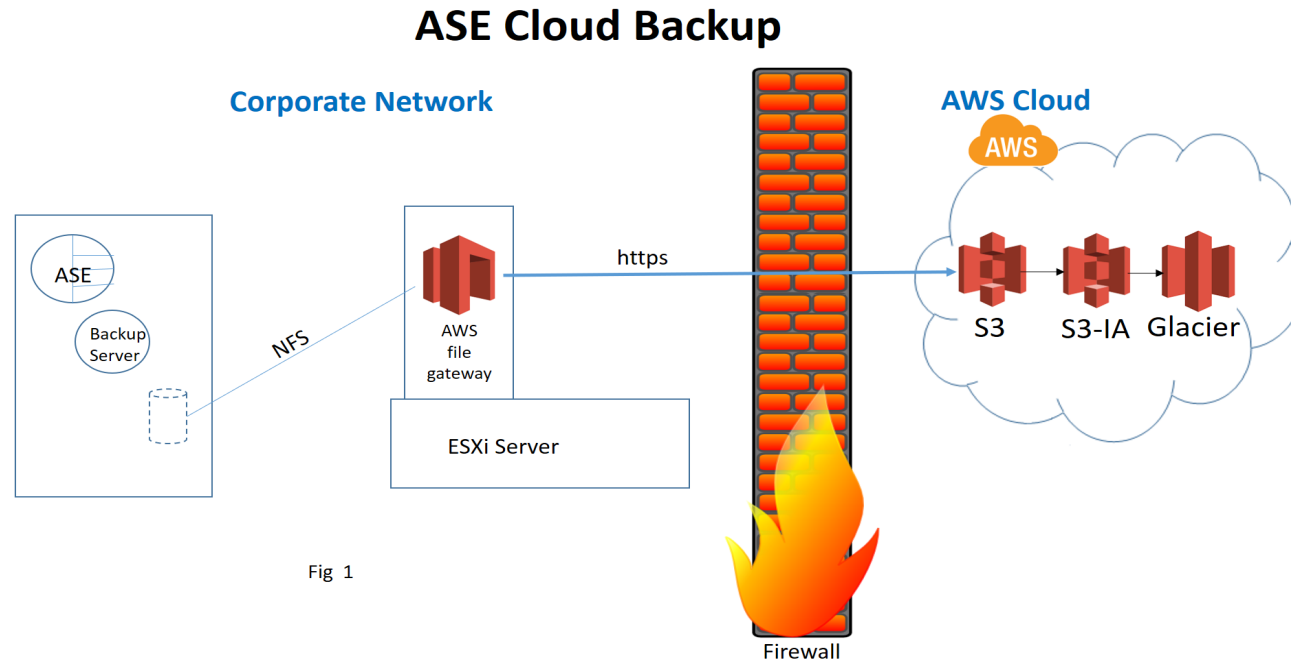
- AWS File Gateway is installed on premise
- AWS S3 storage is mounted on premise as an NFS file system directory managed by Gateway
- SAP ASE saves backup files to NFS file system directory
- AWS Storage Gateway manages data transfers and retrievals between on premise and AWS S3



SAP ASE and AWS File Gateway Whitepaper for Cloud Backup

■ White Paper

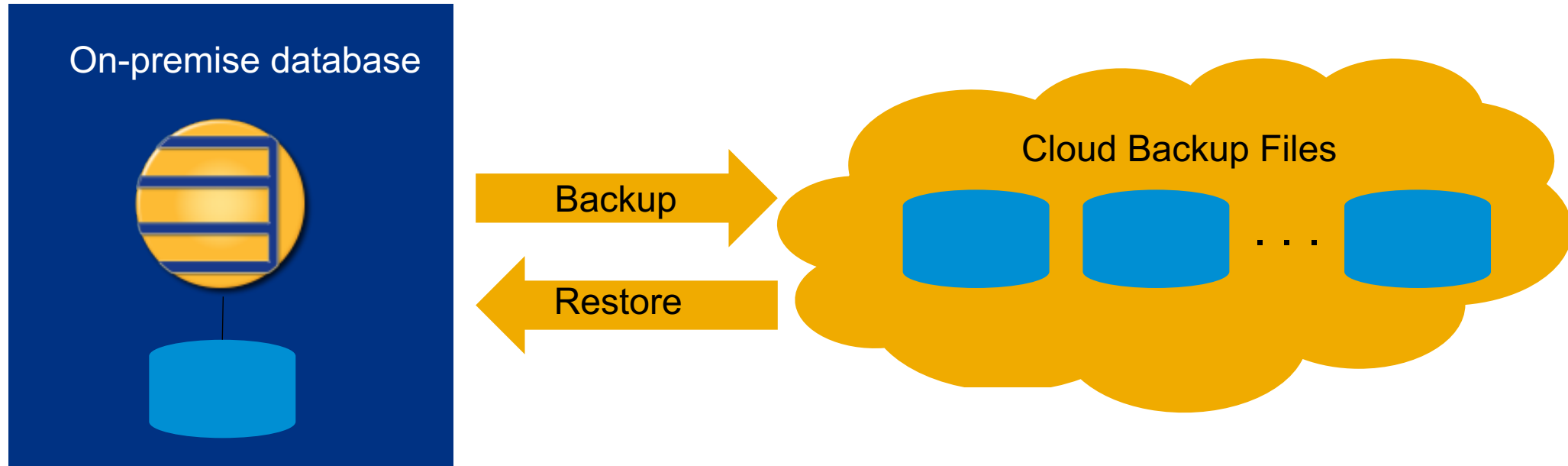
- Joint paper with AWS hosted on AWS site (Use your favorite search engine to find it)
- Details on using SAP ASE with the AWS File Gateway to save backup files to AWS S3 storage without changes to existing procedures
- Scheduled to be published in September 2017



SAP ASE potential cloud services for on-premise

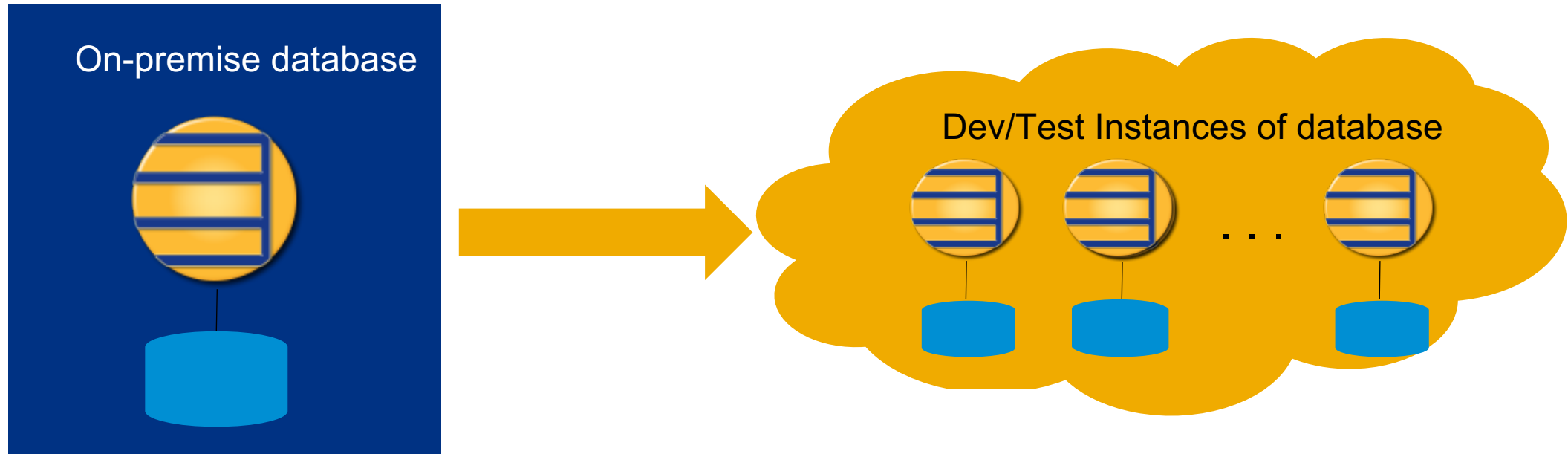


On-Premise Database Backup and Restore to the Cloud



- Manage database backups in the cloud
 - Allows database to push and retrieve backup files from the cloud
 - Gives elastic and geographically remote storage
 - Removes storage purchase and management
 - Only pay for what you use
 - Data is secure and encrypted at rest and in transit
 - Meets compliance retention requirements

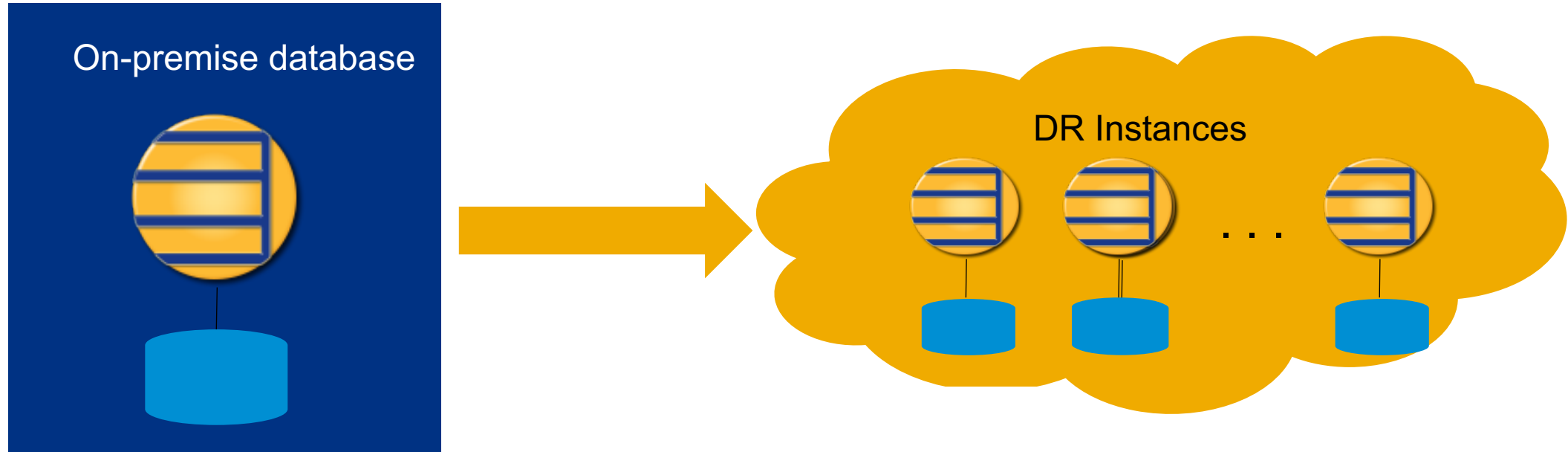
On-Premise Database Copy to the Cloud for Dev and Test Environments



■ Features:

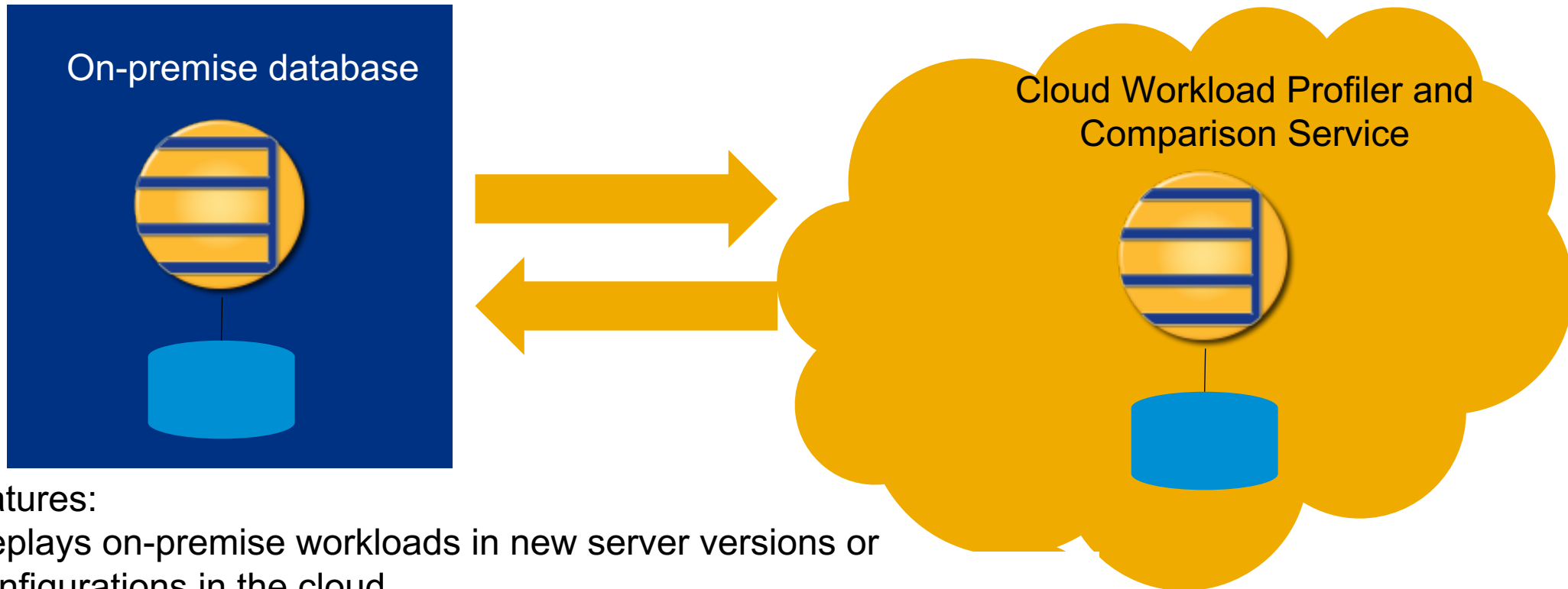
- Creates and instantiates an instance in the cloud
- On-premise tool to choose databases and tables to securely move to cloud instance (materialization)
- Provides a mechanism to refresh/sync data on demand
- Allows data masking and subsetting
- Ensures security and encryption of data at rest and in transit

On-Premise Database Copy to the Cloud for Disaster Recovery Site



- Create duplicate instances from an on-premise database to a remote disaster recovery site
 - Significantly reduces cost of DR site
 - Provides a geographically separate instance for safety and compliance reasons
 - Gives elastic compute power and storage
 - Removes equipment purchase and approvals
 - Only pay for what you use and for as long as you use it
 - Data is secure and encrypted at rest and in transit

Cloud Service for Workload Profiler and Comparison of an On-Premise Database



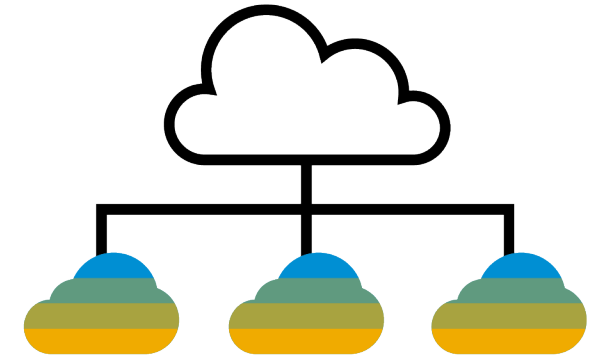
- Features:
 - Replays on-premise workloads in new server versions or configurations in the cloud
 - Provides comparative analysis and recommendations
 - Avoids having to build or maintain a second on-premise system

SAP ASE conclusion



SAP ASE Cloud Strategy

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Upcoming SAP ASE Events

Upcoming webcasts:

Register here:

<https://event.on24.com/eventRegistration/EventLobbyServlet?target=reg20.jsp&referrer=&eventid=1480117&sessionid=1&key=EC65E8FCB99D96463A86466A9157D459®Tag=150696&sourcepage=register>

October 9, 2017: The Debut of SAP Replication Server 16 and its Future Direction

October 24, 2017: The value proposition of SAP HANA Accelerator for ASE 2.0 SP02

November 7, 2017: SAP ASE Workload Analyzer Option 16 SP03 for upgrade, migrations and diagnostics

Upcoming in-person SAP ASE events:

SAP TowerTalk Frankfurt, October 10

Register here: <http://events.sap.com/de/sap-tower-talk/de/home>

TechSelect New York, October 12

Register here: <http://my.isug.com/p/cm/ld/fid=1200>

TechSelect London, October 17

Register here: <http://www.uksug.com/events/techselect-london-2017-sap-ase-sp03-launch-party>

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