



India's preferred logistics service provider empowered by SAP on AWS

Our Client

DTDC began in 1990 as a small courier delivery service company with big ambitions and bigger dreams. Their vision was to not just build a business, but to build enduring and close ties with the customers, while offering them a broad range of services.



25 years later, and over 10,000 locations across the globe, DTDC Express Limited has grown from a next-door courier shop to a multinational logistics company. As strategic partners of DPD, owned by the international brand GeoPost, DTDC has reached a new chapter as India's largest parcel delivery network.

Today, DTDC is a one-stop store for all e-tail services, offering tailor-made solutions like marketplace listing, multi-vendor management, tech development, warehousing & fulfilment, cross-border solutions, last-mile delivery, reverse logistics management, sample showrooms, and more. They proudly operate India's largest last-mile delivery network, which has made DTDC the preferred choice for strategic e-commerce trading partnerships, across the globe.

DTDC has constantly strived to not just grow as an organisation but also set an industry benchmark. From its inception as a Private Limited Company to becoming a Public Limited Company, it expanded its presence in the US, UK and Dubai. Attracting investments from Reliance ADAG to crossing 200-cr mark is a small glimpse of the many milestones achieved.

DTDC acquired a majority stake in Eurostar Express of UAE – first international acquisition by an Indian Express company.

DTDC launched the new brand identity 'DTDC Express Limited' through a strategic partner – DPD group and set up its first state-of-the-art automated hub at Hyderabad, followed by Delhi.

To be India's Preferred Logistics Service Provider

DTDC has been extensively ramping up its infrastructure, as it is the backbone for operational service excellence. The challenges that DTDC were facing

- Small and unscalable Data Centre not meeting the needs of a large enterprise like DTDC.
- Outsourcing the management of the DC infrastructure, increased the costs exponentially.

To keep up with world-wide technological developments in the logistics industry, DTDC identified that moving to the Cloud was the right option along with deploying the state-of-the-art technology which includes World Class ERP (SAP).



SAP Hybris Billing Module

Sonata being a long-term Partner with DTDC, proposed to use AWS cloud to implement SAP Hybris billing module.

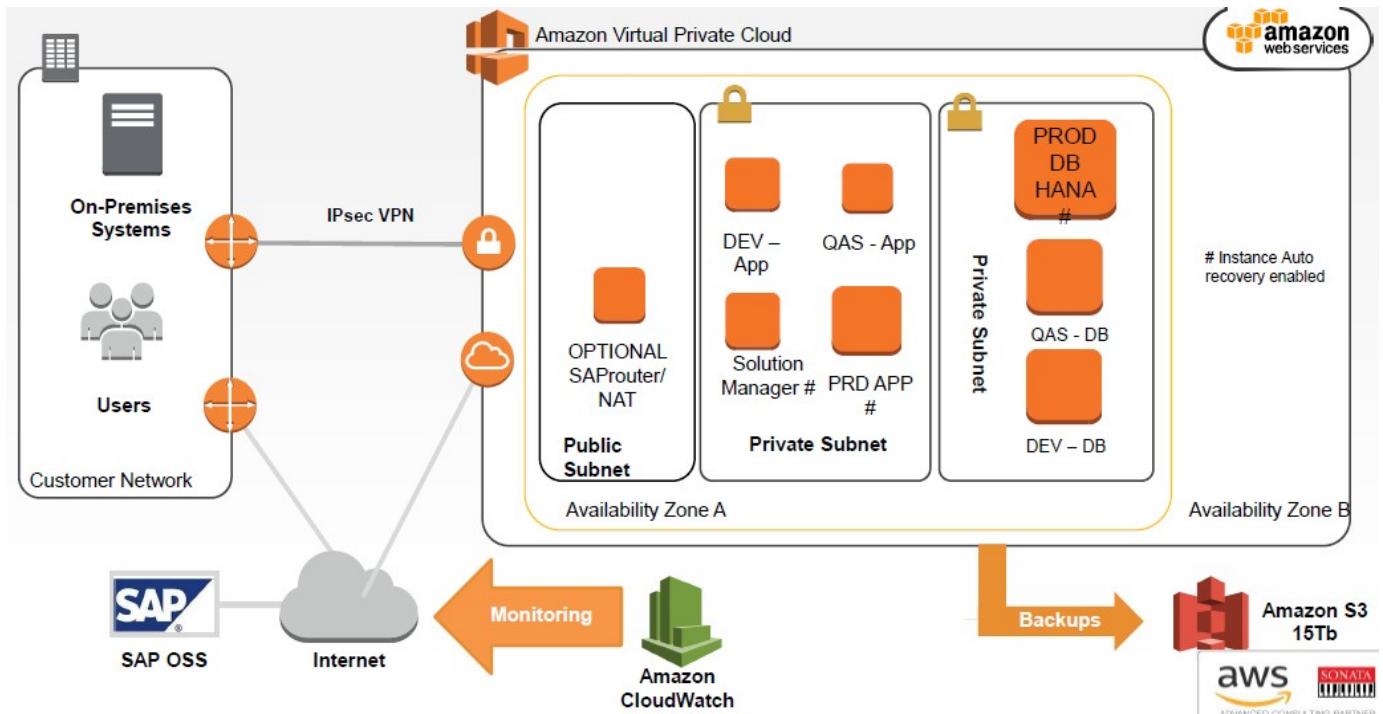
The customer chose SAP Hybris billing module on AWS after evaluating multiple cloud providers to implement the same.

DTDC is the second customer in India to implement SAP Hybris billing module.

AWS services used as part of this solution

Below are the components proposed and implemented by Sonata to SAP Hybris billing module on AWS

- SAP HANA database on Amazon EC2 instance with SLES 12 SP 4 for SAP from marketplace
- Amazon Elastic Block Store volumes will be used for EC2 storage for both application servers and HANA database servers
- Amazon VPC has been configured with private and public subnets where all the application and database servers were in private subnet and in public subnet SAP router, NAT gateway and bastion hosts were deployed
- Site to Site VPN is established between customer location in Bangalore with Amazon VPC using VPN gateway.
- Amazon EFS is used to keep binaries and share between the servers
- Amazon Simple Storage Service is used for HANA backups and other backups
- EBS Snapshots have been configured for all the application servers using scheduled scripts and HANA DB backup syncing to S3 using scheduled scripts.
- Automations are in place to start / stop the non-prod servers to save the cost by reducing utilization
- AWS Identity and Access Management has been setup for users authentication and authorizations.
- AWS Systems Manager for handling automations and OS patching.
- Infra-structure monitoring was done using CloudWatch and remediation was based on triggers and alarms configured for service health or capacity thresholds.
- AWS Cost Explorer and Budgets are configured to give a visibility on the cost and usage.



SAP solutions involved

- SAP Hybris billing module with HANA database of greenfield deployment
- The landscape consists of
 - Prod
 - QAS
 - Dev
- Solution Manager and SAP router

The application servers are in SLES 12 with SP4 platform. The HANA database is hosted on SLES 12 with SP4 for SAP. All the setup and governance is handled by AWS native services.

Monitoring and detection

- AWS cloud watch has been enabled. Infra-structure monitoring was done using CloudWatch and remediation was based on triggers and alarms configured for service health or capacity thresholds. Basic (Infra level like CPU) and custom alerts (disk utilization, memory utilisation) configured
- SAP Solution Manager (Solman), the centralized robust management and administration solution has been deployed to monitor and manage the SAP solution. Using SAP Solman ensures that SAP solution environment is operating at its maximum potential with minimum cost.
- AWS CloudTrail is enabled by default. Configuration of other alerts like Amazon S3 alerts and Amazon VPC flow logs has been proposed to the client.

Automations

- Backups are automated using
- HANA DB backup and sync to S3
- Instance start/stop
- OS patching

Security considerations

- Users and Groups have been created using the AWS Identity and Access Management (IAM) service to implement Role Based Access Control. Sonata team – to manage and implement
 - Custom policy-based rules for Storage
 - Customer Tech Support Team – Read only access
- S3 access based on the certain role policies. Each IAM entity (role) has a defined variable. Using this ID, the principalID element, a conditional logic for the bucket policy is created to scope the access of the bucket down to only users that are using the role when accessing the bucket. Using the same ID we can restrict the access other users within the same account as the bucket.
- Users are allowed access to the Cloud Infrastructure through client VPN.
 - Root account credentials protected using MFA and not used for any day to day activities.
 - Security groups are implemented to restrict access to certain ports between the servers.

Performance considerations

- The sizing for SAP HANA Deployment Infrastructure were arrived at by using the SAP Quick Sizer tool.
- All the instances used here are SAP certified instances and they have been chosen based on the quick sizer output SAPs count
- EBS GP2 based volumes are used in normal instance storage where SAP Application servers and HANA DB is installed.
- EBS GP2 based volumes are used for HANA data and log volumes
- EBS ST1 based high throughput volumes are used for HANA DB local Backups



Cost considerations

- Non-Prod instances (count=15) are utilized only 60 hours week and automated start/stop is implemented to save cost
- For prod instances (count=10), 3 years no upfront standard RI has been recommended and purchased
- To save data transfer costs, we have all the servers in single AZ with backups are enabled for all servers. In case of Az failure, we would be able to create entire infra in another Az.
- Amazon EC2 Reserved Instances (RI) have been used to as they provide a significant discount and provide a capacity reservation offering additional confidence in our ability to launch the number of instances we have reserved when we need them.
- AWS Trusted Advisor is enabled for best practice checks and recommendations.
- Every quarter the Cloud Infrastructure is reviewed, and cost optimization measures are proposed to the client.
- Backup and Recovery Architecture considerations related to cost – AWS backups were maintained for a period of 7 days. Backup Schedule was as follows
 - Production – Daily
 - Dev & QA – Tuesday and Friday, weekly.
- High Availability/Disaster Recovery Architecture considerations related to cost – AWS backups for EC2 Instance and EC2 auto-recovery.

Project timelines

- The customer consultation for the project commenced in May 2019. The implementation followed in Aug 2019. The project went live in May 2020.

- Sonata continues to do the managed services to maintain their environment for next 3 years.





The Benefits

- **Achieve faster time to value:** The entire infra for SAP Hybris billing module have been provisioned quickly which helped them to accelerate their adoption of it to improve business.
- **Scale infrastructure resources:** Since, it was in AWS cloud, they have ability to increase the prod servers in case of any additional load during month end or quarter end
- **Reduce cost:** Charged only for the infrastructure resources that were used. Being able to compare the cost incurred against the projected led to cost savings.
- **Monitoring of Infrastructure:** Amazon Web Services (AWS) offered an 'always on' form of computing and sent out alerts on reaching thresholds, to deliver a mission critical environment in a highly cost-effective way.

Role of Sonata

- Having had a very good long-term working relationship with DTDC, Sonata played a pivotal role in helping DTDC get closer to its vision of becoming India's preferred Express Logistics Provider.
- Sonata provided an excellent team of consultants, who are well versed to deal with the project challenges.



WHY SONATA?

Crafting a personalized experience has been a significant differentiator for retailers. We understand that the core principles of retail and the emerging trends of digital transformation in the Retail. With the track record of delivering futuristic solutions, we help retailers to redefine the boundaries of engagement with customers across their journey, from home to store to social-media.

Sonata’s Platformation approach helps clients to choose a solution that best fits their needs; balancing readily available platforms and solution customization

1. **Sonata READY:** End-to-end, industry-specific digital business platforms
2. **Sonata ACCELERATE:** Deploy popular horizontal platforms adding required functionality
3. **Sonata CUSTOM:** Engineer custom platforms that deliver unique digital capability and scalability

Sonata is a global technology company, that enables successful platform based digital transformation initiatives for enterprises, to create businesses that are connected, open, intelligent and scalable. Sonata’s Platformation™ methodology brings together industry expertise, platform technology excellence, design thinking-led innovation and strategic engagement models to deliver sustained long term value to customers. A trusted partner of world leaders in the Retail, Manufacturing , Distribution, Travel, services and Software industries, Sonata’s solution portfolio includes its own digital platforms such as Brick & Click Retail Platform®, Modern Distribution Platform®, Rezopia Digital Travel Platform®, Kartopia E-commerce Platform®, Halosys enterprise development automation Platform®, and CTRM Commodity trading and risk management Platform®, KODO - AI powered customer experience(CX) Platform, Sonata’s Platformation realization services have been specifically designed so that implementation of services on Microsoft Dynamics 365, Microsoft Azure, AWS, Cloud Engineering, Managed Services as well as on new digital technologies like IoT, Artificial Intelligence, Machine Learning, Robotic Process Automation, Chatbots, Block Chain and Cyber Security, deliver to the Platformation promise. Sonata’s people and systems are nurtured to bring together the depth of thought leadership, customer commitment and execution excellence to make a difference to business with technology.



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