



CASE STUDY: BICS CLOUD CONNECT

Slash provisioning time for
Cloud Connect from weeks to minutes

The Company:



BICS is an international communication platform that connects and protects global networks. They connect their voice, messaging, mobile data, cloud communications and IoT services in more than 200 countries worldwide.

BICS' Cloud Connect is a connectivity solution to give enterprises access to the cloud. It connects them with all the major players in the market. This includes AWS, Microsoft Azure, Google Cloud and Oracle FastConnect. It is tailored to each business, and thus gives customers flexibility in how they want to use the cloud. BICS' challenge was to ensure fully automated and consistent delivery of Cloud Connect, even when the solution was constantly evolving with new elements.

AT A GLANCE

Challenges

- Cut Cloud Connect service delivery time to near-real time.
- Customers expect the on-demand “cloud” experience.

Results

- Provisioning time reduced to less than 5 minutes.
- 70% OPEX avoidance.
- Quality & reliability improved by 60%.
- Validation & rollout time of updates and new features is cut by more than 98%.

Solution

Using Inmanta's intent-based service orchestrator.

Integration with existing unified inventory and BSS.

Partner Collaboration



The Challenge:

The complex service provisioning process was taking too long.

BICS was facing too long delivery times for its Cloud Connect solution. Going from order to service activation in some cases could take up to a few weeks. An internal study revealed that one of the root causes being the many project handovers needed between multiple teams and across multiple applications to deliver the end-to-end connectivity. This involved manual actions to process the order, document it in the unified inventory, correctly configure the network, and finally mark the service as up and trigger billing.

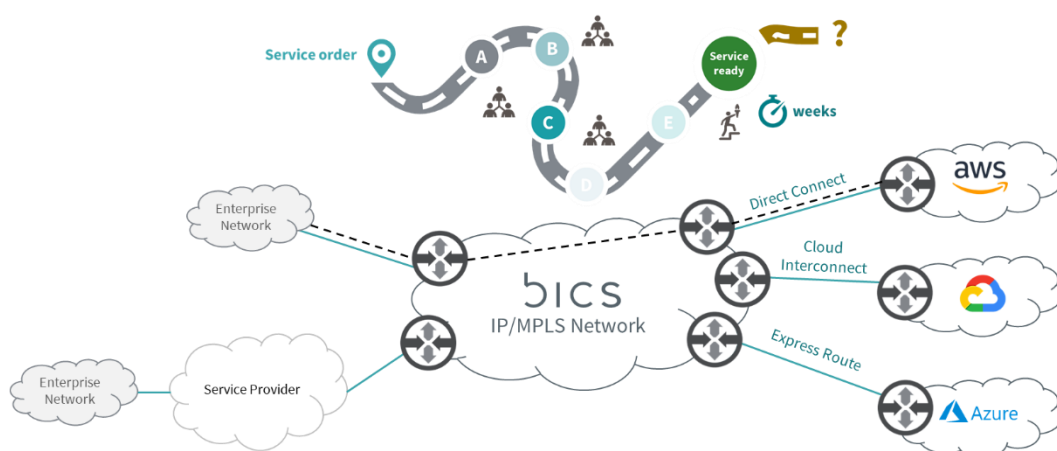


Figure 1: Manual service provisioning of Cloud Connect across the IP/MPLS network and towards multiple cloud providers (for illustrative purposes).

A Cloud Connect solution consists of an Ethernet connection between a customer site and a direct interconnect with a public cloud provider, for example AWS. Therefore, service provisioning must be done across domains: (1) the IP/MPLS network of BICS, and (2) the interconnect to the cloud provider. An additional complexity is that each cloud provider has a completely different approach for setting up such an interconnect.

Another challenge for BICS was lifecycle management of the services post-activation. This resulted in inconsistencies and configuration drift, making further changes and updates time-consuming and costly.

BICS decided to adopt network automation in order to deliver the best-in-class experience to its customers while making it easier and more efficient to operate its network, resulting in higher flexibility and consistency.

The Solution:

End-to-end service orchestration for rapid, on-demand service delivery, high consistency, and faster time to market.

BICS selected Inmanta's service orchestrator for end-to-end automation of its Cloud Connect solution. Inmanta in turn partnered with Amartus who are experts in implementing networking & cloud automation solutions. More specifically, Inmanta delivered the Inmanta Connect product, and together with Amartus implemented the BICS-specific use case as well as the integrations with BICS' unified inventory and BSS.

"Inmanta can handle complex flows spanning multiple domains and orchestrating through internal tools. More importantly, it provided us with an end-to-end solution - taking in the request from the customer, working its way on our on-prem network, followed by provisioning on hyper-scalers and finishing it all up with proper documentation" says Kurt Wauters, Automation Architect at BICS.

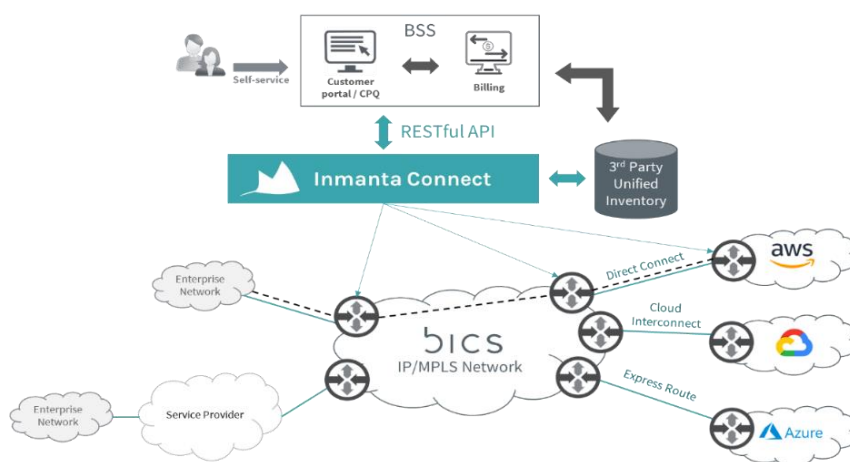


Figure 2: High-level overview of the orchestration solution implemented at BICS.

Inmanta Connect is Inmanta's orchestration product for connectivity services in transport and access networks. It leverages Inmanta Service Orchestrator, a vendor-agnostic platform for multi-domain and multi-layer service and network orchestration. Its patented, intent-based orchestration technology ensures (1) rapid and stable service provisioning, (2) consistent network configuration across heterogeneous networks and multiple domains and, (3) secure and reliable connectivity through out-of-the-box self-healing.

The intent-based approach enabled BICS to automate the entire service lifecycle: not only service provisioning, but also feasibility check, updating, healing, decommissioning and failure handling. An important aspect for the lifecycle management was the integration with the unified inventory. This allows the orchestrator to retrieve all information for the

feasibility check, reserve resources before making changes in the network, and finally document all changes to resource and service configurations.

Applying agile and DevOps best practices were critical for the successful, iterative delivery of the project. For example, Amartus and Inmanta helped to set up a CI/CD pipeline and provided test cases to support automated, continuous testing by BICS. Over 800,000 tests were run in just three months. This scale of testing quickly uncovers bugs that might otherwise be in operation for months and ensures carrier-grade quality.

The Outcome:

Service provisioning within 5 minutes, resulting in more business value, higher reliability and considerable OPEX savings.

Thanks to end-to-end service orchestration, BICS has reduced the provisioning and delivery time of the Cloud Connect service from weeks to less than 5 minutes. The combination of BICS' self-service customer portal with Inmanta Connect had an immediate positive impact on the customer experience. The extensive automation also resulted in operational improvements and in some cases up to 70% OPEX savings, freeing up internal resources to focus on other value-generating activities.

Inmanta's modular architecture with open APIs provides BICS with a flexible and future-proof solution. It enables BICS to choose the best of breed components and to easily evolve and extend its service offering.

Moreover, the use of DevOps best practices and CI/CD for automated, continuous testing speeds up the roll-out of changes, updates, and new features to production. It allows BICS to evolve its services more frequently and in a consistent manner. Such changes are now validated only once and immediately rolled out to all existing services. For example, BICS migrated all its orchestrated services from SDP to EVPN in a fully automated way. For the majority of its service instances, the orchestrator cut the roll-out time by more than 98%. While in the past certain changes were cumbersome, the automation helps to reduce technical debt and improve validation.

BICS already implemented several principles and tooling to ensure high quality and reliability, resulting in a low number of customer support tickets. The end-to-end automation has even further reduced this number. Moreover, the automated documentation in the unified inventory strongly improves consistency across the Cloud Connect or any other dependent service or network resource.



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