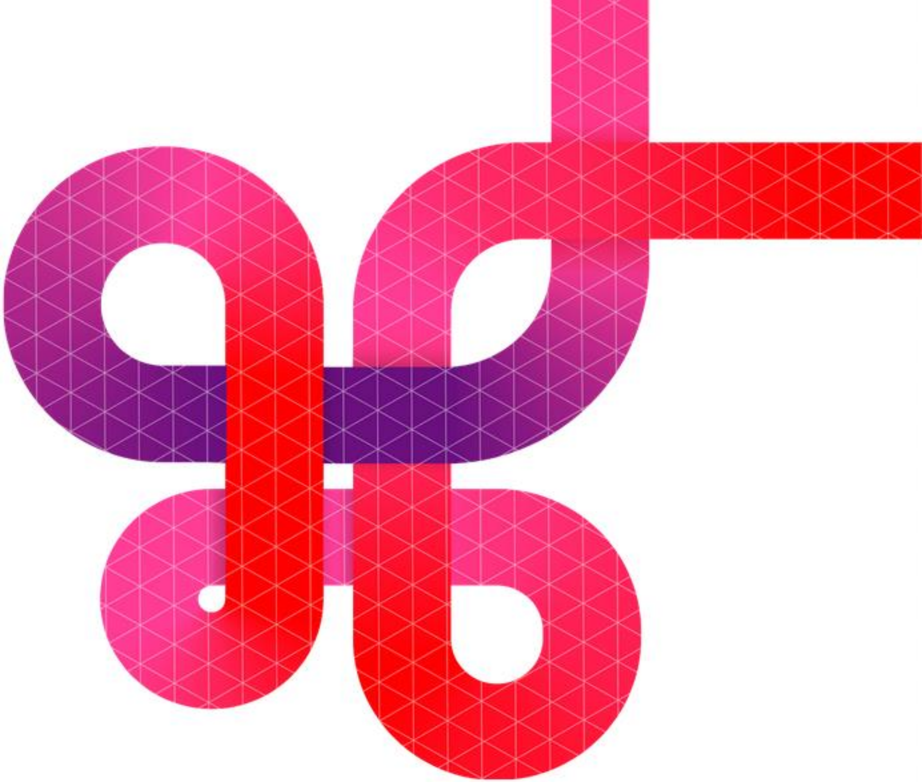

IT Security Overview

Celonis Intelligent Business Cloud

January 2020

Celonis Security Model

The Celonis Intelligent Business Cloud (IBC) has been designed to deliver end-to-end data security. We follow best-in-class standards to ensure the best possible protection for our customer data. Security in your IBC team is a shared responsibility between you as customer and Celonis as service provider. Celonis provides services that are designed with a high security standard. Customers are responsible for both the configuration and usage of the services provided by Celonis.

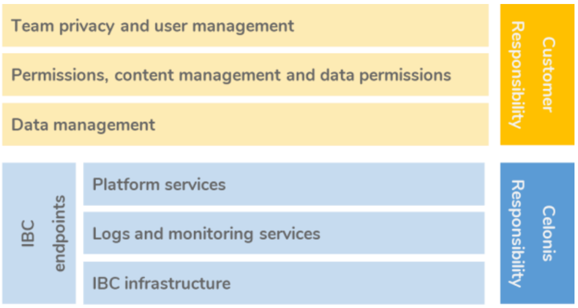
Team privacy and user management
Permissions, content management and data permissions
Data management
Customer Responsibility
IBC endpoints
Platform services
Logs and monitoring services
IBC infrastructure
Celonis Responsibility

Figure 1: Security responsibilities of customer and Celonis

Celonis applies a multi-layered security architecture to protect customer data, which addresses the following:

❑ External interfaces

❑ Access controls

❑ Data storage

❑ Physical infrastructure

This security architecture is complemented by monitoring, alerts, controls and processes that are part of Celonis' security measures. Deviations may apply for IBC offerings outside the EEA or the United States.

External Interfaces

Users get access to the IBC via the Internet using secure protocols. It is possible to connect to our services with the following options:

❑ Celonis' web-based interface

❑ Celonis' on premise extractors

❑ IBC Data Push API

All communication between user and Celonis services is encrypted via HTTPS using TLS 1.2 or higher. The IBC supports IP range blocking to enable customers to restrict access to trusted networks only.

Access Controls

Authentication

The Celonis IBC has robust authentication mechanisms in place. Every request to the IBC must be authenticated and is scanned by a web-application firewall. User password hashes are securely stored and strong password policies are enforced. The IBC offers built-in two-factor authentication. For customers who want to manage authentication mechanisms within their account, federated authentication can be set up via SAML 2.0 or OpenID.

Authorization

The Celonis IBC provides a detailed, role-based authorization concept to ensure that data and information is accessed by authorized users only. User access to all objects and elements in the IBC can be specified with user and group permissions. The customer can choose from a set of templates for the user or role permissions or design custom permissions. Access to single data points in the analyses can be restricted with a sophisticated data permissions framework.

Data Storage

We protect all data stored in the IBC from unauthorized access and from data loss by incorporating data encryption and access restrictions. Additionally, customers can select the geographical region where the data shall be stored.

Data Encryption

In the IBC, all customer data (incl. backup data) is always encrypted at rest following best-in-class industry standards. All data transferred to the IBC via connector or data push API is always encrypted via HTTPS using TLS 1.2 or higher.

Tenant Separation

The IBC is running on a multi-tenant architecture where each team in the IBC is one tenant. Tenant separation follows a meta data driven approach and industry best-in-class standards. Application data as well as analytics data are separated between all tenants.

Data Integrity Protection

Celonis protects data from accidental or intentional destruction due to user errors, system failures or malicious attacks. Backups for application and analytics data are created daily and can be recovered for 30 days, if necessary.

Security Monitoring and Alerting

To protect the platform from malicious attacks multiple layers of defense have been set up and integrated into the IBC architecture. The system is protected on OS level through system hardening policies and guidelines. On network level, firewalls and network zoning ensure only whitelisted applications are exposed (reduced to the application itself). On application layer, access controls and policies ensure only authorized access. Elevated privilege access is only possible through a jump server creating an additional barrier. Highly specialized systems are used for dedicated service tasks to reduce attack surface.

Log and monitoring services in the IBC are used to manage and orchestrate all tenants. All logs are captured and synchronized into a centralized log storage. Our centralized logging store includes logs from application logs, audit logs, firewall logs and application change logs.

Physical Security

The Celonis IBC is hosted on Amazon Web Services (AWS) or Microsoft Azure data centers for our main geographical sales regions (Americas / European Union) and is available in multiple regions. Regional providers are available where aligned with local regulation or a local setup with domestic providers is being supported.

AWS and Azure data centers are certified to ISO 27001 and PCI/DSS Service Provider Level 1. AWS and Azure data centers are state of the art utilizing innovative architectural and engineering approaches. They employ many physical security measures including among others biometric access controls, 24-hour armed guards and video surveillance to ensure that unauthorized access is not permitted at any time. As standard security measure neither Celonis personnel nor Celonis customers have access to these data centers.

Security Compliance

Celonis monitors security on the platform with a dedicated IT security team and works with certified third-party auditors to validate and maintain security. On application level, Celonis runs its own tests (once a quarter), while on infrastructure level the cloud providers' standards apply. External penetration tests for application/network are performed half-yearly.

Celonis is dedicated to high security across all aspects of the organization. We are using the ISO 27002 standard´s best practices as Celonis holds a full ISO 27001 certification and has successfully implemented an Information Security Management System (ISMS) according to ISO 27001 standard.

Leave Your Data In Place

Celonis offers several scenarios for the IBC where the customer can decide how the data processing shall be configured. Next to the recommended and standard full cloud scenario (see figure 2a, p.5) the Leave your data in place (LDP) scenario allows the customer to fully move the data processing to his or her premises or a virtual private cloud hosted and managed by the customer. In the LDP scenario the analytics data is fully managed and utilized on the customer servers. The Event Collection with data extractors, the Analytics Data Store, and the Celonis Process Mining Engine fully run on the customer owned infrastructure (see figure 2b, p.5). Analytics configuration, user management and content management stay on the IBC side. The connection between both is established via a secure SSH tunnel.

Conclusion

The Celonis Intelligent Business Cloud (IBC) is a platform developed in alignment with the security by design approach where security has been fundamental to the architecture, implementation and operation of Celonis service from the very beginning. Across all scenarios and deployment options, Celonis IBC offers a secure and protected platform for customer data considering current and evolving threats. The features built into the IBC provide enterprise-class security by default without additional effort, complexity and management that traditional solutions require from customers. Every aspect of the IBC is built to protect our customers' data. Security is top priority for everyone at Celonis, to ensure a high standard every day.

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Figure 2a: IBC full cloud architecture

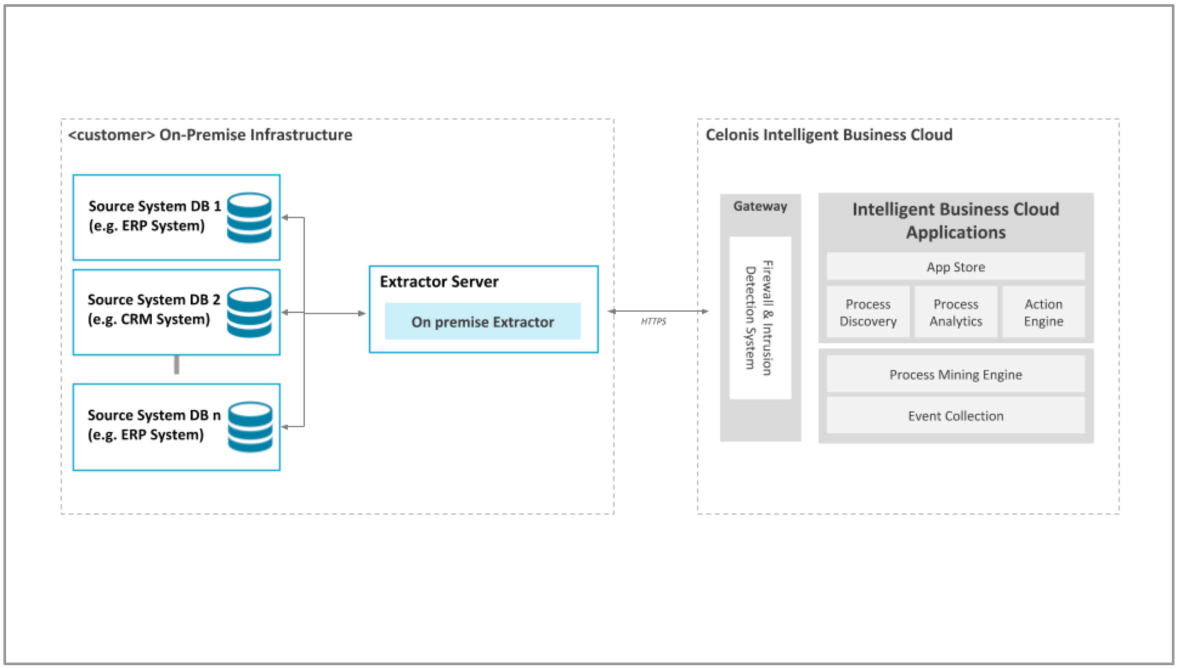
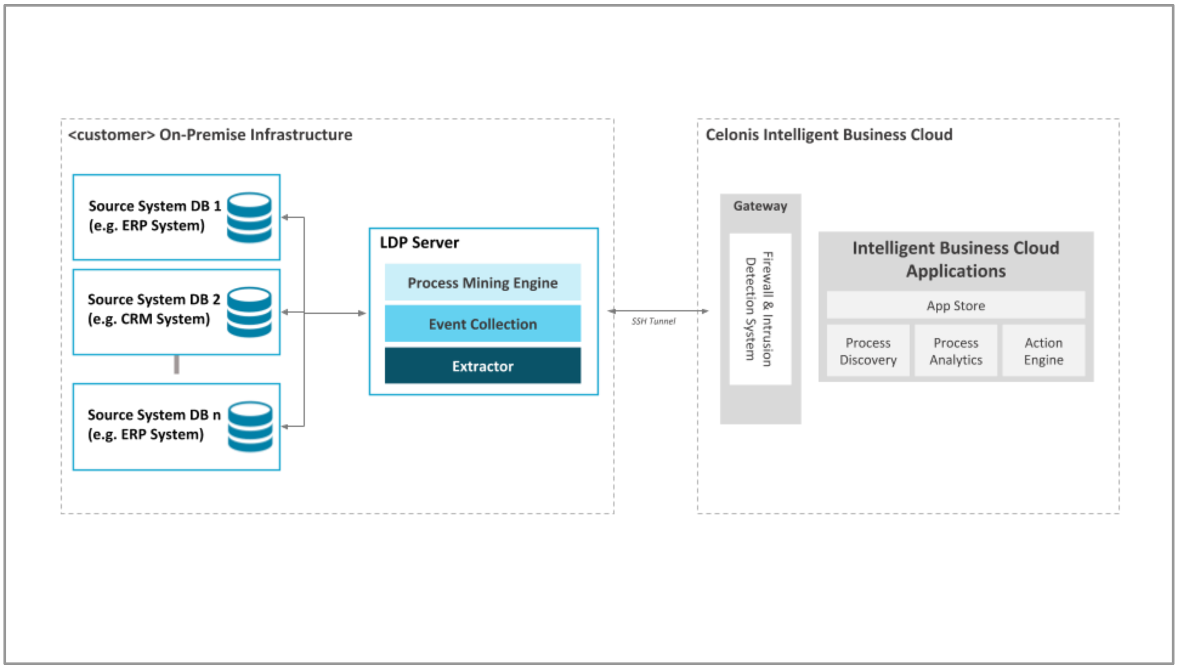

<customer> On-Premise Infrastructure
Source System DB 1 (e.g. ERP System)
Source System DB 2 (e.g. CRM System)
Source System DB n (e.g. ERP System)
Extractor Server
On premise Extractor
HTTPS
Celonis Intelligent Business Cloud
Gateway
Firewall & Intrusion Detection System
Intelligent Business Cloud Applications
App Store
Process Discovery
Process Analytics
Action Engine
Process Mining Engine
Event Collection

Figure 3b: IBC Leave-your-data-in-place architecture


<customer> On-Premise Infrastructure
Source System DB 1 (e.g. ERP System)
Source System DB 2 (e.g. CRM System)
Source System DB n (e.g. ERP System)
LDP Server
Process Mining Engine
Event Collection
Extractor
SSH Tunnel
Celonis Intelligent Business Cloud
Gateway
Firewall & Intrusion Detection System
Intelligent Business Cloud Applications
App Store
Process Discovery
Process Analytics
Action Engine