



Technical Whitepaper

## Accelerate Business-Driven Innovation with Integration: SEEBURGER Business Integration Suite

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## Accelerate business-driven innovation with SEEBURGER

SEEBURGER is a family-owned, global IT company offering integration solutions as well as integration and consulting services with over 1,200 employees worldwide, specializing in integrating the IT landscape of businesses with a powerful all in one platform, the Business Integration Suite (BIS).

Since 1986, we have been transforming the IT landscape with BIS—our single platform, a fully in house developed and supported technology stack. Our holistic approach to integration means that one platform is all you need to connect clouds, applications, systems, partners and more.

Digital transformation is a prerequisite for turning modern business data into actionable insights, but did you know that the prerequisite to digital transformation is integration? Integration of your entire business network, from data and services to applications and ERP systems, accelerates business-driven innovation by helping your IT team achieve the five essential elements of digital transformation:



Executing cloud-first initiatives



Digitalizing business processes



Automating data flows



Complying with industry standards and regulations



Ensuring data integrity with security and control



## Optimize digital transformation with BIS

All you need is SEEBURGER BIS—one single platform to optimize the digital transformation of your business. BIS solutions simplify complex business processes to ensure smooth data flows and seamless connectivity for the following integration scenarios:



**MFT** – Secure transmission of sensitive data between systems and people



**IIoT/Industry 4.0** – Embed machinery, plants and products into business processes



**API/EAI** – Connect applications, business partners, cloud services and data sources in real time with our connectors



**E-Invoicing** – Digitalize inbound and outbound invoices



**B2B/EDI** – Exchange business documents in accordance with industry standards



**ERP/SAP** – Connect any ERP system seamlessly and take advantage of our SAP-certified expertise

BIS is the scalable, modular platform that can successfully fulfill all the digitalization requirements of your business processes, regardless of the interface, data format, standard or communication protocol.

More than 10,000 companies worldwide power their integrations with SEEBURGER BIS.



# Unlock the value of digitalization with the SEEBURGER Business Integration Suite

## Centralized management and control of digitalized business processes

BIS allows you to consolidate all of your integration processes and information exchanges – securely and efficiently. Whether for internal integration requirements or integrating endpoints and partners outside your organization, with BIS, you can embrace the challenge and implement any integration style or integration pattern without limits.

## Respond rapidly to changes inside and outside your organization

Organizational changes, mergers, acquisitions and partial divestitures have a profound impact on managing and securing related integrations and data on a single platform. To cope with IT landscape changes easily and rapidly, BIS helps organizations adapt to these changes in a governed way with its user, role and security management. BIS connects easily to an identity and access management infrastructure, which enables organizations to implement and quickly react to regulatory changes in order to keep their integration processes and handling of related data compliant with such frameworks.

## Choose deployment models and service options aligned with your strategic considerations for each of your integration challenges

Some integration processes support digitalization strategies that enable companies to achieve a competitive advantage; other processes can be regarded as commodities. For the latter, many companies decide to assign non-value adding tasks to a service provider that is more suited to the task. For example, EDI and B2B integration, including B2G, can be fully managed in the SEEBURGER vendor cloud, which offers easily-bookable services for such scenarios. The SEEBURGER iPaaS offering provides a way to eliminate the costs and efforts of running a platform. While pursuing a one integration supplier strategy, our customers focus on the processes that matter in achieving their goal of differentiation through digitalization, and they choose a BIS iPaaS model that is deployed on premises, in any cloud or in a hybrid scenario.

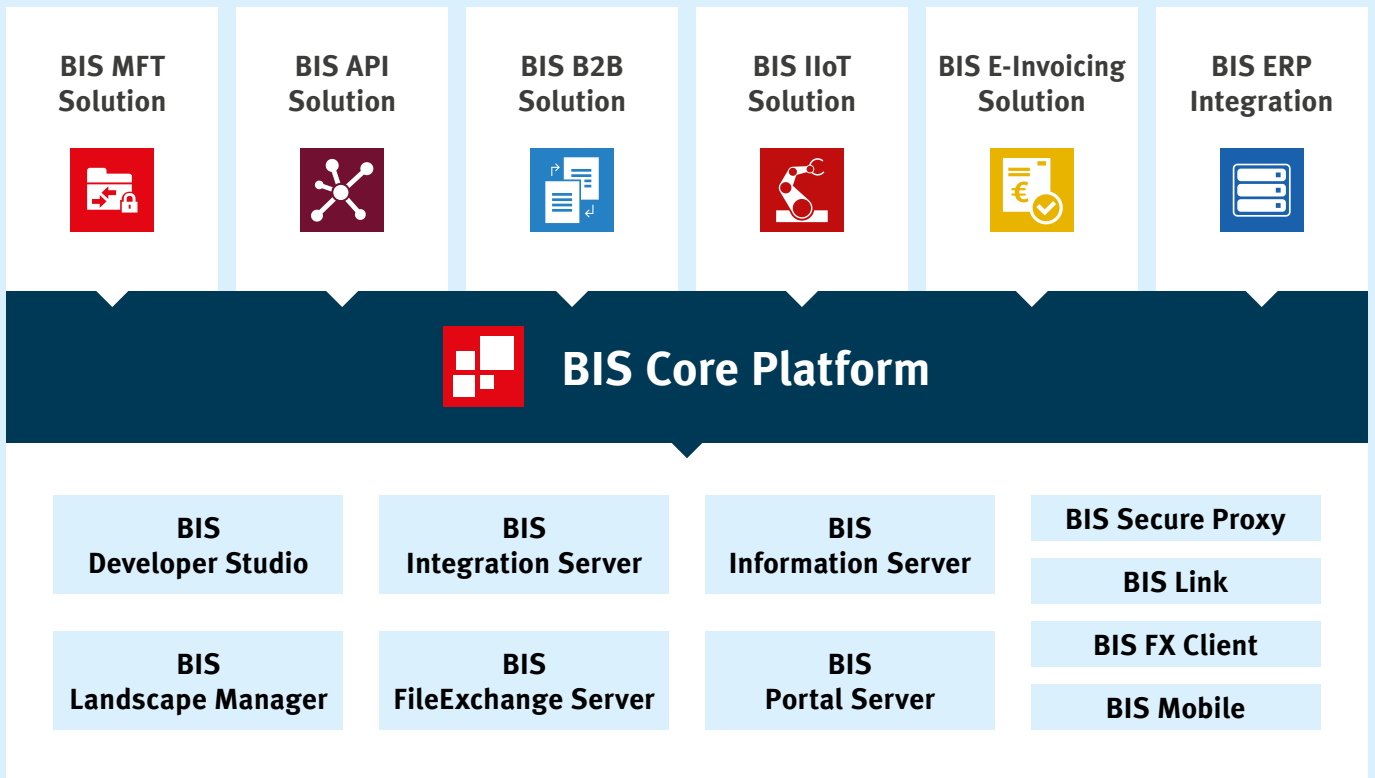
## Leverage and scale your infrastructure with hyperscalers

BIS runs natively in any leading public cloud infrastructure – Amazon Web Services (AWS), Microsoft Azure or Google Cloud Platform (GCP)—centralized, hybrid or distributed. With support for Kubernetes and Docker technologies, our customers can scale using these hyperscalers, which results in reduced operational costs, risk elimination and more flexibility and control that modern enterprises need to integrate and digitalize their IT landscapes.



# Business Integration Suite Platform Architecture

BIS is designed, developed and continuously maintained by SEEBURGER. All BIS components are designed to work smoothly together with an API driven architecture. The BIS REST API exposes APIs, allowing you to integrate, configure and monitor the BIS platform remotely and seamlessly with your environment. The platform also supports active-active setup to allow updates with no downtime.





## The Platform's Server Components

The BIS platform consists of several server components. Each server component is used by all BIS solutions, depending on the intended purpose and scope.

### BIS Integration Server

#### Process orchestration and connectivity are the center of integration

The BIS Integration Server uses the BIS Process Engine and works in accordance with the Business Process Execution Language (BPEL) standard. The BIS Channel Engine is an in-memory variant of the BIS Process Engine. Together, they execute all integration processes, which are fundamental to all digital integration scenarios (MFT, B2B, API, IIoT, E-Invoicing and ERP integration, regardless if asynchronous or synchronous). The BIS Adapter Engine ensures the secure and reliable exchange of messages, files and API calls with connectors for seamless application integration with a large number of protocols. The powerful BIS Mapping Engine offers high-performance, any-to-any conversion that masters all data integration mapping requirements (testing, splitting, merging and converting).

### BIS Information Server

#### Back-end for business and message monitoring

BIS Information Server is the data source for business and message monitoring use cases. It serves as the back-end for various BIS applications, such as BIS Message Tracking and BIS Business Tracking, and includes a metadata store with a search index and functions for the aggregation of KPIs that are used by Message Tracking add ons. Documented APIs provide access to the data, which allows the use of third party analytics tools to derive further information from the data.

### BIS FileExchange Server

#### Central secured mailboxes and end-point enablement

The BIS FileExchange Server provides the basis for ad hoc data exchange (up/download permits via link) with unregistered users and sharing of files and folders with registered user accounts. Access is made possible via FTP/S, SFTP and web APIs with a number of clients, such as Windows Explorer, Java API Client, Command Line Client and Microsoft Outlook add-in or mobile apps (IOS, Android).

### BIS Link

#### Enable endpoints to be connected

If systems need to be equipped with a communication endpoint in a B2B/EDI, EAI, IIoT or MFT integration scenario, BIS Link bridges the gap. BIS Link can be rolled out to hundreds of endpoints, preconfigured, monitored and updated when needed.

### BIS Portal Server

#### Bring everything together in the browser-based user interface

All web interfaces are based on the BIS Portal Server providing the BIS App Framework. The cloud compliant user management integrates seamlessly with your LDAP/Active Directory but also supports the administration of accounts for external users – e.g. of your business partners, which is a prerequisite for state-of-the-art business community management and self service applications for business units.



## The Platform's Supplementary Components

The BIS platform's supplementary components add important functionality to support your DevOps organization with the implementation of digitalization projects:

### BIS Developer Studio

#### Extend the solutions provided by SEEBURGER

The BIS Developer Studio is the Business Integration Suite's integrated development environment. It is based on the open source Eclipse platform and contains graphic tools (plug-ins) for process, mapping and API design. Created scenarios, or solutions, can be transferred and activated (as hot deployments) from the Developer Studio into the run-time environment without interrupting operations. Alternatively, deployments can also be performed offline. The integration in build automation systems (CI/CD) is also supported for the advanced developer. Plug ins for the integration of common source code version management systems (GIT/GITHub, CVS) are available for source code management.

### BIS Landscape Manager

#### Automate software installation and updates to gain security

The BIS Landscape Manager manages BIS system landscapes and automates installation and maintenance based on recipes describing the landscape and the components to be installed on each [virtual] server/machine belonging to the landscape. This especially pays off when a BIS environment is distributed across several nodes, for example to achieve greater availability and/or higher performance or when a separate environment is required for development, testing and production. It integrates seamlessly with your infrastructure as code or GitOps strategy.

BIS Landscape Manager automatically downloads new software versions from the SEEBURGER Cloud and can be configured for fully automated updates or in interactive mode, you can choose when the updates should be installed. For systems with active-active setup, installation can be configured to perform automatic updates on all nodes with no additional user intervention and with no downtime. The configuration settings enable SEEBURGER customers to choose the best method of installing updates for their organization.

### BIS Secure Proxy

#### Securely establish connections over the Internet

BIS Secure Proxy connects communication adapters with the Internet. Secure, encrypted communication channels are provided by using the "fence" component, which is deployed in the DMZ (demilitarized zone) in order to avoid time consuming and frequent changes to the firewall configuration, such as when new business partners are activated.

### BIS Data Store

#### Manage data objects, payloads and attachments

BIS Data Store contributes to scaling the BIS platform with advanced data and storage management for data processed within the integration platform. BIS Data Store helps lower operational costs, because no third party tools, such as NFS tools, are required, and it interoperates with anti virus scan tools. BIS Data Store provides encryption of data at rest, ensuring compliance with data protection requirements—especially in the context of sensitive payload information. Management capabilities enable users to address requirements for fine-tuning and managing the re organization of different data and payload categories. With its capability to provide automated replication between several BIS Data Stores, your distributed system landscapes stays consistent, which allows consistency in high-availability scenarios based on active-active clusters.



# **Modular BIS solutions for all your requirements**

SEEBURGER BIS can transport and transform data while delivering for high SLAs, even with extreme volumes and large file sizes. With its modular structure, flexible service-oriented architecture and simplified start via standard solutions, you can pick and choose a modularly-built BIS solution that works for your requirements.

### Solution packages based on your needs

BIS is available in a variety of solution packages, depending on the size of your company, the industry and your IT landscape needs. For enterprise customers, our solution package includes high performance development tools for developing and configuring any integration scenario yourself. For SMB customers, our solution package offers pre-configured functions and content for all processes in your integration scenarios. Pre configured industry profiles bundle industry-specific functions and communication protocols, which means you can immediately configure your setup after installation.

### Modular structure

Are you looking to gain a competitive edge for your B2B/EDI integration and plan an API initiative? Start by implementing the solutions that you need now, and then implement additional solutions and their components when your business needs them.

### Architecture

The flexibility of BIS is derived from the server foundation and core platform, which is based on an intelligent

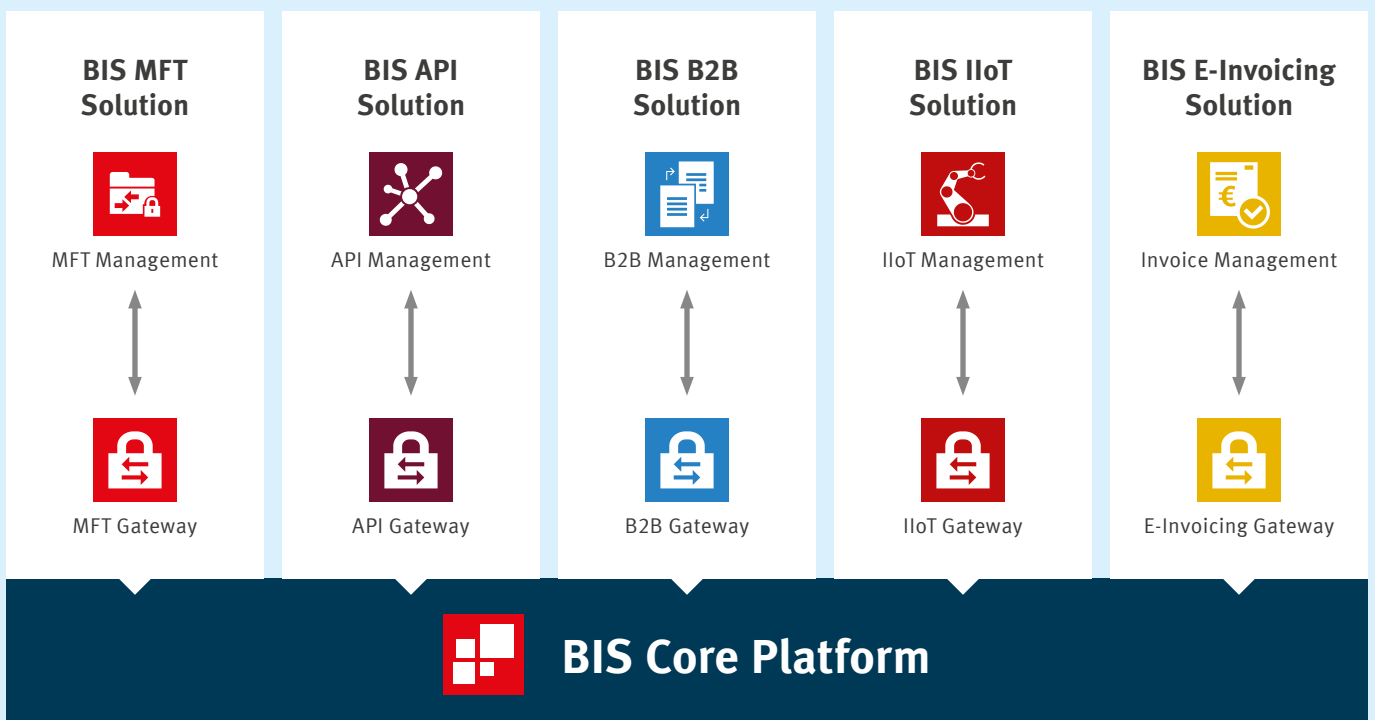
architecture that provides the flexibility required to perform core functions of integration, such as file exchange, management and monitoring. Pre configured solution profiles for specific integration scenarios and industries are built on these core functions: MFT, API/EAI, B2B/EDI, IIoT, E Invoicing and ERP/SAP integration.

### Value-based license models

You can choose to license an entire BIS solution or just parts of a solution to suit your organizational needs and achieve a secure return on investment. License model options include upfront licenses, subscriptions, user, scenario and volume based models.

### Deployment models

BIS deploys in public clouds, on premises and as a hybrid solution (a mix of cloud and on premise deployments with cloud connectors). We offer a private cloud option (SEEBURGER iPaaS and Cloud Services) and public cloud options with AWS, Microsoft Azure or Google Cloud. BIS provides support for Kubernetes and Docker open source platforms, which allows cloud-native deployment and leverages the operating models of hyperscalers.





## BIS MFT Solution: File transfers made simple and secure

The BIS Managed File Transfer (MFT) Solution is your tool for exchanging files – information, data and documents – between internal systems, between internal systems and external partners, between people and systems, ad hoc and interactive or scheduled and automated.

### One platform for all MFT scenarios

The BIS MFT Solution supports the implementation of any internal or external file transfer scenario. Regardless of the data type – offers, orders, invoices, machine data, confidential reports or personal data – the reliable and secure electronic transmission of sensitive data is critical for business success.

#### Integrated data exchange supports a coupling of systems:

The BIS MFT Solution supports any kind of integration – ground to ground, ground to cloud or cloud to cloud. In addition to standard protocol endpoints, the BIS Link (a streamlined MFT communication endpoint that is preconfigurable for distribution) enables remote endpoints to connect to the BIS MFT Solution.

#### Automated file exchange – time driven or event driven:

Regularly recurring data transfers are efficiently automated via the BIS MFT Solution combining file, message or stream-based protocols.

#### Ad hoc exchange of data between individuals made as simple as sending an email, yet secure!

Send sensitive documents easily and securely with the BIS MFT Solution, which integrates smoothly into typical workplace environments that use Microsoft Outlook, Microsoft Windows Explorer and an Internet browser.

#### Centrally managed file access and file sharing

The BIS MFT Solution provides virtual data rooms, enabling teams to securely share high volumes of files of any size – and to create limits on the number of downloads and limit the availability of the files for a specified amount of time.

### The advantages

- ✔ **Central control**  
Control and trace all of your file transfers between any business partner, system and application via the central transaction management of all communication protocols.
- ✔ **Secure at all points of transmission**  
Encryption in transit and at rest.
- ✔ **No size limit**  
Send any files without a size limitation.
- ✔ **Transparency and compliance**  
Controlled data transmission activities (sender, receiver and time tracking) that meet compliance regulations.
- ✔ **Workflow controlled**  
Individual automated/workflow-controlled scenarios for the pre or post processing of files.
- ✔ **API enabled**  
REST interfaces for easy integration into own mobile apps or portals.

### Be ready for the future

Conceptualized as a replacement for FTP and ad hoc file transfers to data lakes and data warehouse integration for hyperscaler environments, file and data transfers are increasingly important to the smooth running of the IT landscape.

The BIS MFT Solution adapts to the managed file transfer requirements of business today and tomorrow by delivering a large variety of activities, adapters and pre-configured connectors that integrate systems, applications, clouds and people between your organization and business partners.



## BIS MFT Solution: Components

The coordination of company-wide data streams requires security, control and transparency. SEEBURGER's MFT Solution comprehensively ensures all of this via two core components: (1) The BIS MFT Gateway facilitates the secure transfer of data and (2) BIS MFT Management ensures the efficient administration and control of all transfers.

### BIS MFT Gateway

The BIS MFT Gateway controls and governs all processes around file, data and stream transfers. The following four interactive functions are controlled by the BIS MFT Gateway:

#### Integration patterns

- System-to-System
- System-to-External Partner
- System-to-Cloud
- System-to-Human

#### File routing and automation

- Protocol adapters: HTTPS, FTPS, SFTP, EDI INT AS2/AS4, OFTP2, Filesystem, REST, SOAP...
- Technology, database and data storage adapters: HDFS, KAFKA, JMS, LDAP, MQTT, OPC UA, MSMQ, JDBC...
- Public cloud access connectors: S3, Cloud Storage, Cloud Pub/Sub, File Storage, Blob Storage, Data Lake Storage, Service Bus...
- Routing based on metadata and file content
- Any-to-any converter
- Ad hoc file exchange per email permit (secure upload and download links)

#### Security

- Data encryption at rest
- Transport security (transport level security SSL/TLS, configurable ciphers)
- File security (encryption and signature in accordance with SMIME, PGP and other standards)
- Integration of AV and DLP scanners (ICAP)
- Secure internet connection for all protocols with BIS Secure Proxy

#### Monitoring

- Central file tracking
- Statistics, including transfer times and volumes



# **BIS MFT Solution: Components**

## BIS MFT Management

BIS MFT Management offers an overview of your own and third-party MFT mount points, users, authorizations and file transfers at any time and supports onboarding via self-service functions.

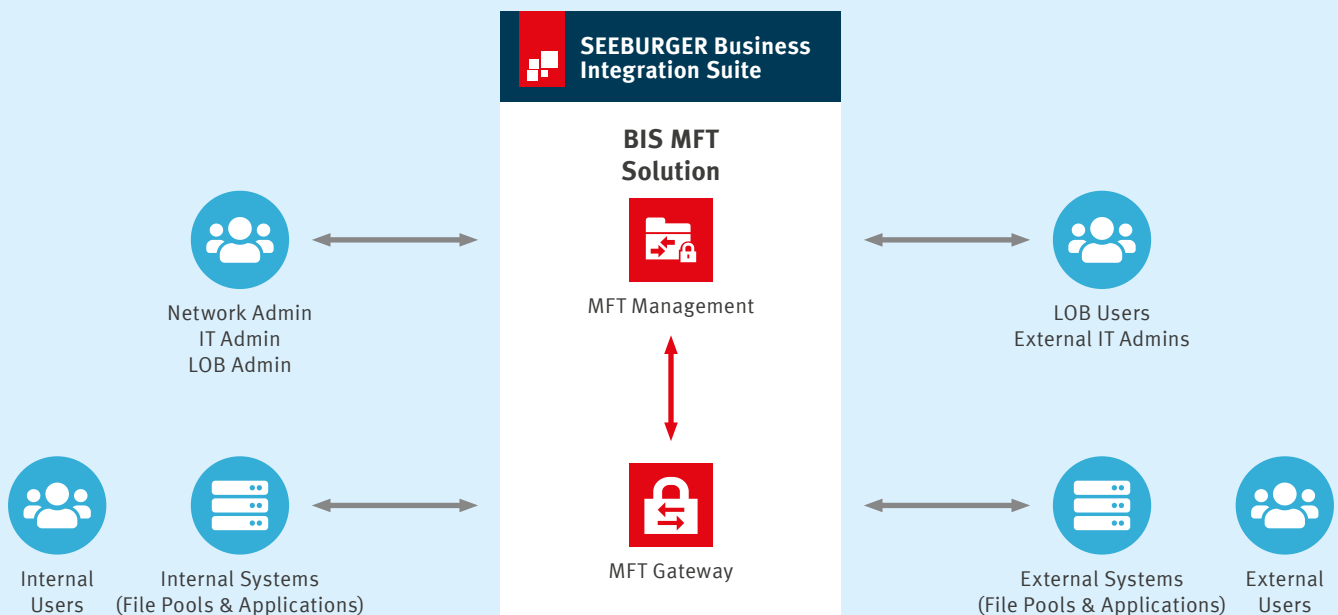
With role-based functions for users, communication partners, MFT integrators and MFT specialists, BIS MFT Management minimizes administration effort, reduces communication with users and also supports:

### Onboarding

- Creating new user accounts
- Connecting external partners
- Deploying BIS Link software (MFT agent) to partners or other subsidiaries

### Self Services

- Maintenance of certificates and passwords by business unit users and partners
- Configuration of recurring MFT processes by the business unit users utilizing simple predefined data exchange templates
- Creation of templates for line of business use cases and scenarios for faster time-to-market
- File tracking for business unit users and external partners





## BIS API Solution: Execute API initiatives to accelerate business processes

APIs are everywhere and require integration and management, which is why every digitalization project requires API integration and API management strategies. Business applications need to provide or consume data or functionality via APIs in a secured and managed way, and the BIS API Solution enables integration teams to address these challenges while executing all API initiatives related to the technical, organizational or management perspective of the API lifecycle.

### One platform for all API integration and API management scenarios

The SEEBURGER BIS API Solution enables integration teams to façade legacy data silos and access application functions so they can utilize valuable data and re-use application services with modern API access methods. Our solution interfaces with data holding applications by leveraging off the shelf communication and integration adapters. Additionally, SEEBURGER provides many functionality-rich connectors to help you easily integrate and securely connect any endpoint, including cloud based applications. Convert any type of interface, from or to RestAPI or SOAP interfaces, as well as JSON-to-JSON mediation.

**Web shop connection:** Integrate your web shop smoothly with your ERP system.

**CRM/ERP integration:** Exchange data in real time between CRM and ERP systems (E. g. Salesforce to SAP).

**Give partners access to services:** API based access to catalogs, complex price lists and product descriptions.

**Mobile apps:** Even mobile apps require access to company data for business use, and APIs enable the secured and controlled approval of access to data.

**Opening of company applications for customers:** An API proxy protects internal systems and provides customers with secured and controlled information as a service, which enables central control and monitoring of external API usage.

**Cloud:** Cloud-based services require sensitive information from internal systems.

Typical use case scenarios are application integration, B2B integration, cloud integration and data integration – we call it the ‘A, B, C and D’ of API integration. The high performance and scalability capabilities of the BIS platform make it a perfect fit for heavy lifting and application orchestrating requirements.

### The advantages

The SEEBURGER BIS API Solution adds real-time integration and processing capabilities to BIS, which enables integration teams to contribute to the digitalization of their organizations in real time with many advantages:

- ✔ Handle increasing needs for SOAP or REST API-based integrations for applications, B2B, cloud and data with one platform
- ✔ Accelerate API initiatives by eliminating the need for backend API developers
- ✔ Guarantee a governed, transparent and monitored usage of APIs
- ✔ Ensure security and protection of API traffic within IT landscapes
- ✔ Reduce complexity and allow adoptability via a high-granular and multi-level policy management
- ✔ Allow re-usability of existing integrations by combining them with API integrations
- ✔ Re-use integration assets by combining one or multiple APIs down to the methods to create exposable API products
- ✔ Work with API-facing code
- ✔ Use cloud connectors to reduce the time it takes to fulfill business requirements
- ✔ Use API aided wizards to increase productivity via API aided implementation procedures and the assignment of management applications to user groups
- ✔ Integrate with billing systems
- ✔ Support automation initiatives with a REST approach to BIS





## BIS API Solution: Components

The SEEBURGER BIS API Solution delivers against every aspect of an API's lifecycle, from inception by the provider, to utilization by the consumer and everything in between. Our BIS API Solution addresses an extensive range of API requirements via two core components: BIS API Gateway and BIS API Management (UI Layer).

### BIS API Gateway

BIS API Gateway covers dedicated API gateways, which secure the back-end infrastructure, such as data-holding systems and API integration services. BIS API Gateway records API traffic and handles access control, API data quality and API security. With a small footprint and lightweight approach, you can easily extend Gateway Groups with additional instances on demand.

BIS API Integration, a component of BIS API Gateway, is built for the creation of API interfaces and API enablement. It acts as an interface to applications, using adapters and pre-built connectors for integration with ERP systems and cloud endpoints, and adding APIs with the Web Service and REST adapters. BIS API Integration includes BIS Developer Studio, which is an Eclipse-based development environment for configuring BIS API Integration. BIS Developer Studio offers specialized integration tools for API design, API integration and mediation of APIs.

#### Integration

- Transformation for any to any content
- Handling for any protocol
- Easily scalable

#### Security

- ICAP Support (AV/Quarantine feature)
- All modern and legacy security aspects are part of the BIS platform in order to mediate between any internal resource

#### Full Lifecycle Management

- Easy API modeling and creation approach or integration with native API design tools
- Simple mock creation with one-click data generation
- Not only mediation, but also integration in the same, simple, way
- Fast versioning, provisioning or consumption from the same UI

#### Control and Governance

- Content-based routing, blocking and processing
- Automated API testing and auditing for quality assurance

#### Administration

- Perform Google-like searches to assist with monitoring data
- Easy scrolling on the timeline via the time slider

#### Monitoring and Reporting

- Graphical visualization of process sequences
- Monitoring data of all gateways is sent to centralized management



# BIS API Solution: Components

## BIS API Management (UI Layer)

When APIs are integrated or deployed, the BIS API Management (UI Layer) assures security, protection, governance and monitoring of API-based integration processes. The export of flexible metrics on API usage allows the utilization for API monetization initiatives. For organizations that would like to provide integrated APIs internally or externally, this component is key to executing their company’s digitalization strategy.

The BIS API Portal is based upon the standard BIS application framework, which provides general portal functions such as user management and rights & role administration. User Management Services (UMS) within the BIS API Portal provide integrated identity management services. Customers who already have their own Identity Management (IDM) solution can use UMS to ensure integration with a third-party IDM through LDAP, SAML, oAuth2.0 or other standard protocols. BIS Navigator is a part of the BIS API Portal for making master data management easier.

### Integration

- Identity management integration
- Manipulation of operations, headers, parameters

### Control and Governance

- Content-based routing, blocking and processing
- Quality of service monitoring and adjustment

### Security

- Multi-level policy management
- Communication protocol-based security (TLS, Header)

### Administration

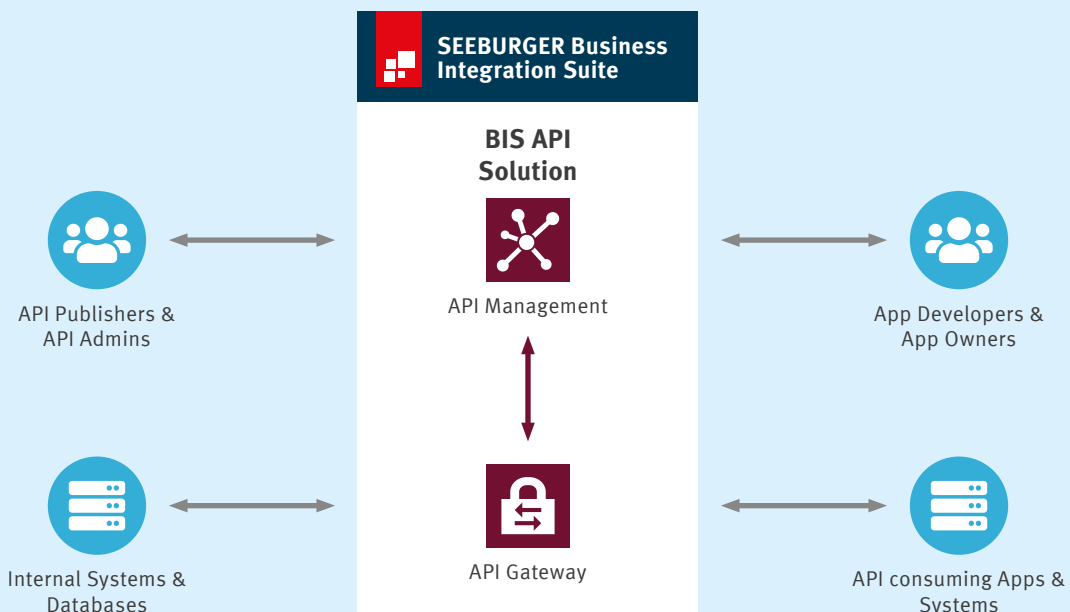
- API discovery and catalog
- Centralized gateway management

### Full Lifecycle Management

- API products
- Visibility split

### Monitoring and Reporting

- End-to-end graphical visualization of process sequences
- Alerting and metrics framework





## BIS B2B Solution: Digitalize Business Processes with Partners

The electronic exchange and automatic processing of business documents according to industry and cross-industry standards is critical in digitalization. Intensifying digital business relationships with all business partners – via the use of BIS B2B Solution – will help your organization to run more efficient processes and thus to become more profitable.

### One platform for all B2B/EDI integration scenarios

With BIS, business integration is ready-to-run! BIS supports all current and future industry requirements with a modular solution approach.

**Modular B2B industry solutions:** Benefit from our 35 years of business integration experience bundled into our pre configured and standardized industry solutions.

**Content for all industries and regions:** Our unique directory of more than 16,000 ready to run partner maps drastically reduces project efforts.

**API-led B2B integrations:** Extract and deliver real time information with B2B integration of API capabilities.

**ERP connectors:** Depending on the interface of your ERP, SEEBURGER delivers the pre configured connectors with mappings to support new integrations. Or switch from one ERP system to another with no additional efforts.

**Transparency for business units:** Flexible monitoring options provide role based views for different business users.

**Connect small partners:** Our modern WebEDI solution enables the smooth integration of smaller suppliers through a web portal.

### The advantages

Efficient B2B processes offer enormous potential for saving time and money, as well as more stable business relationships. Companies need a B2B solution that integrates business partners of all sizes (B2B/EDI or by providing smaller partners a WebEDI solution) and supports the exchange of various formats and protocols. The SEEBURGER BIS B2B Solution meets these requirements:

#### ✔ Complete B2B/EDI libraries

Fast and reliable implementation of a B2B/EDI system with pre configured processes and mappings for most industries.

#### ✔ Just a mouse click away

Connection of additional partners via configuration instead of development.

#### ✔ Reduce your Total Cost of Ownership (TCO)

Through consistent standardization, modern technology and faster onboarding cycles.

#### ✔ Proactive Incident Management

Flexible configuration for error flows including integration with third party monitoring and incident management systems.

#### ✔ Partner Onboarding and self service functions

Tools for the efficient automated onboarding of B2B trading partners including compliance checks that catch data errors and create a consolidated human readable report.

### Pre-configured B2B industry solutions

Save effort, and a lot of time, with less manual configuration. The SEEBURGER BIS B2B Solution addresses all industry-specific requirements and communication protocols for connecting and digitalizing processes with B2B partners through pre-configured solutions for the following industries:

- Consumer products and goods and discrete manufacturing
- Retail
- Automotive
- Machinery and Plant Construction
- Utilities
- Oil, Gas and Chemicals
- Healthcare & Life Science
- High Tech & Electronics
- Financial services including banking & insurance
- Logistics



## BIS B2B Solution: Components

Typically, the most important business partners are connected via B2B/EDI. This requires a comprehensive and feature-rich B2B Gateway, enhanced by a portal/cloud application for the efficient B2B management of the often numerous important business partners.

### BIS B2B Gateway

The SEEBURGER BIS B2B Gateway takes over the routing and the processing/conversion of B2B/EDI messages in accordance with industry standards and contains the following components:

#### Support of all key data formats

- EDI standards: UN/EDIFACT, ANSI X.12, Tradacoms, VDA, RosettaNet, HIPAA, SWIFT, EAIJ...
- Generic syntactic standards: XML, CSV, EDIFACT, Flatfile, SWIFT...

#### Connectivity for all key communication protocols

- EDI over Internet AS2, AS4
- ODETTE file transfer OFTP/OFTP2
- International VAN services and X.400 networks
- Web-Services (SOAP and REST), RosettaNet (RNIF), ebXML (ebMS)
- Generic protocols: FTP/S, SFTP, HTTP/S, JMS/ESB

#### Connectivity for all key application interfaces

- All ERP systems
- SAP connection via tRFC, RFC, SAP PI/PO, SAP IS, APIs
- Connection to any enterprise applications via JMS, JDBC, File, SFTP, FTP/S, HTTP/S, APIs

#### Business tracking & reporting

- Tracking of messages
- Statistics and analysis
- Expectation monitoring





# BIS B2B Solution: Components

## BIS B2B Management

Set up and maintain B2B connections with the management applications of the SEEBURGER BIS B2B Solution, which offers a comprehensive set of features that can be combined to solve complex business processes that deliver real business value:

### Onboarding with the Community Management Application (CMA)

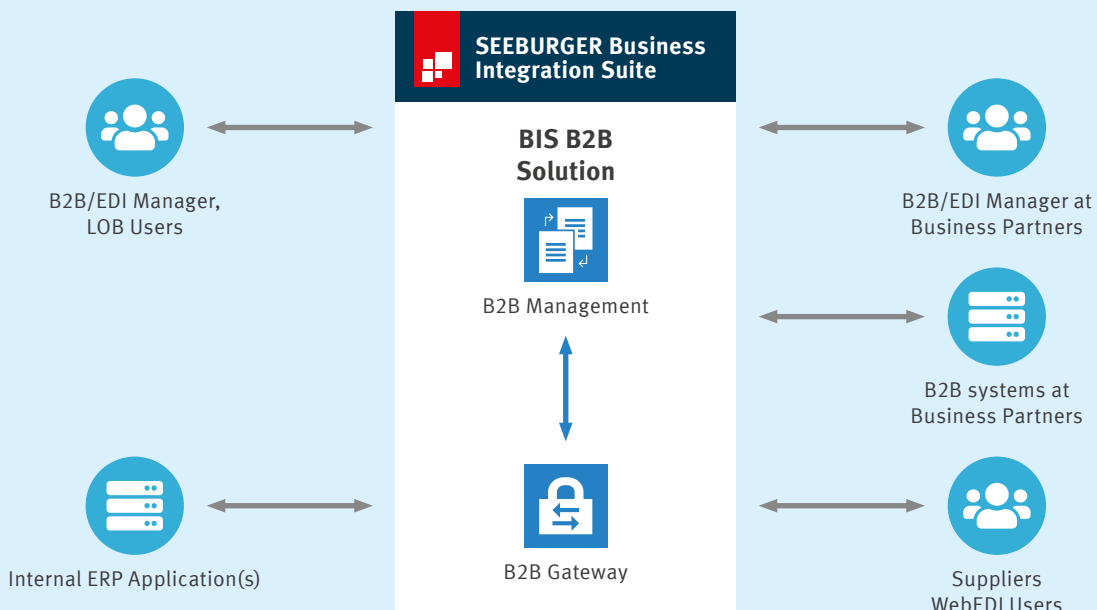
Offer comprehensive features for the administration of B2B processes, campaigns and communities. The solution supports the complete process of onboarding new partners from qualification over message validation to the communication self-testing. The API Interfaces of the CMA application allow for a smooth integration with the B2B Gateway and with external applications where partner master data is stored.

### External facing EDI services for your suppliers (WebEDI Supplier Portal)

Quickly and easily connect with smaller partners in our portal, which is configured as a cloud service. The WebEDI Supplier Portal supports the automated processing of all document types, from orders to invoices.

### Engineering & Product Data Exchange (EPX)

For the engineers in the company, EPX offers a Web GUI for the exchange of CAD/CAM data in accordance with the industry standard ODETTE ENGDAT/ENGPART.







## BIS IIoT Solution: From the shop floor to business process integration

Industry 4.0 and the Industrial Internet of Things (IIoT) offer companies enormous potential for more productivity and greater process reliability. Your competitive advantage depends on having the ability to translate IIoT into new B2B processes.

### One platform for all IIoT integration scenarios

For companies pursuing an Industry 4.0 strategy, the implementation can be quite complex. The real world of things, like machines and robots, must be connected to legacy backbone-systems (ERP/MES/PLM) and the cloud. The BIS IIoT Solution integrates data from the shop floor to a digital platform, making data available to connect with smart services.

The BIS IIoT Solution supports the industry 4.0 standards like OPC Unified Architecture (OPC UA) and associated XML-based companion standards to secure communications and the quality of the core master data and interoperability with new data spaces.

### The advantages

The SEEBURGER BIS IIoT Solution supports all integration aspects of an Industry 4.0 environment:

#### ✓ IIoT & Asset Integration

Build a bridge between digital twins and internal and external business processes. The SEEBURGER BIS IIoT Solution offers the technical foundation for all data integration tasks with modeling and integration options, as well as a comprehensive set of communication adapters.

#### ✓ IIoT Data Standards

The SEEBURGER BIS IIoT Solution uses standardized data models (E.g. AutomationML, AASX, Open API) as well as application specific standards provided by business partners to secure interoperability in data exchanges between enterprises and domain models.

#### ✓ IIoT Service Integration & Orchestration

The SEEBURGER BIS IIoT Solution is based on cloud-native architecture to secure an end to end information logistics from asset to data hub environments (cloud/fog/edge). This includes event-based integration of pipelines and microservices, as well as service-based integration approaches bridging proprietary interfaces of engineering and manufacturing data backbones into new business processes.

### Evolutional Digitalization

Secure your digitalization investment and modernize your manufacturing processes with business integration solutions. The BIS IIoT Solution extends your B2B integration capabilities from ERP-based data interchanges to new IIoT- and smart services-based data interchanges.

# BIS IloT Solution: Components

The SEEBURGER BIS IloT Solution supports companies that intend to solve Industry 4.0 integration tasks. The BIS IloT Gateway and BIS IloT Management components connect the business world with the machine world, and they convert proprietary interfaces into standard formats in order to establish a solid foundation for all your integration projects.

## BIS IloT Gateway

BIS IloT Gateway collects and stores data from IloT devices, device management or control systems, and make data available to applications at the planning and administration levels while providing functions for analysis and process control.

### Integration of IloT devices (assets)

- Creation and management of assets (management layer, communication and service interfaces)

### Integration of data and applications

- Backend application integration: SAP ERP, PLM, MES, JDBC:SQL-DB, JMS ESB...
- Data integration for JSON, XML including OPC UA Comp. Spec. (B2MML, AutomationML etc.)
- API for pipeline and connector integration and management

### Process support and security

- Business process orchestration and implementation
- IloT data storage/aggregation for analysis and visualization
- Transport security (SSL/TLS)
- Authentication, encryption, certificates (PKI)

## BIS IloT Management

BIS IloT Management bundles a number of web-based applications for the management of APIs and services of the IloT devices in production lines or in the field. This component offers role based features for asset and process data management, configuration, monitoring and analysis.

### Asset & IloT service configuration

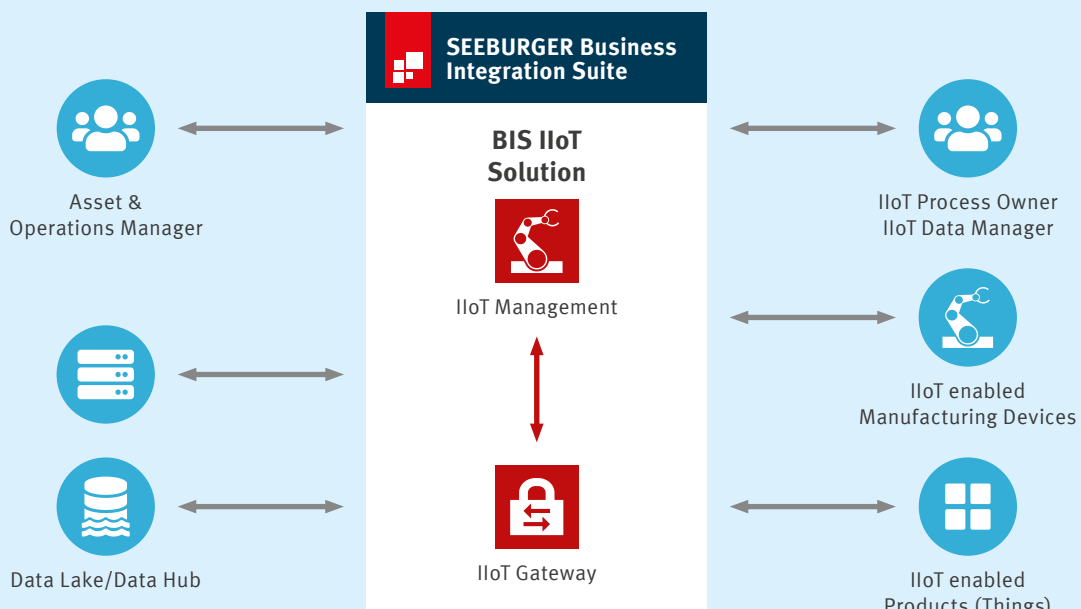
- Creation and management of assets (management layer, communication and service interfaces)

### Process and data management

- Asset Information Management
- Service configuration and management

### Monitoring, Tracking and Alerting

- Data Tracking and visualization
- Interaction Monitoring on dashboards and alerting





# BIS E-Invoicing Solution: Automated, paperless invoice processing

The SEEBURGER BIS E-Invoicing Solution addresses all aspects and variants of the electronic exchange of invoices, including inbound and outbound invoices.

## One platform for all standard, global E-Invoicing formats

E-invoicing initiatives have emerged in many countries to simplify the exchange of invoice data between companies (B2B) or between companies and authorities (B2G), as well as sales tax data transfers (B2T) to tax authorities. E-invoicing standards are diverse, often prescribed by law and based on EDI formats such as EDIFACT, ANSI, XML, Tradacoms, VDA, CSV and flat files.

<b>ZUGFeRD/Factur-X</b>	Hybrid-Invoice (B2B/B2G/B2C)
<b>XRechnung</b>	Germany (B2G)
<b>CFDI</b>	(Comprobante Fiscal Digital por Internet) Mexiko (B2B/B2G)
<b>SII</b>	(Suministro Inmediato de Información del IVA) Spanien (B2T)
<b>Facturae</b>	Spanien (B2G)
<b>NAV</b>	(Nemzeti Adó- és Vámhivatal) Hungary (B2T)
<b>Chorus Pro</b>	France (B2G)
<b>FatturaPA</b>	(Sistema di Interscambio, SdI) Italien (B2G/B2B)
<b>Peppol International</b>	(B2G/B2B)
<b>ebInterface Austria</b>	(B2G)

## The advantages

The SEEBURGER BIS IIoT Solution supports all integration aspects of an Industry 4.0 environment:

- ✔ **Lower costs and faster ROI**  
Up to 80% savings
- ✔ **More efficient processes & greater compliance**  
Via automation and broader format support
- ✔ **More security**  
Encrypted transfer methods
- ✔ **Better cash flow**  
Immediate invoice delivery
- ✔ **Complete transparency and fast accounting**  
Automated processing with workflow-based approval processes
- ✔ **Worldwide on the safe side**  
Support of all relevant E-Invoicing formats

## E-Invoicing directly in SAP

SEEBURGER SAP-certified solutions extend SAP with functions for convenient invoice processing directly in SAP.

With SEEBURGER Purchase-to-Pay, SAP users with a high invoice volume receive a complete process for the integrated processing of incoming electronic and paper invoices. Plus, SEEBURGER smart eInvoice creates electronic invoice formats, including XRechnung and ZUGFeRD, directly in SAP for accounts receivable processing.

# BIS E-Invoicing Solution: Components

The E-Invoicing Gateway supports B2B/EDI invoices as well as PDF invoices, and E-Invoicing Management ensures consistency in all inbound and outbound invoice processes.

## BIS E-Invoicing Gateway

The BIS E-Invoicing Gateway receives, sends and stores electronic invoices, makes them available to back-office applications and offers functions for process control and analysis.

### Support for all relevant E-Invoicing standards

- International invoicing standards
- Conversion of any E-Invoicing formats
- Creation of PDF documents for example in the ZUGFeRD format
- Creation and validation of electronic signatures

### Support for all relevant E-Invoicing standards

- EDIINT AS2/AS4, OFTP, FTP/S, SFTP, HTTP/S
- International VANs, Web-Services, Rosettanet, ebMS and many more
- Delivery via managed file transfer methods, for example email with secured attachments and via Peppol

### Support for all relevant application interfaces

- Connection to all ERP systems
- SAP connection via tRFC, SAP PI, SAP HCI
- Integration with electronic archiving systems

### Invoicing analytics

- Tracking of invoice documents
- Central storage and analysis of invoice data

## BIS E-Invoicing Management

The Community Management Application (CMA) is also available for E-Invoicing with its partner onboarding features. The BIS E-Invoicing Management is supplemented by additional applications, which are offered as SEEBURGER Cloud Services:

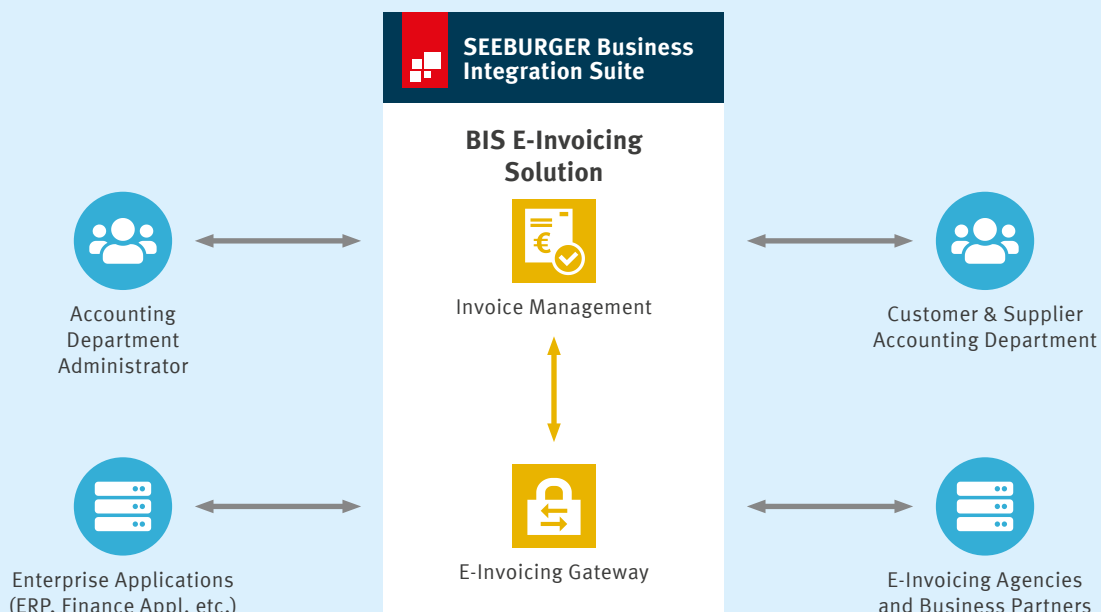
### SEEBURGER Invoice Portal Cloud Service – Centrally manage inbound invoices

Medium-sized companies as well as companies with a heterogeneous IT environment nowadays need a central and easy to use cloud/portal solution for all types of electronic invoices. These are centrally managed here, accounting and (multi-level) approval are conducted and the subsequent handover towards the final booking takes place.

### SEEBURGER Invoice Delivery Cloud Service – Secure delivery of outbound invoices

With the SEEBURGER Invoice Delivery Cloud Service, E-invoices can simply and securely be delivered in various E-Invoicing Formats such as ZUGFeRD, Factur-x, XRechnung and PDF via Peppol and e-mail.

The service is equipped with interfaces for integration with the BIS E-Invoicing Gateway, but it can also be directly connected with your company’s invoicing application.



# **BIS ERP Integration: Your Foundation for Process Digitalization**

As the foundation for all your business processes, your ERP system is critical for value generation. New digital processes and integration scenarios depend upon seamless integration with the ERP system and require:

- Adapters for ERP systems with various interface technologies, such as database access (JDBC:SQL), file interfaces, ESB interfaces (JMS) and APIs (REST, SOAP, Java)
- iSeries Connector (native RPG application) for imports to and exports from all IBM iSeries applications

## The advantages

### ✔ Pre configured content for ERP systems

SEEBURGER ERP process mappings and configurations are developed according to experience from thousands of projects. Reduce your connection effort by up to 80 percent and ensure a quick ROI.

### ✔ Simple monitoring and analysis

BIS delivers real end-to-end monitoring of messages and processes, including the successful booking in the ERP system.

### ✔ Transparency for business units

Monitoring applications allow business users to track the processing status of all invoices.

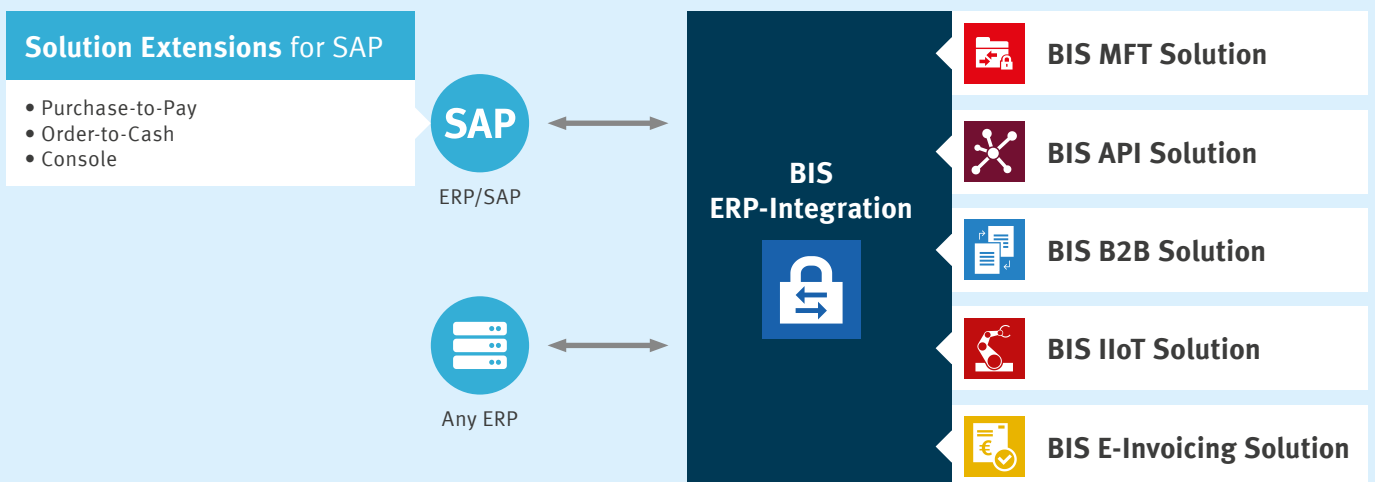
### ✔ SAP®-certified integration with SAP S/4HANA®

SEEBURGER is a Silver Partner with SAP, and our solutions have been SAP-certified since 1995 with more than 50 individual certifications. The SEEBURGER Solution Extensions for SAP are modular software components, which can be used standalone.



## ERP connections for all integration scenarios

The BIS ERP connection, a key part of many integration scenarios, is required for B2B/EDI integration and E-Invoicing.

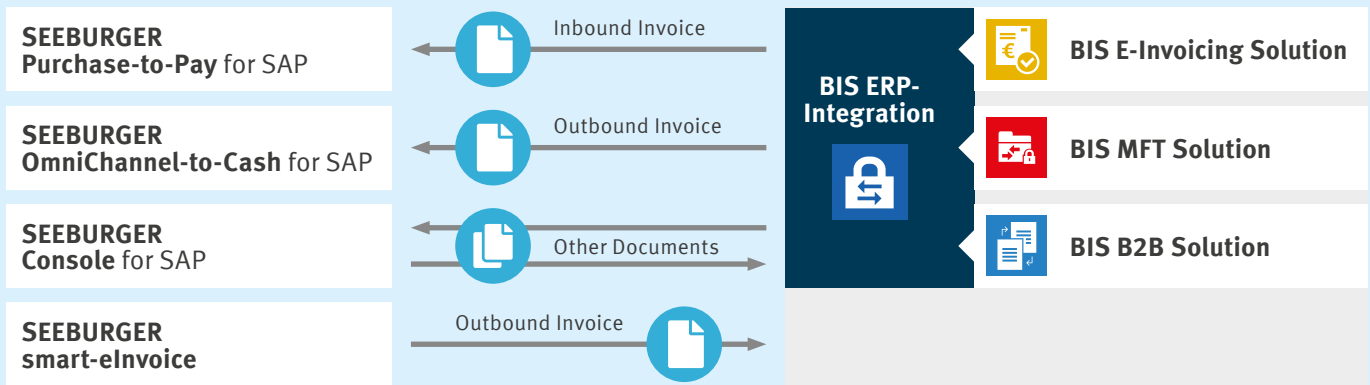




# **BIS Process Integration for All ERP Systems**

In addition to supporting ERP integration with SAP, SEEBURGER BIS supports ERP integration with other major vendors, including but not limited to:

Oracle Fusion Cloud	Microsoft Dynamics 365
Oracle E-Business Suite	IFS
Workday	APplus
Infor	proALPHA
QAD	Sage b7
Abas	PSIpenta
Oxaion	



## **SEEBURGER Purchase-to-Pay**

**Automatically process inbound invoices in SAP, including review and approval workflows**

Automate the processing of inbound invoice collections in SAP: logging of all processing and approval steps, monitoring, invoice flow analysis, interface archiving. Active information and invoice approval on a mobile device or with a SAP Fiori application.

All BIS E-Invoicing formats and channels are supported (EDI-, XML, ZUGFeRD, PDF, paper and fax invoices).

All invoices (FI, MM) are checked in accordance with uniformly defined rules, all invoice workflows are actively monitored, and all deviations/ exceptions are displayed.

## **SEEBURGER Console**

**Central business monitoring of all document types**

SAP users are able to track incoming and outgoing electronic documents in IDoc Format in the SAP system and monitor processing times with the SEEBURGER Console.

The configurable document monitoring sends a notification in the event of a problem and offers the SAP business users features to quickly correct errors and ensure complete processing – without having to contact the SAP administrator.

Investment in the SEEBURGER Console pays for itself, particularly in the case of time-critical processes, in which erroneous, delayed or missing EDI messages may involve penalties or financial losses.

## **SEEBURGER Order-to-Cash**

**From order processing to automatic sending of invoices**

Automation of order processing and booking in SAP: Logging of all processing steps, monitoring, analysis of the order flow, archiving interfaces and active information per mobile device.

Support of all order entry channels (EDI, XML, PDF, papier and fax orders): All orders are checked and processed in accordance with uniformly defined rules – up to the creation of the outbound invoice.

Delivery of the outbound invoice is made possible through the BIS E-Invoicing Solution in EDI, XML, PDF, ZUGFeRD formats or in paper form, for example, via the integration of a Lettershop service provider.

## **BIS Community Management and Digital Documents Tracking**

SEEBURGER BIS offers several user group applications that allow business departments to maximize the value of digitalization projects. One such application is the BIS Community Management Application (CMA), which facilitates the governed and fast onboarding of business partners. Additional document-centric monitoring apps provide transparency and control over the flow and exchange of documents with self-service capabilities.

### **BIS Community Management Application**

#### **Collect, integrate and keep data up to date**

BIS offers user group applications that allow business departments to maximize the value of their digitalization projects. A major application for digitalization purposes is the BIS Community Management Application (CMA) for governed and fast onboarding of business partners. Collect, integrate and keep data up-to-date with CMA, which combines a flexible and powerful form generator for campaign and task management. Business users can easily configure simple forms as well as more complex, multi-page surveys with wizard driven page flows. Campaign surveys and reminders are sent automatically to participants, and the results are made available in a web interface and in a downloadable CSV format. Master campaign data can be entered manually or imported via Excel.

**BIS CMA can be deployed as a stand-alone solution, or you can book it with just a few clicks in the SEEBURGER Cloud as a SaaS solution.**

Connection to the BIS Integration Server is established via the CMA REST API, which accelerates the implementation of process-controlled workflows. Interactive steps (CMA forms and tasks) and automatic process steps (data integration) can execute in combination. In addition to BIS data, the CMA can use data sources from any enterprise application, such as an ERP system.

### **The advantages**

#### **✔ Efficient and cost effective onboarding**

Accelerate the activation of business partners, employees and services with considerably reduced effort.

#### **✔ Improve data quality**

Improve your data quality with “stay up-to-date” campaigns and form-based workflows for notifications.

#### **✔ Increase customer satisfaction**

Provide business partners with easy access to information and features at any time as a measure of improving customer service.

#### **✔ Increase employee satisfaction**

Allow your company’s own business units to set up ad hoc and automated data exchange channels via self-services – without relying on IT.

### **Digital Documents Tracking**

#### **Add visibility to document flows**

Business departments are more focused on document flows than on data flows, because they are less interested in the technical status of an integration process than in the status of a specific document exchanged with a specific business partner. BIS addresses document exchange requirements with semantical monitoring apps. These apps address the key question asked by business users: What is the status of a document that is critical for doing business with a specific partner? Companies report that BIS semantical monitoring apps have reduced their time searching for information within a digitalized document by 95% in comparison to their previous solution. This statistic includes cases of error resolution when errors are due to corrupt content.

The two main SEEBURGER applications for digital document tracking are called Business Tracking, which is as easy to use as an Excel spreadsheet, and Message Tracking for more advanced use cases. Message Tracking add-ons support users with embedded analytics and automation capabilities. The BIS capability of consuming content processed on the platform into an analytics solution or data lakes allows for the re-usability of data for further use cases.

#### **✔ Increase process reliability**

Ensure compliance with industry standards by using pre defined and automated executing structures.

#### **✔ Create transparency**

Ensure that a positive attitude of “being informed” emanates from your organization with the automatic creation and distribution of large data reports with interactive search options.






#### **✔ Recognize and react to trends faster**

Continuously track calculated operating numbers over the course of time and perform data comparisons with expectations and thresholds. The quicker you uncover any undesirable circumstances, the more quickly you can take action.

# **SEEBURGER Cloud Services:** **Accelerate digital transformation in the cloud**

SEEBURGER Cloud Services offer you fast and secure transfers of high-quality data as an all-round package in the cloud. Our ready-made industry solutions enable you to quickly get started with B2B/EDI, A2A/EAI and API integration, regardless of the technology status and geographical distribution of your business partners. You can choose between different operational models and combine configurations of standardized public or private cloud models with individual service level agreements. We also support hybrid cloud models, in which we flexibly combine functionalities of our B2B/EDI Fully Managed Service with your on-premise solution.

**With SEEBURGER, you have the freedom to choose how you'd like to operate BIS:**

 On-premises	 Fully Managed Service in the SEEBURGER Cloud	 iPaaS in the SEEBURGER Cloud	 Hybrid cloud	 iPaaS in a hyperscaler (AWS, Azure, GCP)
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## **In-house or Cloud – Which is the better choice?**

The line of business usually has little interest in the mode of operation (on-premises, Fully Managed Service, iPaaS or hybrid), but it does have business requirements that need to be covered. From their perspective, it is always a “service.”

**A cloud solution as an alternative to in-house operation should be considered, especially in the following scenarios:**

1. Staff shortages and/or dependency on specific employees
2. Pending investments in new solutions or significant expansions
3. Increasing operational requirements (true 24/7 operations) cannot be met with current staffing levels
4. A large number of partners or processes need to be connected or implemented
5. TCO of in-house operation (HW, SW, staff training, support) exceeds the costs of a transparently calculable cloud service)

## **Cloud is one of the most important elements of digital transformation**

### **Cloud Services**

- ✔ are the ideal basis for easy access to IT resources
- ✔ support digital transformation strategies
- ✔ provide ready-to-use, standardized, scalable, and ad hoc process modules with clearly defined interfaces
- ✔ give the line of business more flexibility and shorten the time-to-market  
→ **more flexible!**
- ✔ accelerate the so-called “old economy”  
→ **quicker!**
- ✔ are the initial drivers for new disruptive business models  
→ **more innovation!**

## **Growing IT security requirements are increasingly difficult to meet Cloud certification/security**

The following applies to all SEEBURGER cloud services:

1. ISO 27001 certified data centers in Germany, USA and China
2. ISO 27001 certified ITIL-based operational procedures
3. TISAX® certification for automotive industry requirements
4. ISAE 3402 (SOC 1) Type 2 audit for premium services
5. Services based on our own SEEBURGER Business Integration Suite
6. Operation exclusively by our own experts 24/7
7. Global footprint with own international service teams

More than 3,000 customers from all over the world already rely on SEEBURGER cloud services.





# SEEBURGER Support and Remote Services

Integration is one of the most business-critical areas of an IT landscape. Smooth and frictionless operation of an integration platform directly affects business continuity. Therefore, SEEBURGER goes beyond what companies typically expect from a business application vendor. Our related service offering provides different support levels plus high-value remote services. This offering is directed to customers that select the on-premise or iPaaS deployment model.

## SEEBURGER Support Levels

The following table provides an overview of our support level offerings, which are specifically built for customers that run the BIS platform on premises:

	Basic	Advanced	Premium	Mission Critical Support
Service time	Mo-Fr 9:00-17:00*	Mo-Fr 7:00-20:00*	24/7	24/7 with escalation route
Max. reaction time by priority	4h / 8h / 2 days / 4 days	2h / 4h / 8h / 2 days	1h / 2h / 8h / 1 day	30 min / 2h / 8h / 1 day
Contact	Service Desk		Service Desk	Priority Line
Added Value			Preferred Counterpart	Preferred Counterparts  Technical Account Manager
Knowledgebase and “Single Point of Contact” (SPOC) Maintenance: Access to Software Updates				

\*3 time zones available (EST/Atlanta, CET/Bretten, CST/Shanghai)



# SEEBURGER Support and Remote Services

## SEEBURGER Remote Services

This additional service offering is designed for customers that intend to include SEEBURGER’s skilled specialists and highly-trained experts as virtual members of their own teams.

### Our SEEBURGER team focuses on behalf of your integration team on:

- ✔ Intelligent monitoring of the platform based on active alerting
- ✔ Taking over operational tasks to reduce the workload of your team
- ✔ Providing expertise, advice and resources to meet changing requirements
- ✔ Assuring best-fit service levels on behalf of our customers compliant with their business demands

### This results for our customers in:

- ✔ Raising the overall reliability of the platform operation to a maximum and minimizing negative business impact
- ✔ Reducing costs required for internal experts and specialists to operate SEEBURGER’s platform in the best possible way
- ✔ Refocusing integration teams on business innovation (instead of application operation)

## SEEBURGER Remote Services are designed to meet individual business requirements

### The Remote Alerting Service offers:

- 24/7 surveillance of your SEEBURGER system focused on your related business processes and the overall performance of your integration landscape
- Selective alerting for critical business processes
- The maximum of capabilities to monitor each SEEBURGER application

### Your benefits include:

- ✔ Simplification of the operation
- ✔ Early detection of failures and performance issues
- ✔ Proactive avoidance of potential malfunctions and outages
- ✔ Elimination of costs for third-party system monitoring tools

### Build up on the Remote Alerting Service, the Remote Management Service offers in addition:

- Operating assistance for your integration platform based on different service level options
- Detection and handling of errors, as well as immediate response to performance issues
- Full coverage of your company’s business hours
- Disaster recovery assistance
- Best-practice advisory for optimization
- Active problem management

### Your benefits include:

- ✔ Risk reduction through higher operational reliability
- ✔ Offload operational tasks of key administrators
- ✔ Outsourcing of administrative tasks reduces TCO



## BIS: A powerful all-in-one platform for all integration scenarios

SEEBURGER BIS is based on open standards, developed in Java and available for operation on premise with Microsoft Windows or Linux, or in the cloud with Amazon Web Services, Microsoft Azure or Google Cloud Platform. BIS also supports virtualization platforms, such as VMware, or open source platforms, such as OpenStack, and is also available as a service from the SEEBURGER vendor cloud.

BIS is continuously maintained, updated to the latest security standards and developed by the SEEBURGER development team with no third-party patchwork. Our agile development process includes continuous delivery and ensures that new market and customer requirements are promptly supported. In addition to building customer feedback, knowledge and experience from SEEBURGER Cloud operations directly into BIS, our platform follows a practice-oriented product design that satisfies all functional and daily operational requirements.

### BIS platform advantages

- ✔ **Cover all business integration requirements with one central platform**  
 BIS synergistically covers all integration requirements for all MFT, B2B/EDI, API/EAI, IIoT, E-Invoicing and ERP scenarios by integrating into your IT operating environment.
- ✔ **Secure operations and comply with global regulations**  
 BIS offers all the necessary tools and interfaces to ensure compliance with regulations, including E-Invoicing. Document-centric, self-serviceable monitoring apps provide additional transparency and control over the entire flow and exchange of content and documents within BIS.
- ✔ **Achieve high scalability with flexible deployments**  
 Due to its modular service-oriented design, the BIS platform can be distributed across several servers and network zones. This allows for flexible setup while maintaining maximum performance, availability, reliability, security and functionality.
- ✔ **Role-based user experiences**  
 From IT specialists, who develop new integration scenarios, to business unit power users, who resolve issues and initiate the integration of new partners, BIS user interfaces are customized by role for better user experiences.
- ✔ **Pre-defined, modular solution packages**  
 Reduce time, effort and reliance on IT staff with pre-packaged industry-specific content, templates, mappings and connectors to ensure a quicker ROI.
- ✔ **High-performance development tools**  
 Implement complex business requirements via the graphical orchestration of communication and data integration components that integrate with SEEBURGER Cloud Services.

### Transform IT into a business enabler with BIS

BIS and its modular solutions provide industry-standard content and self-service options that enable IT teams to meet the digitalization requirements of a complex world.

