

Reading Sample

This sample chapter introduces integration options, extensions, and commonly used APIs for the four core SAP Billing and Revenue Innovation Management components: SAP Billing and Revenue Innovation Management, subscription order management; SAP Convergent Charging; SAP Convergent Invoicing; and contract accounting. In each section, you'll learn how to set up, create, and test all of the relevant APIs and integrated objects for that particular component. You'll also get an overview of the general purpose and function of each extension and interface component



“Extension and Connectivity”



Contents



Index



The Authors

Jyoti Prakash Pathak, Maniprakash Balasubramanian, Shovanjit Gangopadhyay, Clement Sanjivi, Andreas Tan

SAP Billing and Revenue Innovation Management: Functionality and Configuration

588 pages, 2nd edition, 2022, \$89.95

ISBN 978-1-4932-2277-3



www.sap-press.com/5542

Chapter 8

Extension and Connectivity

Various extension and interface components are delivered as part of SAP Billing and Revenue Innovation Management. Integration is offered in different forms—SOAP and REST (OData)—and can be used based on the compatibility of SAP or non-SAP platforms. We'll limit the discussions to the standard, out-of-the-box integration options available as part of SAP Billing and Revenue Innovation Management 2021 only.

In an integrated enterprise resource planning (ERP) solution, SAP Billing and Revenue Innovation Management provides connection protocols to enable integrations with various platforms in an echo system. In a scenario where non-SAP platforms are part of the solutions to support the end-to-end business processes and data interchange, such as master data and transactional data, interfaces are critical components for systems integrations. As of now, SAP has defined the SAP API Business Hub (<https://api.sap.com>) as the central place for publishing all external application programming interfaces (APIs). The publishing of APIs for SAP S/4HANA has started and is updated frequently.

In SAP S/4HANA, you must perform some configurations to enable the APIs to be called or consumed by the external systems. APIs are exposed in SAP S/4HANA in several ways, such as web services and remote function calls (RFCs). SAP supports two types of web services: SOAP and OData services. For OData, you need to enable the OData gateway by calling Transaction /IWFND/MAINT_SERVICE. If the service is available in the backend system, it's possible to configure and test the API in SAP S/4HANA. You also need to define a role and a technical user to use the OData service. For the SOAP API, you also must perform the necessary steps to enable it. Typically, in implementations involving SAP and non-SAP systems, you'll also have a middleware system, such as SAP Process Integration/SAP Process Orchestration or SAP Cloud Platform Interface to manage the integration and application security requirements.

Figure 8.1 showcases a baseline overview of API integration with SAP S/4HANA and SAP S/4HANA Cloud with the boundary as SAP or non-SAP applications.

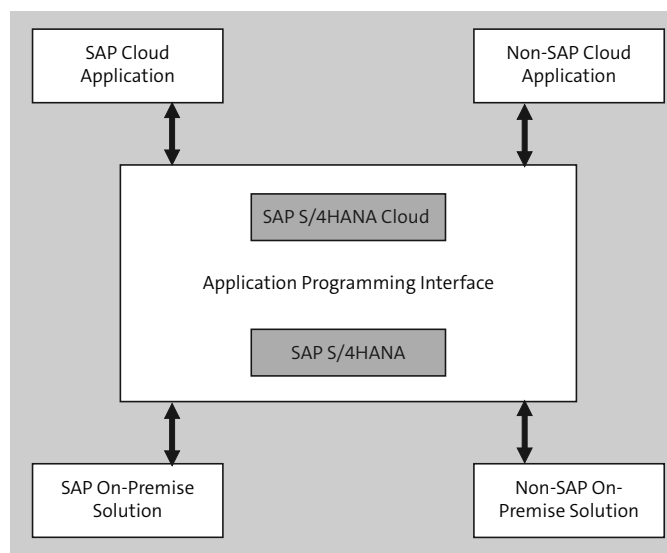


Figure 8.1 Overview of API Integration with SAP and Non-SAP Applications

In SAP S/4HANA, you must do some configuration steps to test the capability of APIs. The methods are also dependent on the type of APIs. If the API is of type OData, you need to use an OData gateway by calling GUI Transaction /IWFND/MAINT_SERVICE. If the service is available in the backend system, it's possible to configure and test the API in SAP S/4HANA. You also need to define a role and a technical user to use the OData service. If the API is a SOAP API, then you must perform the steps to configure SOAP APIs. In the following sections, we'll briefly discuss some of the most-used standard APIs available for each module of SAP Billing and Revenue Innovation Management. To explore the full list of APIs applicable to SAP Billing and Revenue Innovation Management, we recommend visiting the SAP API Business Hub.

8.1 Extension for SAP Billing and Revenue Innovation Management, Subscription Order Management

SAP Billing and Revenue Innovation Management, subscription order management, provides different APIs to support the creation and maintenance of different types of transactions, such as master agreements, solution quotations, subscription orders, partner agreements, and so on. All the APIs provided by SAP can be enhanced to meet the business requirements of your company. SAP Billing and Revenue Innovation Management, subscription order management, also provides web-based user interfaces (UIs) such as SAP Fiori to perform the maintenance of the transactions mentioned earlier. SAP Application Interface Framework is used to monitor interfaces as well as execute error handling. The SOAP APIs can be monitored under the /CMSOM namespace. The following sections cover some of the commonly used objects in SAP Billing and

Revenue Innovation Management, subscription order management, and related API and extension information.

8.1.1 Business Partners

The business partner is one of the core master data objects used in SAP Billing and Revenue Innovation Management. In enterprise solutions, business partner or customer data is one of the master data objects required to perform transactions such as creating solution quotations or subscription orders. It's important that the business partner or customer master is always in sync between SAP and the boundary systems to avoid incorrect transactions that will result in incorrect billing and financial postings. Additionally, in an integrated systems environment, it's always recommended to use a one-direction flow to create and change business partner information from SAP S/4HANA to the front office (e.g., Salesforce.com, an ecommerce platform, etc.) to avoid data inconsistency issues. Even though SAP S/4HANA can be used to manage or to govern business partner/customer data, SAP S/4HANA can also be used to integrate with non-SAP application within the ecosystems. SAP S/4HANA offers various integration options and extensions. The native business partner API in SAP S/4HANA enables you to create, read, update, and delete (CRUD) data related to customers and suppliers.

If you leverage OData services, you can use the standard synchronous OData-based inbound API API_BUSINESS_PARTNER. To create a business partner record, you need to provide values for mandatory fields or attributes such as business partner roles, name, address, and so on. Additionally, you need to provide values to populate optional/custom attributes in the payload before calling the API. These steps are applicable for all API calls. If the API is successfully executed, you should receive a response with code "201" with the corresponding SAP S/4HANA business partner number. In case of any failure due to validation or incorrect namespace, you'll receive a standard error message with error code to troubleshoot further.

In addition, you can use the standard function module BAPI_BUPA_CREATE_FROM_DATA to create a business partner with the required role and information in SAP S/4HANA from external sources. The standard function module can be used to generate a custom web service that can be consumed by non-SAP platforms to create business partner records.

8.1.2 Contract Accounts

The contract account is another primary master data object managed as part of the SAP Billing and Revenue Innovation Management solution. Contract accounts typically hold payment-related information for a customer (e.g., payment terms, methods, bank information, etc.). SAP offers a set of APIs for contract accounts that can be used to create or read records from SAP S/4HANA.

To create, retrieve, or update contract accounts from external non-SAP system, SAP provides a synchronous SOAP service: FKCMANAGECONTRACTACCOUNT. Alternatively, you

can use the standard SAP S/4HANA function module `BAPI_CTRACCONTRACTACCOUNT_CR1`. The external system should provide mandatory parameter details such as business partner ID, payment terms and conditions, and so on to maintain contract accounts in SAP S/4HANA.

Typically, an order-to-cash solution requires a validation of or information about payment-related input from SAP S/4HANA while creating a transaction. The read native contract account API in SAP S/4HANA enables you to retrieve a list of contract accounts, read contract account details and contract account-business partner relationships, and retrieve the account balance for a contract account.

8.1.3 Subscription Products

A product is another set of master data that is required in SAP Billing and Revenue Innovation Management implementations. Like other master data objects, the product master should be one-directional. In an integrated ERP solution where a non-SAP application also requires master data, we need to identify the primary source system for product maintenance. Once the source system is identified, you can then develop a one-directional flow to manage creation and update of products in integrated systems.

Let's consider an example where a non-SAP application is managed as a source system for product maintenance and data governance. To replicate product information from non-SAP application to SAP S/4HANA, you can use the `API_PRODUCT_SRV` synchronous OData service. This API can be used to create subscription products in SAP S/4HANA with required material attributes such as basic product data, sales organization data, and units of measure. The API can also be used to read and update products in the SAP S/4HANA system. Note that the API doesn't support cross-catalog mapping or managing subscription product-specific data. You can either update subscription-specific settings manually once the product is created in the SAP S/4HANA system or develop a custom program to automate the process.

You can also use standard Business Application Programming Interface (BAPI) `BAPI_MATERIAL_SAVEDATA` to create a new material master record in SAP S/4HANA or to change existing material master data.

If SAP S/4HANA is used as the primary system for product maintenance, then product information should be shared from SAP S/4HANA to non-SAP applications. SAP also provides standard SOAP web service `SubscriptionProductReplicationRequest_Out` to replicate subscription product-specific data from an SAP S/4HANA system to an external system.

8.1.4 Subscription Transactional Data

Now that we've covered the master data integration required to implement SAP Billing and Revenue Innovation Management, this section discusses transactional data. SAP

Billing and Revenue Innovation Management has several sets of transaction types such as master agreements, subscription orders, solution quotes, and so on. Even though SAP Billing and Revenue Innovation Management, subscription order management, comes with the standard SAP Fiori UI to create and maintain these transactions, SAP provides multiple APIs out of the box to enable the integration with third-party systems to maintain (create and update) these types of transactions. Depending on the solution design and business framework, transactions can be initiated in SAP S/4HANA in SAP Billing and Revenue Innovation Management, subscription order management, or in non-SAP applications. If the transactions are initiated in a non-SAP application, you must replicate the transaction details into SAP Billing and Revenue Innovation Management, subscription order management, in SAP S/4HANA. This will ensure that the process of subsequent fulfillment and billing managed in SAP Billing and Revenue Innovation Management can be fulfilled and processed. To maintain the consistency of the subscription contract between the source and the target systems, it's important to capture and process any change events (e.g., extension, cancellation, etc.). In this case, it's from a non-SAP application to SAP S/4HANA.

For transactions that are initiated from non-SAP systems or e-commerce platform, you can use the standard asynchronous SOAP web service `SubscriptionOrderRequest_In` (Technical Name - `II_CRMS4_PRVO_CREATE_IN`) to replicate the subscription order into SAP Billing and Revenue Innovation Management, subscription order management. The API also allows you to create subscription orders and subscription contracts in a single step. SAP provides standard API `CRM_ISX_BTX_API_ORDER_CREATE` for creation of subscription transactions in SAP Billing and Revenue Innovation Management. Because SAP Billing and Revenue Innovation Management transactions follow one order framework, you can use the same API with different transaction types (`PROCESS_TYPE`) to create various subscription transactions.

The solution quotation is another common transaction type used in SAP Billing and Revenue Innovation Management implementations. SAP provides standard OData API `API_BUS_SOLUTION_QUOTATION_SRV` (available as of SAP S/4HANA 1909) to create, read, and update solution quotation objects. In addition, you can use the service to accept solution quotations in a single step, which triggers the automatic creation of follow-up transactions.

The OData service can also be used by external applications to read existing solution quotations in SAP Billing and Revenue Innovation Management. For example, to read an existing solution quotation with Quotation ID – "1025", the sample request URL is `/sap/opu/odata/sap/API_BUS_SOLUTION_QUOTATION_SRV/A_BusinessSolutionQuotation('1025')`.

It's also possible to read a specific quotation line item that exists in SAP S/4HANA, as shown in Figure 8.2.

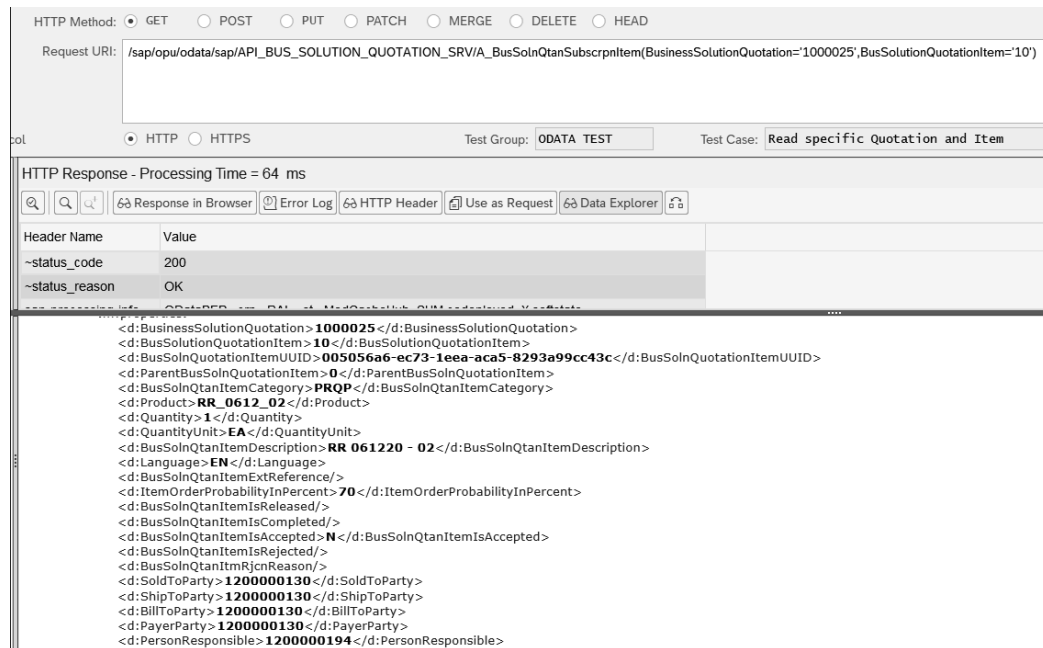


Figure 8.2 Read Solution Quote with Quote ID and Line-Item Number

Most SAP Billing and Revenue Innovation Management implementations are integrated with front-office applications. For that reason, SAP Billing and Revenue Innovation Management provides a standard SOAP web service `SubscriptionContractChangeProcessRequest_In` to manage subscription contract changes. The standard API `CRM_ISX_BT_X_API_CONT_CHANGE` is used to manage contract changes. Based on your change scenarios, you can define the process type (PROCESS) and related process attributes (PROCESS_ATTRIBUTES) to manage change order scenarios. For example, if the external system requests an extension, you can define the process type value as “EXTENSION” along with extension terms (DURATION, UNIT) information. If the external system requests cancellation, you can define the process type value as “CANCEL” along with cancellation request data and cancellation reason (CANC_REQUEST_DATE, CANC_REASON) information.

8.2 Extension for SAP Convergent Charging

SAP Convergent Charging is one of the core components of the SAP Billing and Revenue Innovation Management solution. SAP Convergent Charging and its functionalities are discussed at great length in Chapter 3 of this book. SAP Convergent Charging isn't part of the SAP S/4HANA suite; rather, it's a standalone Java application. SAP Convergent Charging consists of two main components: Core Server and Core Tool. Both require SAP's Java Virtual Machine (JVM) to run. The integrations between SAP Convergent

Charging and other modules of SAP Billing and Revenue Innovation Management (e.g., SAP Billing and Revenue Innovation Management, subscription order management; and SAP Convergent Invoicing) are provided by SAP. The integration doesn't require a separate middleware application.

The following sections provide an overview of how SAP Convergent Charging works and then walks you through some of the SAP Convergent Charging services, which can be consumed by SAP or non-SAP applications.

8.2.1 Overview

SAP Convergent Charging provides web services to perform rating, charging, and other operations. These technical interfaces are hosted by the SAP Convergent Charging Core Server system. Any non-SAP applications that require integrating directly with SAP Convergent Charging must consume these business services via SOAP web services. These web services can be used to manage master data, perform contract provisioning, rate customer usage consumptions, refill prepaid accounts, and so on. Figure 8.3 illustrates an overview of SAP Convergent Charging web services and APIs.

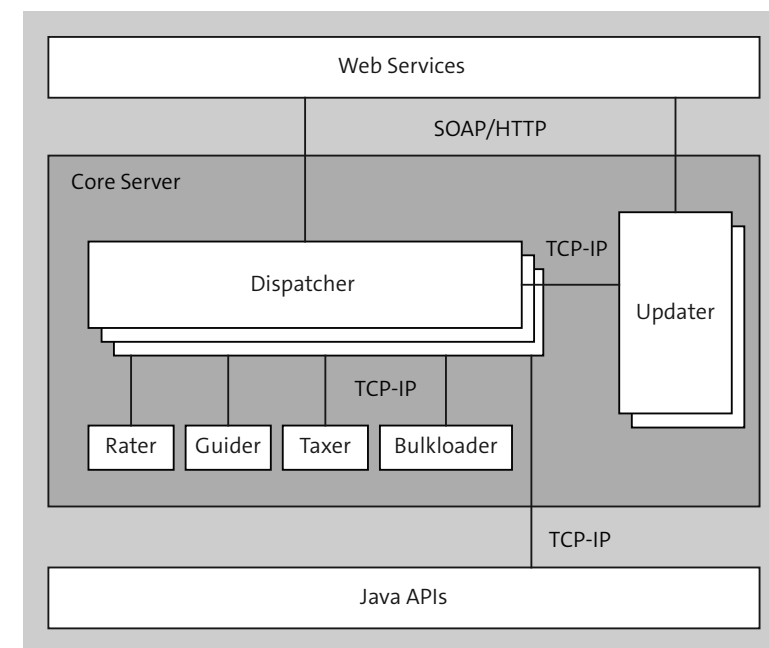


Figure 8.3 SAP Convergent Charging Web Service and Java APIs

SAP Convergent Charging provides several endpoints for accessing web services, which are defined by a Universal Resource Identifier (URI). The URI includes a network address of a specific instance of the SAP Convergent Charging system and a port number dedicated to these communications. Refer to Chapter 3 for detailed information. A sample URL structure of a URI is given as a reference here:

`https://<INSTANCE_HOST_ADDRESS>:<INSTANCE_WS_PORT_NB>/<WS_VERSION>/<WS_TECH_NAME>`

The following is a brief description of the components of the URI:

- **INSTANCE_HOST_ADDRESS** Network address (domain name server [DNS] name or IP address) of the host server of the active updater instance or the dispatcher instance of SAP Convergent Charging.
- **INSTANCE_WS_PORT_NB**
The port number used for web services communications for the target instance.
- **WS_TECH_NAME** Technical name of the web service.
- **WS_VERSION** Version of the web service.

Following are two sample endpoints:

- `http://Your_CC_Updater_Instance_HostName:9081/v2/contractProvisioning?wsdl`
- `http://Your_CC_Dispatcher_Instance_HostName:9180/activation?wsdl`

For a complete list of all available services, refer to the **Web Services Documentation** section at the following URL: <http://s-prs.co/v554201>.

Note that the port numbers for updater and dispatcher instances for SAP Convergent Charging are usually 9081 and 9080, respectively. These port numbers are default values from SAP, but you can change the port numbers while setting up your SAP Convergent Charging application.

Internal Name	Namespace	Description	Type	Name
CO_CRM_ISX_CC_ACTIVATION_SRV	http://activation.ws.highdeal.com/		Consumer Proxy	ActivationServices
CO_CRM_ISX_CC_CATALOG_SERVICES	http://catalog.ws.highdeal.com/		Consumer Proxy	CatalogServices
CO_CRM_ISX_CC_CHARGEABLE_ITEM	http://charging.ws.highdeal.com/		Consumer Proxy	ChargeableItemChargingServices
CO_CRM_ISX_CC_RATING_SERVICES	http://rating.ws.highdeal.com/		Consumer Proxy	RatingServices
CO_CRM_ISX_CC_SUBSCRIBER_MAPPI	http://subscribermappingtable.ws.highdeal.com/		Consumer Proxy	SubscriberMappingTableManagementServices
CO_CRM_ISX_CC_SUBSCRIBER_RANGE	http://subscriberrangetable.ws.highdeal.com/		Consumer Proxy	SubscriberRangeTableManagementServices
CO_CRM_ISX_CC_V1_CATALOG_SERVI	http://catalog.v1.ws.highdeal.com/		Consumer Proxy	CatalogServices
CO_CRM_ISX_CC_V2_CATALOG_SERVI	http://catalog.v2.ws.highdeal.com/		Consumer Proxy	CatalogServices
CO_ISX_ALLOWANCE_MANAGEMENT_SE	http://allowance.ws.highdeal.com/		Consumer Proxy	AllowanceManagementServices
CO_ISX_ALLOWANCE_MANAGEMENT_V1	http://allowance.v1.ws.highdeal.com/		Consumer Proxy	AllowanceManagementServices
CO_ISX_CC_CONTRACT_STATE_MANAG	http://contractstate.ws.highdeal.com/		Consumer Proxy	ContractStateManagementServices
CO_ISX_CC_CTR_PROV_SERVICES	http://provisioning.ws.highdeal.com/		Consumer Proxy	ContractProvisioningServices
CO_ISX_CC_CTR_PROV_SERV_V2	http://provisioning.v2.ws.highdeal.com/		Consumer Proxy	ContractProvisioningServices

Figure 8.4 Configure SAP Convergent Charging Web Service in Transaction SOAMANAGER

All the standard services to integrate SAP Convergent Charging with SAP Billing and Revenue Innovation Management, subscription order management, and SAP Convergent Invoicing are provided by SAP. You can search and configure different integration objects between SAP Convergent Charging and SAP S/4HANA, as shown in Figure 8.4.

8.2.2 Managing the Catalog

As discussed earlier, subscription products are maintained in SAP Billing and Revenue Innovation Management, subscription order management. SAP Convergent Charging doesn't store any product information separately. However, SAP Convergent Charging provides services that can be used to extend product master data with pricing information. This process component enables you to assign a released charge plan and refill plan in SAP Convergent Charging with the commercial products stored in SAP Billing and Revenue Innovation Management, subscription order management. The assignment between a product in SAP Billing and Revenue Innovation Management, subscription order management, and a charge plan or refill plan in SAP Convergent Charging is done using cross-catalog mapping. This service also manages operations related to SAP Convergent Charging mapping table and range table maintenance. Following are the operations managed using the services:

- `chargePlanClassFind`
- `refillPlanClassFind`
- `mappingTableCreate`
- `mappingTableMaintain`
- `mappingTableRowMaintain`
- `rangeTableMaintain`
- `rangeTableCancel`

The endpoint is `http://Your_CC_Updater_Instance_HostName:9081/v1/catalog`.

8.2.3 Manage Contract Provisioning

SAP Convergent Charging will always integrate with external customer relationship management (CRM) or order management applications to capture contract information. SAP Billing and Revenue Innovation Management, subscription order management, is used to create provider contracts with master data information (business partner, contract account, etc.), and then the contract is replicated to SAP Convergent Charging. SAP Convergent Charging offers a standard `contractProvisioning` service that provides the necessary operations to manage provisioning of provider contracts. A provider contract will have the pricing and charging data that is then used by SAP Convergent Charging to generate billable items based on predefined contract terms and conditions. This service also manages changes in provider contracts (change of

contract attributes, cancellations), and so on. Following are the operations managed using the service:

- `chargingContractMaintain`
- `chargingContractCancel`
- `chargingContractFind`
- `chargingContractMaintainBundle`
- `chargingContractMaintainMass`

The endpoint is `http://Your_CC_Updater_Instance_HostName:9081/v2/contractProvisioning`.

8.2.4 Managing Contract Activation

One of the prerequisites for SAP Convergent Charging to generate charges based on contract terms is to activate the provider contract. The contract activation service enables external applications to request activation for a provider contract in SAP Convergent Charging. This is an essential step before you plan to run the billing and invoicing process in SAP Convergent Invoicing. However, note that you can only activate charging contracts with an operational status set as **Active**. The operation provided by the service is called `chargingContractActivate`. Once the contract is activated, SAP Convergent Charging can generate the charges based on the billing reference date and process billable items to SAP Convergent Invoicing. The endpoint of the service is `http://Your_CC_Dispatcher_Instance_HostName:9180/activation`.

8.2.5 Managing Chargeable Items

SAP Convergent Charging is capable of processing a high volume of usage data records or consumption data records sent from external source systems. In most implementations, you'll need a mediation system or middleware to integrate with SAP Convergent Charging for usage rating and charging processes. SAP Convergent Charging provides a standard service that can be used to capture and process chargeable items from external sources. SAP Convergent Charging can manage both online and offline charging. The mandatory information required to process the service is `userTechnicalId` (i.e., technical reference ID of the provider contract), `serviceId` (SAP Convergent Charging service ID/type), and `consumptionDate` (date of service consumption). The API is flexible to support custom attributes as key-value pairs within `userProperties`. In SAP Billing and Revenue Innovation Management, the data points are processed in SAP Convergent Charging to generate billable items for SAP Convergent Invoicing.

Following are the different services offered:

- `chargeableItemCharge`
- `chargeableItemChargeMass`

- `chargeableItemChargeBundle`
- `chargeableItemCheckCharge`

The charging operation generates multiple output data files for billing or invoicing purposes. If your billing system is SAP Billing and Revenue Innovation Management, the output files are transferred as billable items into SAP Convergent Invoicing. The transfer is performed by one of SAP Convergent Charging instances, which is called Bulkloader.

The endpoint will be `http://Your_CC_Dispatcher_Instance_HostName:9180/chargeableItemCharging`.

8.3 Extension for SAP Convergent Invoicing

Like the SAP Billing and Revenue Innovation Management components discussed previously, SAP Convergent Invoicing offers standard APIs to integrate with third-party systems. SAP Convergent Invoicing also natively integrates with SAP Convergent Charging. Primarily, SAP Convergent Invoicing acts as the system of record in SAP Billing and Revenue Innovation Management to store consumption items and billable items. In addition, as previously discussed in Chapter 4, SAP Convergent Invoicing is the billing and invoicing module. Based on business needs, SAP Convergent Invoicing is required to integrate with various applications or portals to interface invoice data, integrate with third-party tax solutions, and integrate with other ERP solutions to ingest or export billable transactions. In the following sections, we'll discuss some of the commonly used APIs for SAP Convergent Invoicing.

8.3.1 Application Programming Interfaces for Consumption Items

As discussed in Chapter 4, consumption items refer to usage records that are stored in SAP Billing and Revenue Innovation Management. A metering system tracks the usage consumed by a customer for a given period and interfaces the usage data to SAP Billing and Revenue Innovation Management for billing. These usage records can be fed into SAP Convergent Invoicing using standard API `FKK_BIX_CIT_CREATE_API`. This asynchronous service enables you to create consumption items in SAP Convergent Invoicing with the data provided in a payload of the API call.

Configuration of the consumption item class generates a unique RFC function module for every consumption item class. You use this RFC function module to transfer consumption items for the consumption item class. The naming convention for the function modules is `/1FC/xxxx_CIT_CREATE_API`, where `xxxx` stands for the four-character name of the consumption item class. The generated RFC function module adapts the structure of the consumption item class along with its parameters.

The following parameters return the result of the consumption item transfer:

- ET_CIT_ERROR: Items with errors.
- ET_CIT0: Items added as raw data.
- ET_CIT2: Items added as ratable.
- ET_CIT4: Items added as rated.

In addition, the system returns the source transactions for the rated items in the corresponding parameters. You can also use `FKK_BIX_CITCAT_LIST_GET_API` to return a list of the productively usable consumption item classes.

8.3.2 Application Programming Instances for Billable Items

As discussed in Chapter 4, billable items refer to transactional data of a service consumed. A billable item contains information such as quantity consumed, units, master data, amount, and other key information required to further process a billable transaction. In SAP Convergent Invoicing, an out-of-the-box, asynchronous inbound function module `FKK_BIX_BIT_CREATE_API` can be used to create billable items. It contains details of service consumed, amount, account assignment, and other information required to bill and invoice the billable item. Once the billable item has been created, the source transaction ID is sent in the response with the data included in the billable item. If there are any issues when the billable item is created, the system displays error messages in the response.

Configuration of the billable item class generates a unique RFC function module for every billable item class. The naming convention for the function modules is `/1FE/xxxx_BIT_CREATE_API`, where `xxxx` stands for the four-character name of the class.

You can also use `FKK_BIX_BITCAT_LIST_GET_API` to return a list of the productive and usable billable item classes.

8.3.3 Application Programming Interfaces for Customer Invoicing

Once the billable items are processed in SAP Convergent Invoicing, the next step is to process billing, followed by generating a customer invoice. The customer invoice is a crucial transactional document, and customers reference the invoice to pay for the services consumed. Based on business needs, the invoice documents generated in SAP Convergent Invoicing are required to be interfaced to customer-facing portals or payment portals for reference. SAP Convergent Invoicing provides standard APIs to share invoicing document information to external portals. Function module `FKK_INVDOC_SELECT_SINGLE_API` can be used to interface invoice details for a given invoice document. For a list of invoices, function module `FKK_INVDOC_SELECT_API` can be used.

You can also use the standard OData API `API_CABUSPARTINVOICE` to read invoice items for a business partner and read the corresponding invoice headers with this service. For each invoice, you can read correspondence data, including the printed document.

8.4 Extension for Contract Accounting

Contract accounting offers standard APIs and extension points that can be used to manage business scenarios required to interface with external systems. The most common scenarios of external integrations are payment gateways where the payment information is captured and processed in SAP S/4HANA. SAP Customer Financial Management solution caters to capabilities such as credit management, payment processing, and SAP Collection and Dispute Management. Contract accounting addresses a majority of the aforesaid capabilities. Various standard APIs are available to aid external integrations and to reduce customizations. Receivables management and payment handling within contract accounting primarily deal with large volumes created by billing and invoicing processes, and the APIs are designed to deal with huge volumes. The following list covers some of the common integration scenarios encountered while working with contract accounting:

■ APIs for contract accounting document posting

SAP S/4HANA provides standard APIs to post documents in contract accounting from external, non-SAP applications. You can use `BAPI_CTRACDOCUMENT_CREATE` to post a contract accounting document with document attribute values based on document types. During posting of a contract accounting document, general ledger account determination automatically occurs based on the configurations maintained.

If you have an existing contract accounting document in an SAP S/4HANA system, you can use `BAPI_CTRACDOCUMENT_CHANGE` to update the document. Note that you can only change business partner items using the API.

If an external application requires information of existing contract accounting documents, you can use standard API `BAPI_CTRACDOCUMENT_GETDETAIL`. The API can be used to read data from a contract accounting document. SAP also provides inbound OData service `CADocumentManage`, which enables external systems and other consumers to read contract accounting document data. The service makes the document data available through its document header, document business partner line item, and document general ledger line-item entities.

■ APIs for open item clearing

As you may already know, an open item refers to an invoice item that isn't cleared or paid. Once the invoice is issued to a customer, an open item is created on the customer account until the invoice is settled or paid. Open items in contract accounting can be cleared with an offsetting amount posted on the account.

SAP Billing and Revenue Innovation Management can be integrated to a non-SAP application or portals that require customer open item information to be displayed for a given period. You can use the standard API `BAPI_AR_ACC_GETOPENITEMS` to interface open items for an account based on selection criteria. The API can provide a customer's open items on a given key date.

You can also use standard API BAPI_CTRACCONTRACTACCOUNT_CLR to clear open items in contract accounting.

■ APIs for customer account balance

SAP provides standard API BAPI_CTRACCONTRACTACCOUNT_GBAL to read account balances for existing customers for a key date. The API can make a query based on item type (open, cleared, statistical), date as well as customer information (business partner, contract account, contract). If you've enabled SAP Biller Direct, you can also use the standard inbound synchronous service ContractAccountAccountBalanceByCustomerQueryResponse_In. This inbound operation returns the current account balances of a specified business partner's contract accounts. The response message returns the following balance items:

- Total amount for open items
- Total amount for due items
- Total amounts for items that are 30, 60, or 90 days overdue

■ APIs for business partner payments

There are various inbound and outbound payment processes depending on the type of business, size of business, and country. In a typical implementation, you'll need to integrate with non-SAP applications to execute an end-to-end payment process. SAP Billing and Revenue Innovation Management offers standard APIs such as API_CAB-USPARTPAYMENT, which can be used to retrieve a list of payments and make and release payments. The API also helps to read payment items and corresponding payment headers for a business partner. Payment items are either document items that are cleared by payments, payments on account, or released payments. Note that a released payment can also be withdrawn unless the corresponding items are not cleared.

■ APIs for credit management

One of the core modules of SAP Customer Financial Management is credit management, which helps companies efficiently determine the risk of losses on receivables from customers by assessing customer credit information. There are also provisions to integrate third-party credit agencies for credit decisions. Usually, the credit check is a standard process that happens before a sales transaction is committed, and it's important to synchronize a customer's credit information from SAP S/4HANA to external or internal applications to make an informed decision.

SAP S/4HANA provides a standard SOAP-based synchronous API CREDITMANAGEMENTACCOUNTBYIDQU1 to request credit-relevant data, such as the credit limit or the credit exposure of a business partner. The message interface consists of two message types: CreditManagementAccountByIDQuery, which represents a message for requesting credit data, and CreditManagementAccountByIDResponse, which represents a response to the request for credit data. This service contains header, selection, language code, credit management account, and log nodes.

In addition, inbound OData service CACreditWorthiness can be used to enable external systems and other consumers to retrieve creditworthiness data of business partners. This data includes information such as the creditworthiness score, the creditworthiness date, and whether the creditworthiness value is frozen for a business partner. The OData service transfers a list of creditworthiness records for individual business partners.

■ APIs for managing disputes

Disputes can be managed effectively using SAP Collections and Dispute Management on a dispute case created for a receivable item in contract accounting. SAP Billing and Revenue Innovation Management offers standard APIs that can be used to create, read, and update a dispute case. It also enables creation or deletion of disputed objects from a dispute case. A disputed object could be a business partner, contract account, contract, or contract accounting documents. Notes and attachments also can be created and read. SAP Billing and Revenue Innovation Management provides a standard inbound OData service CADisputeCase.

Now that we've discussed some of the available APIs and integration points, these may not cover all use-cases during your solution implementation. If you require additional or detailed references of SAP Billing and Revenue Innovation Management APIs, go to <https://api.sap.com>, and search with "SAP Billing and Revenue Innovation Management" or an object name to check all available standard API options, as shown in Figure 8.5.

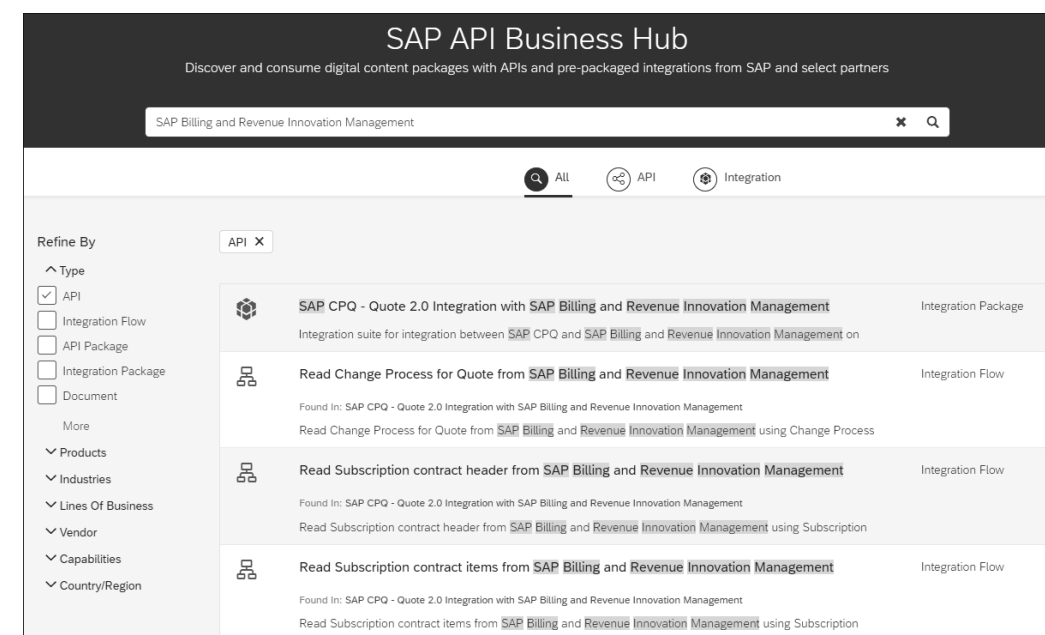


Figure 8.5 SAP API Business Hub

8.5 Summary

By now, you know that SAP Billing and Revenue Innovation Management uses sets of APIs with different authentication protocols to build applications, integrations with legacy and non-SAP platforms and extensions easily. You've learned to set up, create, and test all the necessary API and integrated objects, and you understand the purpose and functions of these objects and how they play their part in this process. SAP Billing and Revenue Innovation Management is an integrated solution. We therefore recommend working through the other chapters in this book as well, which may prove helpful for reaching your goals.

In the next chapter, we'll discuss how to handle data migration processes while working with SAP Billing and Revenue Innovation Management, including different associated objects and their dependencies.

Contents

1	Introduction to SAP Billing and Revenue Innovation Management	17
1.1	Flexible Consumption, the Subscription Economy, and Business Model Transformation	18
1.2	Business Drivers for SAP Billing and Revenue Innovation Management	19
1.2.1	Business Model Changes: From Products to Subscriptions	19
1.2.2	Consumption-Based Model	22
1.2.3	Subscription-Based Model	23
1.2.4	Event-Based Model	24
1.3	SAP Billing and Revenue Innovation Management Components	26
1.3.1	SAP Billing and Revenue Innovation Management, Subscription Order Management	31
1.3.2	SAP Convergent Charging	32
1.3.3	SAP Convergent Invoicing	33
1.3.4	Contract Accounting	34
1.3.5	Peripheral Solutions	35
1.4	Case Study: Martex Corp.	36
1.4.1	Background	37
1.4.2	Concerns	37
1.4.3	New Business Model	38
1.4.4	Use Case	38
1.5	Summary	40
2	Subscription Order Management	41
2.1	Master Data	42
2.1.1	Business Partner	42
2.1.2	Contract Account	48
2.1.3	Subscription Materials	56
2.2	Organizational Units	61
2.3	Configuring Subscription Order Management	65
2.3.1	Product Modeling	66

2.3.2	Product Configuration Using Advanced Variant Configuration	67
2.3.3	Cross-Catalog Mapping	71
2.3.4	Setting Up One-Off Charges	75
2.3.5	Subscription Transactions	77
2.3.6	Master Agreements	90
2.3.7	Partner Agreements	91
2.3.8	Device as a Service: Equipment Master Integration	96
2.3.9	Order Distribution Infrastructure	101
2.4	Using Subscription Order Management	105
2.4.1	Creating Master Data	106
2.4.2	Creating and Mapping Subscription Products	112
2.4.3	Managing Subscription Orders and Subscription Contracts	112
2.4.4	Modifying Subscription Contracts	115
2.5	SAP Fiori Applications for Subscription Order Management	115
2.6	Subscription Lifecycle Management	117
2.6.1	Subscription Renewal Process	117
2.6.2	Cancellation	126
2.6.3	Service Upgrade and Downgrade	134
2.6.4	Change of Contract Terms	138
2.7	Reporting and Analytics	142
2.7.1	SAP Fiori Applications for Subscription Order Management	142
2.7.2	Order Distribution Infrastructure Distribution Monitor	144
2.8	Solving Common Order and Contract Management Issues	147
2.9	Summary	150
3	Charging	151
3.1	Overview	151
3.2	Flexible Rating and Charging Model	153
3.3	Master Data	153
3.3.1	Catalog	154
3.3.2	Subscriber Account and External Account	155
3.3.3	Provider Contract	156
3.4	Organizational Units	157
3.5	Managing Tables	158
3.5.1	Tier Table	158
3.5.2	Translation Table	159

3.5.3	Mapping Table	160
3.5.4	Range Table	161
3.6	Configuring SAP Convergent Charging	162
3.6.1	Chargeable Item Class	163
3.6.2	Charged Item Class	165
3.6.3	Creating a Charge Plan (Reserved Instance)	184
3.6.4	Creating Charge Plan (Nonreserved Instance)	193
3.6.5	Creating Pricing Macros	202
3.7	Managing Allowances	204
3.7.1	Allowance Lifecycles	204
3.7.2	Define Allowances	204
3.7.3	Shared Allowances	210
3.7.4	Allowance Dashboard	210
3.8	Managing Counters	210
3.9	Managing Integrations	211
3.9.1	Managing Integration with SAP Billing and Revenue Innovation Management, Subscription Order Management	212
3.9.2	Managing Integration with SAP Convergent Invoicing	212
3.10	Solving Common Rating and Charging Issues	212
3.11	Summary	213
4	Invoicing	215
4.1	Simplified Billing and Invoicing	216
4.2	Master Data	217
4.2.1	Business Partner	218
4.2.2	Product	219
4.2.3	Contract Account	219
4.3	Configuring SAP Convergent Invoicing	221
4.3.1	Billable Items	221
4.3.2	Consumption Items	237
4.3.3	Rating and Rating Groups	244
4.3.4	Billing	250
4.3.5	Invoicing	260
4.3.6	Dependent Items	273
4.3.7	Partner Settlement	281
4.3.8	Partner Settlement Categories	282
4.3.9	Integration with SAP Revenue Accounting and Reporting	283

4.4	Using SAP Convergent Invoicing	286
4.4.1	Creating a Consumption Item or Billable Item	286
4.4.2	Modifying Consumption Items or Billable Items	295
4.4.3	Viewing Provider Contract	297
4.4.4	Posting a Billing Document, Invoicing Document, and Posting Document	297
4.4.5	SAP Fiori Apps	310
4.5	Intercompany Settlement Process	318
4.5.1	Company Code Group Assignment	319
4.5.2	Intercompany Settlement Types	319
4.5.3	Settlement Type Determination	320
4.5.4	Master Data Determination	320
4.5.5	Account Determination and Document Type Settings	321
4.5.6	Intercompany Billable Items and Document Postings	322
4.6	Reporting and Analytics	325
4.6.1	All Billable Items View/Processing	325
4.6.2	Consumption Items View/Processing	327
4.6.3	Raw Data View of Billable Items	328
4.6.4	Display Invoicing Orders	329
4.6.5	Display Accrual/Deferral Items	330
4.6.6	Billable Items View/Processing	331
4.6.7	Reversal Request for Invoicing Documents Analysis	332
4.6.8	Reversal Request for Billing Documents Analysis	333
4.7	Solving Common Billing and Invoicing Issues	334
4.8	Summary	335
5	Contract Accounting	337
5.1	Master Data	340
5.1.1	Business Partner	340
5.1.2	Business Agreement	345
5.1.3	Product	346
5.1.4	Contract Account	346
5.1.5	Provider Contract	352
5.1.6	Partner Agreement	357
5.2	Configuring Contract Accounting	359
5.2.1	Account Determination	360
5.2.2	Open Item Management	361
5.2.3	Account Balance Display	364
5.2.4	Payments and Returns	365

5.2.5	Integration with SAP Convergent Charging	366
5.2.6	Integration with the General Ledger	368
5.2.7	Financial Customer Care	372
5.2.8	SAP Cash Application in Contract Accounting	378
5.3	Using Contract Accounting	386
5.3.1	Creating a Business Partner	386
5.3.2	Creating a Contract Account	388
5.3.3	Viewing or Editing a Posting Document	389
5.3.4	Viewing a Customer's Balance on Account	392
5.3.5	Using Open Item Management	394
5.3.6	SAP Fiori Apps	402
5.4	Reporting and Analytics	408
5.4.1	Contract Accounting Items List: Open/All Items	408
5.4.2	List of Open Items at Key Date	409
5.4.3	Reconciliation of Open Items and General Ledger	410
5.4.4	List of Open Items for Business Partner on Key Date	411
5.4.5	Customer Account Balance Display	411
5.5	Solving Common Contract Accounting Requirements	412
5.6	Summary	416
6	SAP Subscription Billing	417
6.1	Overview of SAP Subscription Billing	417
6.2	Business Configuration	418
6.2.1	Markets	418
6.2.2	Units of Measure	420
6.2.3	Rate Elements	420
6.3	Master Data	421
6.3.1	Customer Master Data	421
6.3.2	Rate Plan Templates	423
6.3.3	Rate Plans	429
6.3.4	Subscription Products	430
6.4	Provisioning Subscription Transactions	435
6.5	Billing Process in SAP Subscription Billing	438
6.6	Integration with SAP Convergent Invoicing	440
6.7	Additional Features in SAP Subscription Billing	441
6.8	Summary	441

7	Integration with Other Solutions	443
7.1	Integration between SAP Billing and Revenue Innovation Management Core Components	443
7.1.1	Consumption Data	446
7.1.2	One-Off Charges	447
7.1.3	Prepaid Data	447
7.1.4	Billing and Invoicing	447
7.1.5	Contract Data	447
7.1.6	Disputes	448
7.1.7	Communication between Systems	448
7.2	SAP Convergent Mediation by DigitalRoute	448
7.2.1	Integration with SAP Convergent Charging	450
7.2.2	Integration with SAP Convergent Invoicing	452
7.3	SAP Billing and Revenue Innovation Management and SAP Customer Experience Platform	453
7.4	SAP Revenue Accounting and Reporting	456
7.4.1	Optimized Contract Management	456
7.4.2	Integration Architecture	458
7.4.3	Five-Step Model	459
7.4.4	Freeze and Unfreeze Performance Obligations	468
7.5	SAP Customer Financial Management	469
7.5.1	Collection Management	470
7.5.2	Organizational Structure	470
7.5.3	Master Data	471
7.5.4	Collection Strategies	472
7.5.5	Promise to Pay	472
7.5.6	Customer Contact	473
7.5.7	Resubmission and Note	473
7.5.8	SAP Collections and Dispute Management	473
7.5.9	SAP Collections and Dispute Management for SAP Convergent Invoicing	475
7.5.10	Credit Management	478
7.6	Tax Engine	480
7.7	Payment Gateway	482
7.8	Summary	484

8	Extension and Connectivity	485
8.1	Extension for SAP Billing and Revenue Innovation Management, Subscription Order Management	486
8.1.1	Business Partners	487
8.1.2	Contract Accounts	487
8.1.3	Subscription Products	488
8.1.4	Subscription Transactional Data	488
8.2	Extension for SAP Convergent Charging	490
8.2.1	Overview	491
8.2.2	Managing the Catalog	493
8.2.3	Manage Contract Provisioning	493
8.2.4	Managing Contract Activation	494
8.2.5	Managing Chargeable Items	494
8.3	Extension for SAP Convergent Invoicing	495
8.3.1	Application Programming Interfaces for Consumption Items	495
8.3.2	Application Programming Instances for Billable Items	496
8.3.3	Application Programming Interfaces for Customer Invoicing	496
8.4	Extension for Contract Accounting	497
8.5	Summary	500
9	Data Migration	501
9.1	Data Migration Process	502
9.2	Data Migration Objects	503
9.3	Data Migration Types	504
9.3.1	Creating a Company Using Industry Solutions Migration Workbench	505
9.3.2	Customer Migration from Legacy Systems	506
9.3.3	Contract Account Migration	508
9.3.4	Subscription Product Migration	510
9.3.5	Subscription Order and Contract Migration from Legacy Systems	513
9.3.6	Billable Items and Consumption Items	516
9.3.7	Open Accounts Receivable Conversion from a Legacy Platform	517
9.3.8	Migration from SAP CRM-Based SAP Billing and Revenue Innovation Management, Subscription Order Management, to SAP S/4HANA	520
9.4	Summary	521

10 First Steps to SAP Billing and Revenue Innovation Management	523
10.1 Why Move into Subscription-Based Business?	524
10.2 Evaluating Your Current Landscape	524
10.2.1 Company Currently Running SAP	525
10.2.2 Set Up SAP Billing and Revenue Innovation Management Infrastructure	526
10.2.3 Communication between Systems in the SAP Billing and Revenue Innovation Management Landscape	529
10.2.4 Verify Landscape Selection with the Product Availability Matrix	529
10.2.5 Security for Your Connected Systems	531
10.2.6 Load Balancing	531
10.2.7 Migrating Changes	532
10.2.8 Monitoring	532
10.2.9 Data Protection	533
10.2.10 Sizing	533
10.3 Evaluating Your Deployment Options	536
10.3.1 SAP Billing and Revenue Innovation Management: Full Suite Deployment	537
10.3.2 SAP Billing and Revenue Innovation Management: Phased Deployment Using SAP Convergent Charging, SAP Convergent Invoicing, and Contract Accounting	537
10.3.3 SAP Billing and Revenue Innovation Management: Phased Deployment Using SAP Convergent Invoicing and Contract Accounting	537
10.3.4 SAP Billing and Revenue Innovation Management Deployment Using SAP Convergent Charging Only	537
10.3.5 Deployment Option with SAP Flexible Solution Billing	538
10.3.6 Deployment Option with Sales and Distribution Integration	538
10.3.7 Deployment Options with Contract Accounting Posting	538
10.4 SAP Standard Content Activation Service	538
10.5 Reviewing Rapid Deployment Solutions and Implementation Best Practices	539
10.5.1 Master Data	540
10.5.2 Transactional Data	544
10.6 Replication of Subscription Contracts to SAP Convergent Invoicing and SAP Convergent Charging	545
10.7 Summary	546

Conclusion	547
Appendices	551
A Certification Preparation	551
B The Authors	573
Index	577

Index

A

Access zone	449
Account assignment	188, 189, 233, 271
<i>link</i>	189
Account balance	392
<i>list type</i>	364
Account balance display	364, 476
<i>line layout</i>	365
Account determination	221, 360
<i>ID</i>	49
Account maintenance	394, 395
Accounts receivable	342
Accrual item	330
Acquiring bank	483
Action profile	81
Activation charge	174
Advanced Variant Configuration	66, 67
<i>define classes</i>	68
Aggregation variant	246, 247
Allowance	204
<i>dashboard</i>	210
<i>event class</i>	204
<i>lifecycle</i>	204
<i>logic</i>	205
<i>plan</i>	207
<i>shared</i>	210
Amazon Web Services	
<i>deployment</i>	526
Analyze Installment Plans app	407
Anything as a service	41
Application Programming Interface	
(API)	485
<i>API_BUS_SOLUTION_QUOTATION</i>	
<i>_SRV</i>	489
<i>BAPI_CTRAACCONTRACTACCOUNT</i>	510
<i>billable item</i>	496
<i>business partner payment</i>	498
<i>class generation</i>	288, 293
<i>consumption item</i>	495
<i>contract accounting document</i>	
<i>posting</i>	497
<i>credit management</i>	498
<i>CRM_ISX_BTX_API_ORDER_CREATE</i>	489, 514
<i>customer account balance</i>	498
<i>customer invoicing</i>	496
<i>dispute management</i>	499

Application Programming Interface (API) (Cont.)	
<i>manage freeze period</i>	469
<i>open item clearing</i>	497
<i>query billing data</i>	440
<i>SAP Customer Experience integration</i>	455
Arithmetic computation operator	182
Assemble-to-order	539
Attribute profile	477
Authorized group	90
Automatic clearing	395
Auto pay	48
Auto renewal	118
<i>configure</i>	120
<i>enable</i>	119
<i>execute</i>	121

B

Bill	
<i>header level</i>	439
<i>item level</i>	439
<i>view</i>	438
Billable item	221, 222, 250, 356, 516
<i>billing document</i>	258
<i>cancellation</i>	258
<i>change</i>	296
<i>class</i>	223, 227, 230, 274
<i>class revenue</i>	226
<i>cost</i>	258
<i>create</i>	225, 286, 290
<i>create mapping</i>	167
<i>display</i>	325
<i>intercompany</i>	322
<i>main item</i>	223
<i>main transaction</i>	235
<i>management</i>	227
<i>modify</i>	295
<i>monitoring screen</i>	300
<i>one-time</i>	255
<i>payment data</i>	223
<i>payment processing</i>	236
<i>pay-per-use</i>	257
<i>processing</i>	230, 325, 331
<i>program enrichment</i>	231
<i>raw</i>	222
<i>raw data view</i>	328
<i>recurring</i>	257
<i>refund</i>	257

Billable item (Cont.)	
<i>status</i>	222
<i>subprocess</i>	227
<i>subtransaction</i>	235
<i>table creation</i>	232
<i>table naming convention</i>	231
<i>tax item</i>	223
<i>text item</i>	223
<i>transfer</i>	232
<i>trial</i>	257
<i>type</i>	227, 229, 254
<i>usage-based</i>	257
<i>view</i>	325
Billable item class	
<i>activation</i>	225, 230
<i>additional tables</i>	232
<i>create</i>	224
Billing	447
<i>solving common issues</i>	334
Billing cycle	424
Billing document	259
<i>analysis</i>	333
<i>post</i>	297
Billing process	251
<i>create</i>	252
Billing type	
<i>assignment</i>	254
Block pricing model	426
Business Add-In (BAI)	60
Business agreement	110, 345
Business agreement block	113
Business Application Programming Interface (BAPI)	488
Business driver	19
Business model transformation	19
Business partner	43, 49, 218, 340, 540
<i>activate</i>	43
<i>change</i>	344
<i>configure</i>	342
<i>create</i>	108
<i>define role</i>	44
<i>extension</i>	487
<i>general data view</i>	387
<i>grouping</i>	219
<i>master data</i>	445
<i>role</i>	218
<i>usage</i>	344
<i>where used list</i>	388
Business partner migration	506
<i>prerequisites</i>	506
Business Rules Framework	74
Business transaction	344
C	
Cancellation	126
<i>individual</i>	131
<i>prorated refund</i>	304
<i>redetermination of steps</i>	147
Case study	17, 36
Catalog	154
Category assignment	283
Change contract terms	138
Change process	85, 125
<i>activate</i>	87
<i>assign function profile to role</i>	88
<i>assign to transaction type</i>	88
<i>groups</i>	89
Characteristics	70
Charge	
<i>cancellation</i>	171
<i>counter</i>	171
<i>create</i>	167
<i>credits</i>	424
<i>logic</i>	172
<i>master data</i>	153
<i>modeling usage</i>	176
<i>monthly recurring charge</i>	168
<i>reference</i>	168
Charged item class	163, 165
<i>define</i>	163
<i>manual definition</i>	166
Charge plan	71, 177, 185
<i>add charge</i>	184
<i>configure parameters</i>	186
<i>counter, configure</i>	189
<i>create</i>	184
<i>disable tax</i>	190
<i>linking charge</i>	187
<i>nonreserved instance</i>	193
<i>parameters</i>	186
<i>release</i>	192, 193
<i>remove</i>	194
<i>reserved instance</i>	184
<i>status</i>	193
Charging	153
Charging view	444
Classic contract management	456
Class method	512
Clearing	
<i>control</i>	400
<i>restrictions</i>	399
<i>setup</i>	400
<i>step</i>	401
<i>variant</i>	400

Cloud computing	18
Collection agent	450
Collection management	469, 470
Collection strategy	472
Combo charge	38
Commercial view	444
Company code	48
<i>group assignment</i>	319
Configuration profile	70
Constraint	69
Consume-to-cash process	216, 338
Consumption-based model	22
Consumption data	446
<i>flow</i>	446
<i>rating</i>	446
Consumption data record	237
Consumption item	237
<i>change</i>	295
<i>class</i>	237, 238
<i>create</i>	286
<i>display</i>	243, 286
<i>management</i>	240
<i>modify</i>	295
<i>processing</i>	327
<i>processing rule</i>	241
<i>program enhancement</i>	241
<i>rated</i>	240
<i>rated-excepted</i>	240
<i>raw</i>	240
<i>raw-excepted</i>	240
<i>reversal</i>	241
<i>status</i>	239
<i>table</i>	238
<i>unrated</i>	240
<i>view</i>	327
Consumption item class	
<i>HCOS</i>	164
<i>REVE</i>	164
Contact-to-lead stage	454
Contract	
<i>cancellation</i>	309
<i>data</i>	447
<i>solving common issues</i>	147
Contract account	48, 219, 342, 346, 541
<i>category</i>	220, 347
<i>configure</i>	348
<i>create</i>	110
<i>dunning</i>	350
<i>dunning and correspondence data</i>	49
<i>extension</i>	487
<i>general data</i>	49
<i>migration</i>	508
Contract account (Cont.)	
<i>number range</i>	220, 347
<i>payment and tax data</i>	49
<i>relationship</i>	220
Contract account class	49
<i>define</i>	50
<i>settings</i>	51
Contract accounting	26, 27, 215, 337, 338, 366
<i>business partner</i>	386
<i>cash application</i>	378
<i>configuration node</i>	340, 414
<i>configure</i>	359
<i>contract account</i>	388
<i>extension</i>	497
<i>key functionalities</i>	338
<i>master data</i>	340
<i>posting document</i>	389
<i>reporting</i>	408
<i>SAP Fiori apps</i>	402
<i>solving requirements</i>	412
<i>using</i>	386
Contract accounting profile	372
<i>assign function module</i>	375
<i>settings</i>	373
Contract accounting search profile	375
Contract partner	341
<i>role</i>	343
Control zone	449
Convergent Invoicing tab	350
Core Tool	153, 163
Correspondence variant	51
Counter	
<i>remove</i>	194
Create Dependency Net app	69
Create Subscriptions as Pending field	431
Credit management	469, 478
Credit segment	479
Credit worthiness	479
Cross-catalog mapping	71, 542, 543
Currency	424
Customer	
<i>create</i>	422
<i>define custom references</i>	422
<i>master data</i>	421
Customer account balance	411
Customer account group	46
<i>define</i>	47
Customer contact	473
Customers app	421

D

Data migration	501
<i>objects</i>	503
<i>phases</i>	502
<i>types</i>	504
Data protection	533
Data Replication Framework	61
Date profile	81
Dependent item	273
<i>program extension</i>	278
<i>reason</i>	278
<i>type</i>	277
Deployment	536
<i>full suite</i>	537
<i>phased</i>	537
<i>sales and distribution integration</i>	538
<i>SAP Convergent Charging</i>	537
<i>SAP Flexible Solution Billing</i>	538
Deploy phase	503
Desktop launcher	449
Device as a service	41, 96
<i>change process</i>	101
<i>use case</i>	97
Discount agreement	90
Discover phase	502
Display Account Balance app	405
Display Billable Items app	314
Display Billing Documents app	315
Display Error Logs - Billable Items app	313
Display Error Logs - Consumption Items app	312
Display Invoicing Documents app	317
Dispute	448
Dispute case	475
<i>lifecycle</i>	476
Distribution schema	104
Document distribution category	102
Dunning/Correspondence tab	350

E

Event-based model	24
Execution zone	449
Explore phase	502
External account	155, 156
External Reference	431

F

Financial Customer Care	372
Five-step model	459

Fixed pricing model	425
Flat fee	173
Flat function	197
Flat rate item	197
Flexible consumption	17, 18, 20
FQEVENT enhancement point	480
Freemium	24
Function module	
<i>BAPI_CTRACCONTRACTACCOUNT</i>	
<i>_CRI</i>	488
<i>BAPI_MATERIAL_SAVEREPLICA</i>	512
<i>CRMS4_SOM_MATERIAL_UPDATE</i>	512
<i>CRMS4_SOM_SPEC_PROD_UPDATE</i>	512
<i>FKK_BIX_RATING_EVENT_30</i>	245
<i>FKK_BIX_RATING_EVENT_30_SAPCC</i>	246
<i>FKK_CREATE_DOC_MASS</i>	518
<i>ISU_M_DOCUMENT_CREATE</i>	518

G

General Data tab	349
General ledger	
<i>financial accounting</i>	467
<i>integration</i>	368
Google Cloud Platform	
<i>deployment</i>	527
Group company code	48
Grouping	45
<i>characteristic</i>	246
<i>variant</i>	246, 253, 261

H

Header data	259
-------------	-----

I

Implementation class	102
Individual billing	298
Individual invoicing	301
Industry Solutions Migration Workbench	504
<i>create company</i>	505
Inference	385
Infrastructure	526
Infrastructure as a service	18
Integration	443
<i>management</i>	211
Interaction Center web client	376
Intercompany settlement	321
Intercompany settlement process	318
Intercompany settlement types	319
Interface assignment	225

Interface component	274
<i>activate</i>	275
Invoicing	215, 260, 447
<i>agreement</i>	91
<i>category</i>	268
<i>document</i>	305
<i>history</i>	259
<i>master data</i>	217
<i>order</i>	329, 330
<i>process</i>	261
<i>type</i>	266
Invoicing document	269
<i>analysis</i>	332
<i>billable item</i>	270
<i>header section</i>	270
<i>invoicing document type</i>	270
<i>item</i>	270
<i>posting document</i>	270
<i>references</i>	270
<i>source document</i>	270
Invoicing function	263
<i>additional</i>	266
<i>main</i>	266
<i>standard</i>	263
Invoicing process	260, 262
<i>execution</i>	268
Item category	
<i>configure</i>	83
<i>define</i>	84
<i>group</i>	82

J

Java Virtual Machine	154, 490
----------------------	----------

K

Key date	411
Key terminology	552

L

Landscape evaluation	524
Lead-to-opportunity stage	454
Line item	259
Line layout variant	365
List type	364
Live system phase	503
Load balancing	531

M

Maintain Equipment IDs field	100
Maintenance framework	115
Maintenance Planner	530
Main transaction	234, 360
Manage Business Partner Items app	404
Manage Business Partner Master	
<i>Data app</i>	108, 403
Manage Characteristics app	68
Manage Contract Account app	94
Manage Contract Accounts app	404
Manage Installment Plans app	407
Manage Master Agreement app	117
Manage Product Bundles app	66, 117
Manage Product Master Data app	66, 71
Manage Repayment Requests app	406
Manage Solution Quotation app	116
Manage Subscription Contract app	116
Manage Subscription Order app	116, 122
Manage Subscription Product-Specific	
<i>Data app</i>	66, 116, 521
Manual extension	123
<i>execute</i>	123
Mapping table	178
<i>introducer</i>	179
Mapping version	72
Market	418
Martex Corp.	17, 36
<i>background</i>	37
<i>concerns</i>	37
<i>new business model</i>	38
Mass billing	299
<i>parallel run</i>	299
Mass invoicing	302
<i>parallel run</i>	301
Mass run	
<i>configure</i>	126
<i>execute</i>	128
Mass Run app	126
Master agreement	90, 447
<i>product</i>	57
Master data	42, 105, 540
<i>determination</i>	320
<i>ID</i>	279
<i>migration</i>	520
<i>objects</i>	504
<i>query status</i>	383
Microservice SKU	176
Migrating changes	532
Monitoring	532

N

Nonreserved instance	183
Number range	44

O

Object dependencies	69
OData services	485, 487
ODI distribution monitor	144
ODI framework	99
One-off charge	75, 447
<i>settings</i>	76
One-time charge	172
Open item	517
<i>management</i>	361, 394
<i>migration</i>	517
OpenText	35
Opportunity-to-quote stage	454
Optimized contract management	456
Order distribution infrastructure	101, 546
Order-to-cash stage	455
Organizational structure	106
Organizational unit	61, 157
<i>assign</i>	63, 65
<i>generate</i>	62
<i>in SAP S/4HANA</i>	63
Output item	191

P

Parameter	74
<i>ET_CIT_ERROR</i>	496
<i>ET_CITO</i>	496
<i>ET_CIT2</i>	496
<i>ET_CIT4</i>	496
<i>IS_CONTROL</i>	514
Partner account relationship	348
Partner agreement	77, 78, 91, 357, 447
<i>contract item view</i>	358
<i>create business partner</i>	93
<i>create contract account</i>	94
<i>create subscription partner order</i>	94
<i>prerequisites</i>	92
Partner charge	195
<i>calculate</i>	197
<i>charging reference</i>	196
<i>create</i>	195
<i>default internal reference</i>	196
Partner charge plan	198
<i>add account assignment</i>	198
<i>add charge</i>	198

Partner charge plan (Cont.)	
<i>charged item</i>	200
<i>create</i>	198
<i>disable tax</i>	199
Partner determination procedure	81
Partner provider order	78
Partner settlement	281, 305
<i>category</i>	282
<i>reason</i>	282
Payment and return	365
Payment data item	259
Payment gateway	36, 482
Payment method	52
Payment processor	483
Payments/Taxes tab	349
Payment term	48
Pending Subscription feature	437
Percentage pricing model	428
Performance obligation	283
<i>freeze period</i>	468
Platform as a service	18
Posting area	
<i>0113</i>	477
<i>1020</i>	396
<i>1025</i>	397
<i>1060</i>	398
<i>1090</i>	398
<i>2610</i>	272, 482
<i>2611</i>	271
<i>8120</i>	233
<i>8121</i>	235, 236
<i>8122</i>	235
<i>8177</i>	247
Posting document	271
Practice questions	
<i>charging</i>	555
<i>contract accounting</i>	560
<i>Data migration</i>	563
<i>extension and connectivity</i>	562
<i>Invoicing</i>	558
<i>SAP Billing and Revenue</i>	
<i>Innovation Management, subscription</i>	
<i>order management</i>	553
Precondition	69
Predefined subscription	24
Prepaid data	447
Prepare phase	502
Pricing	544
<i>macro</i>	202
Procedure	69
Process	
<i>selection</i>	263

Process type	86
<i>ISTA</i>	86
<i>ISTB</i>	86
<i>ISTC</i>	86
<i>ISTF</i>	86
<i>ISTG</i>	86
Process view	87
Product	19, 219, 346, 510, 541
<i>bundle</i>	58, 59
<i>classification</i>	57
<i>create</i>	112
<i>extension</i>	488
<i>map</i>	112
<i>master</i>	56
<i>migration</i>	510
<i>modeling</i>	66
<i>preconfigured</i>	71
<i>purpose</i>	57
<i>sharing</i>	60
Product Availability Matrix	529
Promise to pay	472
Provider contract	78, 91, 112, 156,
201, 284, 352, 447	
<i>define product</i>	354
<i>modify</i>	115
<i>settings</i>	353
<i>view</i>	297
Provider order	78, 91, 112
Provisioning	435
<i>create</i>	435
<i>finalize request</i>	437
Provisioning Requests app	437

Q

Quick Sizer	533
Quote-to-order stage	455

R

Rapid deployment solution	539
Rate component	171
Rate element	420
Rate plan	429
Rate Plans field	431
Rate plan template	423
<i>pricing model</i>	425
<i>type</i>	424
Rate type, denied	184
Rating	153, 244
Rating group	244
<i>create</i>	245

Realize phase	502
Reconciliation key	
<i>status</i>	368
Records management system	475
Recurring billable item	304
Recurring pricing model	428
Recurring rate	169
Remote function call	61, 284
<i>destination</i>	380
<i>processor</i>	452
Report	
<i>/SDF/HDB_SIZING</i>	534
<i>HRBCI_ATTRIBUTES_BUFFER</i>	
<i>_UPDATE</i>	148
<i>RCCUVTDB</i>	70
<i>RFKKBIXBITSAMPLE</i>	291
<i>RFKKBIXBITUPLOAD</i>	293
<i>RFKKBIXBITUPLOADSAMPLEFILE</i>	293
<i>RFKKBIXCITSAMPLE</i>	287
Reserved instance	182
Reset clearing	397
Resubmission	473
Revenue accounting item	456
<i>postponed</i>	457
<i>processed</i>	457
Revenue accounting subledger	467
Revenue allocation	465
Revenue and tax item	
<i>migration</i>	518, 519
Revenue recognition	330
Revenue sharing product	57
Reversal request	332
RISE with SAP	528
Role	
<i>category</i>	44
<i>FLCU00</i>	506
<i>FLCU01</i>	506
<i>FLVNO0</i>	506
<i>MKK</i>	506

S

Sales group	64
Sales office	64
Sales organization	63
SAP API Business Hub	485
SAP Billing and Revenue Innovation	
<i>Management</i>	17, 26, 535
<i>certification preparation</i>	551
<i>component</i>	26
<i>design</i>	26
<i>on-premise deployment</i>	526

SAP Billing and Revenue Innovation Management (Cont.)	
<i>solution billing</i>	27
<i>solution delivery</i>	26
<i>solution sales</i>	26
SAP Billing and Revenue Innovation Management, subscription order management	31, 41, 105, 212
<i>analytics</i>	117, 142
<i>configure</i>	65
<i>extension</i>	486
<i>master data</i>	106
<i>reporting</i>	117, 142
<i>transaction types</i>	77
SAP Business Technology Platform	380, 418
SAP Cash Application	378
<i>data migration</i>	382
<i>settings</i>	382
<i>setup</i>	380
<i>training</i>	383
SAP Collections and Dispute Management	469, 473, 475
<i>configure</i>	474
<i>dispute cases</i>	477
SAP Commerce	455, 480
SAP Commerce Cloud	454
SAP Convergent Charging	27, 32, 60, 71, 74, 81, 105, 151, 237, 338, 367, 445, 509–512, 535, 536
<i>catalog management</i>	493
<i>chargable item management</i>	494
<i>configure</i>	162
<i>contract management</i>	493
<i>date types</i>	166
<i>endpoints</i>	492
<i>extension</i>	490
<i>integration</i>	366
<i>solving common issues</i>	212
<i>technical data</i>	187
<i>web services</i>	491
SAP Convergent Invoicing	26, 27, 33, 51, 81, 105, 191, 192, 212, 215, 216, 229, 237, 249, 260, 285, 286, 330, 338, 345, 481, 517
<i>business functions</i>	215
<i>capabilities</i>	217
<i>configure</i>	221
<i>extension</i>	495
<i>integration with SAP Subscription Billing</i>	440
<i>reporting</i>	325
SAP Convergent Mediation by DigitalRoute	28, 29, 35, 152, 237, 338, 417, 443, 448
<i>integration with SAP Convergent Charging</i>	450
<i>integration with SAP Convergent Invoicing</i>	452
SAP Customer Data Cloud	454
SAP Customer Experience	453
SAP Customer Financial Management	36, 443, 469
<i>master data</i>	471
<i>organizational structure</i>	470
SAP Customer Relationship Management	53, 218, 342, 352, 417
<i>migration to SAP S/4HANA</i>	520
SAP EarlyWatch	534
SAP Easy Access menu	390, 394, 395, 412
SAP Entitlement Management	28, 36
SAP Fiori	116, 142, 310, 402, 486
<i>user experience model</i>	402
SAP Fiori launchpad	72
SAP Flexible Solution Billing	28, 538
SAP for Telecommunications	443
SAP Marketing Cloud	454
SAP Public Sector Collection and Disbursement	443
SAP Revenue Accounting and Reporting	28, 36, 284, 456
SAP Revenue Accounting and Reporting	
<i>allocation transaction price</i>	464
<i>contract</i>	463
<i>integration</i>	283
<i>integration activation</i>	464
<i>integration architecture</i>	458
<i>performance obligation</i>	461
<i>recognize revenue</i>	465
<i>transaction price</i>	462
SAP S/4HANA	34, 41, 217
SAP S/4HANA Cloud	528
SAP S/4HANA Cloud for contract accounting and invoicing	34
SAP Sales Cloud	454
SAP Service Cloud	454
SAP standard content activation service	538
SAP Subscription Billing	417
<i>additional features</i>	441
<i>billing process</i>	438
<i>configuration</i>	418
<i>master data</i>	421
<i>product</i>	430
SAP Utilities Customer Engagement	443

Security	531
Selection	
<i>control</i>	262
<i>key</i>	233
Selection condition	69
Service ID	285
Service identifier	188
Service upgrade or downgrade	134
<i>execute</i>	135
Settlement type determination	320
Sharing contract	448
Sharing options	60
Sharing product	57
Shipping control	53
Simulate Configuration Models app	70
Sizing	533
<i>expert sizing</i>	534
SOAP	485, 487
Software as a service	18
Solution quotation	77
Source items	259
Standard product	57
Status profile	81, 477
Step category	102
Step type	102
String comparator	179
Subprocess	227
<i>create</i>	228
Subscriber account	155, 156
Subscription	19
<i>renewal process</i>	117
Subscription app	438
Subscription-based	
<i>business</i>	524
<i>model</i>	23
Subscription contract	77, 545
<i>replication</i>	545
Subscription contract migration	513
<i>from legacy system</i>	513
Subscription economy	18
Subscription generation	437
Subscription lifecycle management	117
Subscription order	77, 544
Subscription order management	27
Subscription plus coverage	24
Subscription Profile field	431
Subscription Terms field	433
Subscription Type field	431
Subtransaction	234, 360
System communication	448, 529
T	
Table	158
<i>DFKK_CC_MD_MIG</i>	508
<i>mapping table</i>	160
<i>MARA</i>	512
<i>MVKE</i>	512
<i>range table</i>	161
<i>tier table</i>	158
<i>translation table</i>	159
<i>variant</i>	69
Tax	
<i>calculation</i>	480
<i>determination</i>	360
<i>engine</i>	480
<i>item</i>	259
Tax characteristic	
<i>define</i>	54
Tax type	
<i>define</i>	54
Technical data	187, 199
Technical identifier	188
Technical Resources field	75
Technical Resource Types field	432
Technical view	444
Text determination procedure	80
Tiered pricing model	427
Time-based recurring charges	466
Tolerance group	49, 363
Transaction	
<i>BP</i>	341, 386
<i>CAA1</i>	389
<i>CAA3</i>	389
<i>CLO1</i>	68
<i>CLO2</i>	68
<i>CLO3</i>	68
<i>CRMC_NR_RA_PRVCTR</i>	79
<i>CRMC_NR_RA_PRVORD</i>	79
<i>CTO4</i>	68
<i>CU02</i>	69
<i>CU03</i>	69
<i>CU21</i>	69
<i>CU41</i>	70
<i>CU42</i>	70
<i>CU43</i>	70
<i>CU61</i>	70
<i>CU62</i>	70
<i>CU63</i>	70
<i>CU64</i>	70
<i>CU65</i>	70
<i>CU66</i>	70
<i>CU67</i>	70

Transaction (Cont.)

DRFIMG	61
EMIGALL	508, 511
FF_5	385
FKKBIX_M	299
FKKBIX_MA	258, 299
FKKBIX_RATE_MA	249
FKKBIX_RATE_S	249
FKKBIX_REVREC_MON	331
FKKBIX_S	258, 298
FKKBIXBIT_CWB	290, 297
FKKBIXBIT_MON	297, 298, 300, 325, 328, 331
FKKBIXBITR_MON	328
FKKBIXCIT_CWB	242, 286, 295
FKKBIXCIT_MON	243, 250, 295, 327
FKKBIXCIT_UPLOAD	311
FKKCC_MD_MIG	508
FKKCC_PC_MIG	510
FKKCC_PC_MON	148
FKKINV_M	302
FKKINV_MA	268, 301
FKKINV_MON	329
FKKINV_REV_MON	332
FKKINV_S	268, 301
FKKINVBILL_REV_MON	334
FP_PV3	357
FP_RAI_MON	457
FP_VT3	297, 355
FPO5	385
FPO6	362, 394, 396
FPO7	397
FPB7	385
FPCS	483
FPE1	476
FPE2	390
FPE3	303, 370, 390
FPF3	369
FPG1M	371
FPG4	371
FPL9	393, 411
FPMA	395
FPML_CASHAPP_CUSTOM	383
FPML_CASHAPP_INF	385
FPML_CASHAPP_MASTER	383
FPML_CASHAPP_MDSTAT	384
FPML_CASHAPP_MIG	382
FPML_CASHAPP_TRAIN	384

Transaction (Cont.)

FPML_CASHAPP_TSTAT	384
FPMP_CASHAPP_PROP	385
FPOI_ACC	411
FPOIP	409
FPO2P	410
FPO4	408
FPPRD3	346
FPSL	414
FPTX	481
FQCO	233, 236
LMDB	529
MMI7	521
MMAM	521
PPOMA_CRM	106
PRPA	78
PRPO	78
PRVC	81
SE37	289, 294
SE38	291
SM59	284
SNRO	45
SOAMANAGER	148, 211, 368
SPRO	215, 274, 277, 284, 312, 314, 319, 392, 482
UDM_DISPUTE	477
Transactional data	544
<i>extension</i>	488
<i>migration</i>	521
<i>object</i>	504
Transaction type	79
<i>define copy control</i>	84
Transient counter	210

U

Unit of measure	420
Unlimited subscription	24
Upload Consumption Items app	312
Usage-based charge	304
Usage-based model	22
Usage charges	466
Usage rate	178
Usage type	55

V

Virtual machine	18
Volume pricing model	426



Jyoti Prakash Pathak, Maniprakash Balasubramanian, Shovanjit Gangopadhyay, Clement Sanjivi, Andreas Tan

SAP Billing and Revenue Innovation Management: Functionality and Configuration

588 pages, 2nd edition, 2022, \$89.95

ISBN 978-1-4932-2277-3

 www.sap-press.com/5542



Jyoti Prakash Pathak is a manager at Deloitte focused on SAP Billing and Revenue Innovation Management solutions. He has expertise in contract accounting; SAP Convergent Invoicing; SAP Billing and Revenue Innovation Management, subscription order management; and SAP Convergent Charging.



Maniprakash Balasubramanian is a senior manager at Deloitte. He helps clients with their as-a-service transformation through subscription and flexible consumption models leveraging SAP Billing and Revenue Innovation Management.



Shovanjit Gangopadhyay is a manager and lead advisor in Deloitte's SAP Billing and Revenue Innovation Management practice. He has more than nine years of experience with delivering complex client engagements and designing and implementing creative business and technology solutions using SAP Billing and Revenue Innovation Management and SAP Subscription Billing.



Clement Sanjivi is an author and a leader in Deloitte's SAP practice. He architects and delivers business transformation programs with a primary focus on anything as a service transformations. He has rich experience in subscription- and usage-based business models across many industries and global implementations leveraging SAP solutions such as SAP Billing and Revenue Innovation Management.



Andreas Tan is a technology fellow in Deloitte's SAP practice. He is the chief architect with the focus on global as a service and digital transformational programs across a variety of industries leveraging SAP S/4HANA, SAP Billing and Revenue Innovation Management, and other technologies.

We hope you have enjoyed this reading sample. You may recommend or pass it on to others, but only in its entirety, including all pages. This reading sample and all its parts are protected by copyright law. All usage and exploitation rights are reserved by the author and the publisher.