SAP CLOUD PLATFORM | EXTERNAL

Blueprint

Automate the Document Review Process Using SAP Cloud Platform Workflow and SAP Jam Collaboration

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OVERVIEW

This blueprint discusses how to build and orchestrate a collaborative document-centric workflow in different Line of Business (LOB) areas using SAP Cloud Platform Workflow service, SAP Cloud Platform Business Rules, and SAP Jam Collaboration to streamline business processes. It describes the challenges involved in building a document-centric workflow, including collaboration among business users to achieve a common business goal within certain time constraints.

Project Phases

For automating the document review process using SAP Cloud Platform Workflow and SAP Jam Collaboration, the steps outlined below are depicted in detail in this blueprint. Note the information and guidance in this blueprint are intended to be complementary to the existing information already available, and not in replacement of it.

IDEATION Target Roles: • Line of Business • Leaders/Users	*Discover* an SAP solution that overcomes a specific business challenge	1. Understand business value 2. Visualize solution 3. Estimate investment
PLANNING Target Roles: • Enterprise Architects • Project Leads	Make *technical decisions* in terms of landscape and deployment options	1. Integration between workflow and SAP Jam 2. Identity Authentication service
IMPLEMENTATION Target Roles: • Developers • Administrators • Technical Consultants	*Act,* and start completing the steps necessary to go-live	1. Workflow and rules 2. Task UIs and integrated SAP Jam widgets
OPERATION Target Roles: • Technical Consultants • Administrators	*Understand* what is required to run your solution and the tools provided by SAP	1. Lifecycle management 2. Monitoring

IDEATION PHASE

Business Scenario

Line of business users are working from different geographic locations and participating in end-to-end business processes. Collaboration is an important aspect that determines the success of an enterprise and the efficiency of processes that operate across organizations and regions.

Business documents are often part of these core processes and users must be able to easily share these documents to make decisions, or to review and share their inputs and comments. Decision makers sometimes require expert advice from other business users and may need to work collaboratively. They may also want to share feedback with other process participants, enabling them to perform tasks more efficiently.

The types of challenges that may be encountered by various industries include the following:

INDUSTRY	TASK
Financial Services	Manual review of financial documents involving business users located in different geographical locations.
Retail	Evaluating Request for Proposal (RFP) responses involving different businesses, causing delays in procurement contracts due to lack of automation and communication difficulties.
Consumer Products	Contract review.
Travel & Transportation	Travel-budget planning based on inputs from various LOB managers.
Oil & Gas	Root cause analysis of downtime in a production unit or oil exploration unit requires various experts to contribute and review the cause and mitigation plan. Lack of automation and collaboration can lead to delays.
Manufacturing	Review of a design document by multiple users who need to share their feedback.

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Manufacturing Example

A manufacturing company is selling one of its production plants. The company requires accounting adjustments based on the sale. An accounting policy document template must be reviewed and updated by various business users from accounting, taxation, and auditing. All these users are working on this document simultaneously and need to collaboratively update and share comments. They may also need to invite additional experts who are not contributing participants to the workflow. After the review, the document is submitted to department heads for final approval. Once approved, the document is accepted as official, and distributed to all stakeholders and senior management.

Solution

Automating a document-centric process helps users avoid excessive manual work and exchange of ideas or comments through email. A user who's responsible for triggering a document review workflow can invite other users as reviewers/contributors based on a business rule All invited users can work in parallel, reviewing and updating the document, and sharing comments. The comments are visible to other task owners who are taking part in the review. The reviewers can invite other users to contribute content or comments without forwarding/delegating their workflow task. This enables collaboration across users working in different locations. When the review is finished, the document is sent to the responsible managers and auditors for final review. These reviewers may return the document to the initiator and request additional information, or they may sign their approval.

Value Proposition

Automating a document-centric workflow in a collaborative way helps businesses achieve their goals without delays. It avoids the exchange of documents through emails, and loss of content. Here are some examples of how automating a document-centric workflow can vary across industries:

INDUSTRY	TASK
Financial Services	Year-end accounting is a tedious process all businesses must comply with. Businesses of all sizes require teams to organize documents and ensure that compliance is met. A document-centric workflow allows for cross-collaboration and orchestration of the many documents that need to be accurately handled.
Consumer Products	Companies frequently sign contracts that more than one person must review to provide feedback or adjusted terms. A document-centric workflow avoids version control issues and ensures timely completion of signed contracts.
Travel & Transportation	Line of business leaders are provided a budget every year with which to plan travel arrangements and deliverables for their employees. Depending on the size of the organization, many managers might be involved in allocation discussions, requiring requests, and ultimately a decision on how to distribute funds for maximum productivity. A document-centric workflow avoids version control issues.

Oil & Gas	An oil rig experiences downtime due to an unknown issue. A problem of this magnitude requires experts to analyze the downtime, and exploration units to review and discover the cause of the problem. From there, solutions are proposed and agreed upon to prevent such incidents from recurring. A document-centric workflow provides a common location for detailing the issues and suggested resolutions.
Manufacturing	The design of a new assembly line requires contributions from architects, designers, project managers, business leads, and so on. Third-party companies are often hired to provide expertise to new developments. A central repository that offers built in version control and collaborative features is required.

Reference Solution Diagram

SAP Cloud Platform is the extension platform for SAP. It enables developers to securely develop loosely coupled extension applications, thus implementing additional workflows or modules on top of existing solutions.

The following solution diagram illustrates a basic architectural pattern for building a collaborative document-centric workflow using SAP Cloud Platform Workflow, SAP Cloud Platform Business Rules, and SAP Jam Collaboration.
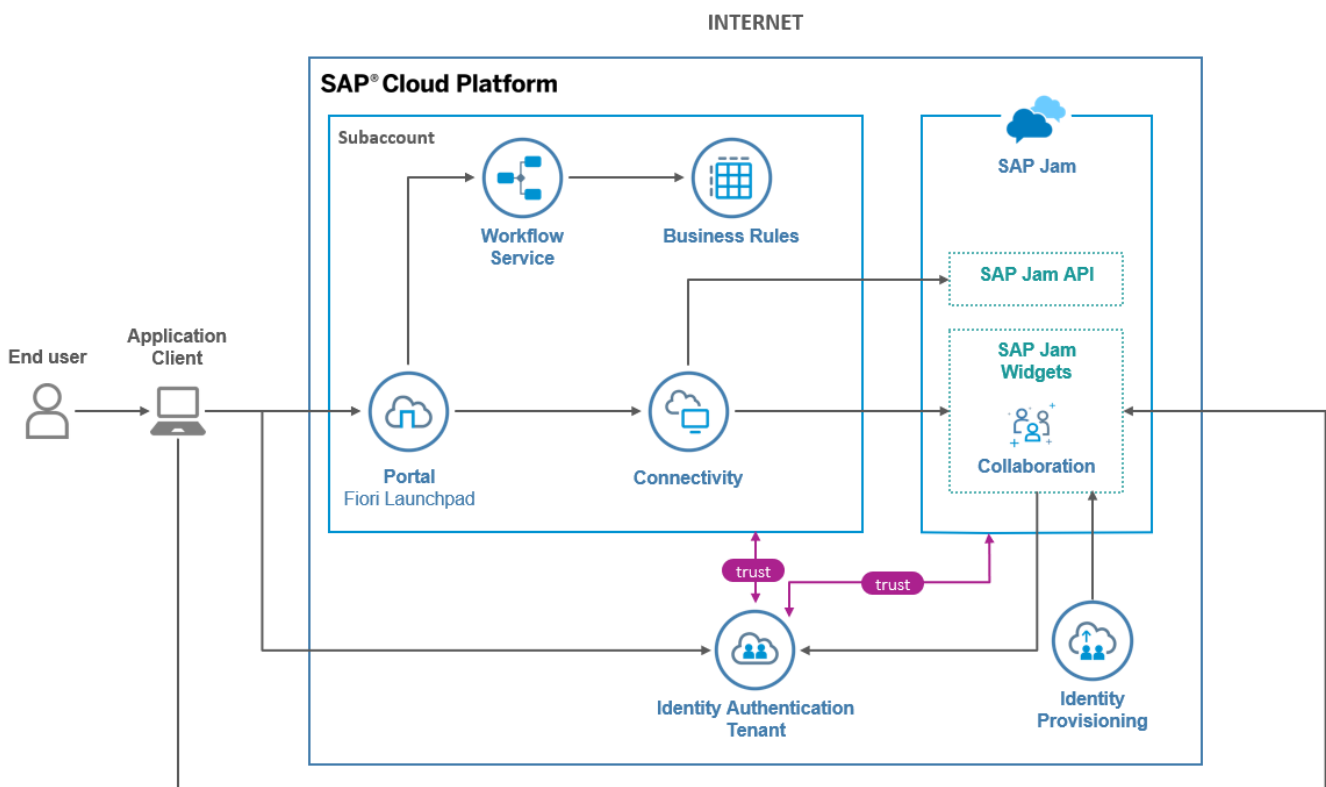
Reference Solution Components

SAP Cloud Platform Components for Licensing Considerations

The following Bill of Material is for reference purposes only. The following table is only an example of the SAP Cloud Platform services and components required for Automating the document review process using workflow and SAP Jam use case. Please consult your SAP Account Executive regarding your specific licensing needs.

	SALES ITEM	FUNCTION	LICENSING METRICS	EXAMPLE
	SAP Cloud Platform Portal	Create and publish freestyle and SAP Fiori launchpad-style business sites	Blocks of 1,000 site visits/month	1,000 visits
	SAP Cloud Platform Workflow	Automate business processes using workflow technology	Users	100 workflow users
	SAP Web IDE	Create and extend applications for browser and mobile services	Block of 5 users/month	5 users
	SAP Cloud Platform Identity Authentication service	Secure authentication and single sign-on for users in the cloud	Logon blocks of 100/month	3,000 logons
	SAP Cloud Platform Identity Provisioning service	Easily provision identities and their authorizations to various cloud and on-premise business applications.	Users	100 users
	SAP Jam Collaboration, enterprise edition	An out-of-the-box collaboration platform for the entire enterprise. This license provisions users into SAP Jam	Users	100 users

Customers can use the SAP Cloud Platform pricing estimator to calculate the required investment for a project. Scale up or down on services as required.

Members of SAP PartnerEdge[1] can evaluate the development of an application for this use case – most development licensing is covered by the packs offered by the SAP partner licensing services. Click here for details.

Other Components Required in for this Use Case

COMPONENTS	FUNCTION
SAP Cloud Platform Business Rules	Helps automate decision making.by encapsulating business logic from application logic and enabling business and key users to

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[1] Excluding open ecosystem basic

		change decision logic without rewriting the application. License is included in the SAP Cloud Platform Workflow license.
	SAP Cloud Platform Connectivity service	Allows SAP Cloud Platform applications to access securely remote services that run on the Internet or on premise. License is included with the SAP Cloud Platform account.

References

As part of the digital transformation businesses are undergoing to stay competitive, the demand for automating processes, such as collaboration, are becoming more and more vital. Here is just one example of an SAP Cloud Platform Workflow customer success story that highlights the implementation time from idea to go live and the top benefit received. For a full list of references, please visit the SAP Cloud Platform Success Stories Site.

CUSTOMER	INDUSTRY	IMPLEMENTATION TIME	TOP BENEFIT
C-Com	High Tech	6-8 weeks	Simplify tool lifecycle management processes.

More Information about the Ideation Phase:

A sample application is available as reference content in SAP Web IDE full stack. It enables customers and partners to quickly set up the solution and run in their landscapes.

- Sample Application in SAP Web IDE

- Sample Application for Collaboration in SAP Cloud Platform Workflow with SAP Jam

PLANNING PHASE

SAP Jam Collaboration

SAP Jam Collaboration is an enterprise collaboration platform that brings together people, data, and processes.

SAP Jam prebuilt collaborative work patterns make use of a variety of capabilities depending on the specific use case, including content repositories for document storage. Basic approval processes are available for document and content publication. For more complex, multi-step approval processes the SAP Cloud Platform Workflow service offers additional configuration flexibility.

SAP Jam Collaboration APIs let you integrate SAP Jam capabilities into your business applications and bring data from your business-critical applications into SAP Jam Collaboration. The APIs conform to the OData v2 specification.

Developing a UI for Workflow

SAP Cloud Platform Workflow service enables customers and partners to extend their line of business applications, create new processes, and rapidly build workflow applications. It offers a Business Process Model and Notation (BPMN) 2.0-based design-time environment that lets users model their processes. Modelled workflows are executed in SAP Cloud Platform, and users can claim and complete their tasks using SAP My Inbox, which is integrated with the SAP Fiori launchpad.

SAP Cloud Platform Workflow service helps customers integrate document management solutions like SAP Jam using REST/OData APIs. A document that's attached to a workflow service instance can be accessed by various task owners, letting them work collaboratively.

REST-based APIs that access the workflow service runtime let you develop task user interfaces (UIs) using SAP Web IDE and consume workflow APIs to read and modify task context and complete tasks. For example, you can create a UI that triggers a new workflow instance for a predefined workflow definition, and a task UI that plugs into My Inbox to represent a user task in the workflow definition. Both types of user interface are typically HTML5 applications that are developed using SAP Web IDE and deployed as HTML5 applications on SAP Cloud Platform.
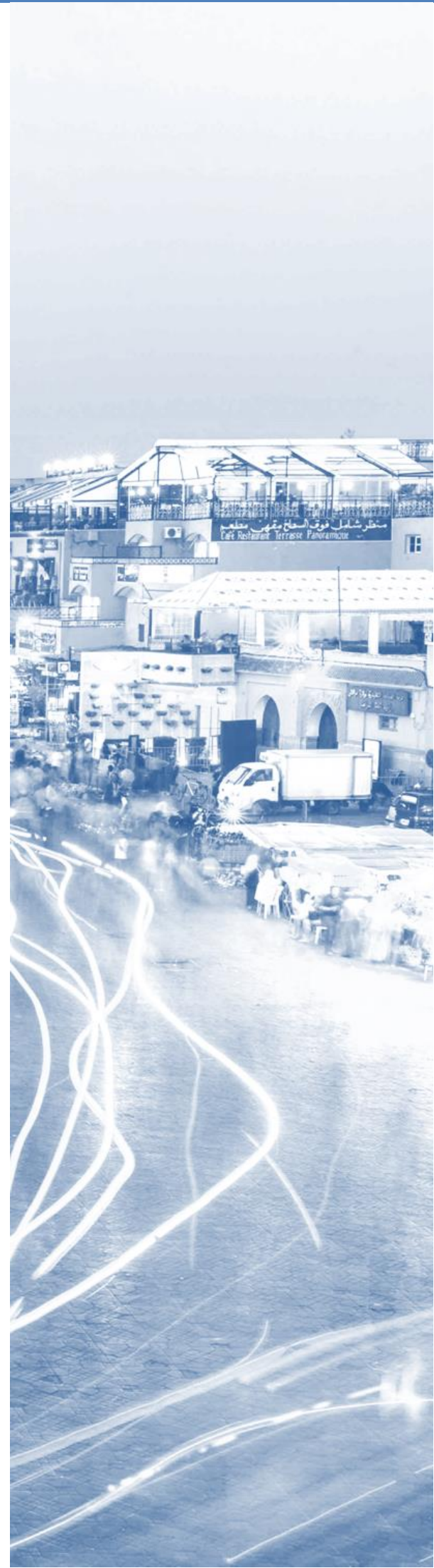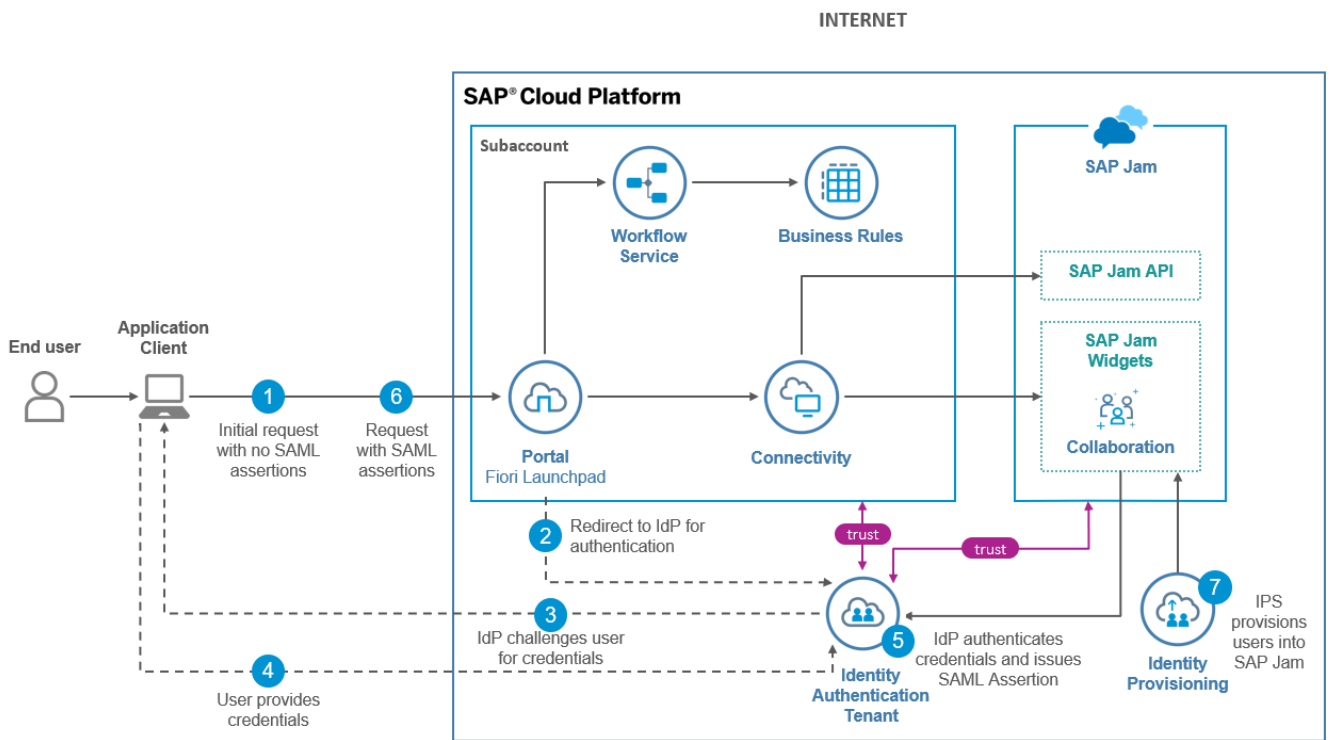
Security

Security can be categorized into the following main topics:

1. **Authentication** – proving that users are who they say they are.
2. **Authorization** – providing permissions to the user.
3. **Single Sign-On** – allowing users to access multiple applications using a single set of credentials.

The diagram below depicts at a high level how authentication, authorization, and identity propagation fit into this SAP Cloud Platform solution.

There are various options for implementing each of these security topics within SAP Cloud Platform. There's no one-size-fits-all approach to security!

For this blueprint, practical security options include the following:

– **Authentication**: SAP Cloud Platform Identity Authentication service lets you use a common source of identities for all your cloud-based applications. It provides a standard, internationally adopted method for authentication using SAML assertions. For more information, visit SAP Cloud Platform Authentication: Identity Authentication Service.

– **Authorization**: SAP Cloud Platform lets you manage the authorizations of users who have been authenticated by an identity provider. Authorization is based on role-based authorizations, which allows administrators to easily manage user access, and permissions for both platform services and applications deployed on the platform. For more information, visit Authorizations in SAP Cloud Platform.

– **Single sign-on:** SAML bearer assertion lets applications consume OAuth-protected resources. Users are authenticated by using SAML against the configured trusted identity

providers. The SAML assertion then requests an access token from an OAuth authorization server. This access token is automatically injected in all HTTP requests to the OAuth-protected resources

More Information about the Planning Phase:

- The SAP Jam Collaboration API
- SAP Cloud Platform Workflow: REST/OData APIs
- SAP Cloud Platform Authentication: Identity Authentication Service
- Authorizations in SAP Cloud Platform

IMPLEMENTATION PHASE

SAP Cloud Platform Account Setup

1

If this is your first SAP Cloud Platform project, you'll need a system admin to spend some time setting up the platform and onboarding your company. Tasks include, but are not limited to, setting up subaccounts to match your landscape in the back end; typically, development, test, and production accounts, adding at least two additional administrators, and assigning other roles to members in your organization. For more information about the specifics for onboarding and getting started, see the SAP Cloud Platform Planning Guide.

SAP Cloud Platform Services Setup

2

2.1. **SAP Cloud Platform Workflow and Business Rules service setup:** See how to configure the workflow service and authorization in the SAP Cloud Platform Workflow product documentation.

2.2. **SAP Cloud Platform Portal setup:** Designed for desktop and mobile consumption, the portal service includes predefined site templates that help you design and develop your own site template for on-premise and cloud solution extensions. The portal service is required because the workflow service enables business users to consume SAP My Inbox, a Fiori-based application for managing tasks. The workflow service also provides out-of-the-box Fiori-based monitoring applications that keep track of deployed workflows and their instances, all of which can be accessed as Fiori application tiles from the portal.

2.3. **Web IDE Full-Stack service setup:** The Web IDE Full-Stack version is the more scalable version of Web IDE that supports both frontend and backend development including a building process, abstraction layers for ease of development and more. The workflow service offers BPMN 2.0-based business process tools in SAP Web IDE Full Stack. Enable the workflow editor feature of Web IDE Full Stack to use the workflow modelling tools. Web IDE Full-Stack is the development tool for building SAPUI5 user interfaces for your workflow.

SAP Jam Collaboration Service Setup

3

Enable SAP Jam Collaboration in the service section of your SAP Cloud Platform account, then log in to the SAP Jam Developer Edition environment to complete specific administrative tasks. See Use SAP Jam with SAP Cloud Platform..

Connect SAP Cloud Platform and SAP Jam Collaboration

4

Set up trust between SAP Cloud Platform and SAP Jam Collaboration to support principal propagation.

Pre-requisite for SAP Cloud Platform Workflow with SAP Jam Sample Application

Configure the SAP Cloud Platform destination for SAP Jam Collaboration API SSO.

Configure the SAP Web IDE destination for SAP Jam Collaboration on SAP Cloud Platform.

Develop Business Rules

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The SAP Cloud Platform Business Rules service enables line-of-business users to separate decision logic from application logic and own the business data that's used for decisions. Use the service to perform the following tasks:

1. Create a project, which can contain data objects, rules, rulesets, and rule services.
2. Model data objects. A data object is a reusable entity that represents the data domain of the consuming application and holds the inputs and outputs of your business rules. Data objects can be modelled based on their relationship and cardinality.
3. Model a rule service by consuming the input and result data objects. A rule service is an interface that allows consumption of rulesets by an external application.
4. Model rules. Create decision table rules or text rules for the business

logic needed in your rule service.
5. Define rulesets, which are logical collections of business rules.
6. Deploy a rule service. The rule service provides an API interface or endpoint that allows your application to invoke decision logic.

You can find more information and insights in the blog series SAP Cloud Platform Business Rules – Extensions and Consumption Patterns.

Model and Deploy Workflow with SAP Web IDE Full Stack

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The workflow service offers BPMN 2.0-based tools in SAP Web IDE.

1. Model a workflow: Create a project for your workflow definition. Create a workflow and define a business key from the application context
2. Model user tasks: User tasks are available to LOB users through SAP My Inbox. Enable users to provide various approvals or enhancements of workflow context based on requirements. The workspace includes an HTML5 application that you can assign as the user interface.
3. Model service tasks: Call the services that are exposed by applications and systems. You can use API hub integration to search various APIs (including REST/OData APIs) exposed by SAP LOB applications.
4. Model script tasks: Access workflow context and add or modify context data using JUEL (Java Unified Expression Language) expressions.
5. Model email tasks: Send email notifications to users using an HTML body with parameterized content.
6. Modify your workflow to handle intermediate message events: An event affects the process flow. Intermediate message events enable your workflow to receive messages from remote applications or systems.
7. Handle workflow escalations using boundary timer events: For example, if a task is not completed within a specified time, you can trigger an alternative flow.
8. Integrate business rules into your workflow by configuring service tasks: The workflow engine invokes the RESTful rule service using the host and credentials information that's maintained in the destination configured on SAP Cloud Platform.
9. Deploy your workflow to SAP Cloud Platform.

Develop Custom SAPUI5-Based UI for Workflow

7

The workflow for your automated document-centric process requires human inputs. As the workflow service includes REST-based APIs that let you access the workflow service runtime, you can develop scenario-specific user interfaces (UIs) on top of these APIs. See Defining a User Interface for a Workflow.

More Information about the Implementation Phase:

- SAP Cloud Platform Planning Guide

- Configuring the Workflow Service

- Authorization Configuration

- SAP Cloud Platform and SAP Jam

- Set Up Trust Between SAP Jam and SAP Cloud Platform

- Create and Configure an OAuth Client in SAP Jam

- Create a Destination in SAP Cloud Platform to Call SAP Jam APIs

- Blog: Prerequisite for SAP Cloud Platform Workflow with SAP Jam Sample Application

- SAP Cloud Platform Business Rules – Extensions and Consumption Patterns

- Deploy Your Workflow

- Developing a User Interface for Workflow

OPERATION PHASE

In this phase, your solution implementation has been deployed to a production environment, and operations and maintenance support have become critical to ensuring success. You'll need to understand topics such as lifecycle management, monitoring, and the tools SAP has available to support you.

Lifecycle Management

SAP recommends that you create additional accounts for testing, quality assurance, and production, so that you have distinctive separation of data and authorizations for each area. Ideally, this setup follows the same separation that you use on your back-end system, minimizing external exposure of production data. New accounts aren't preconfigured, so you'll need to set up the SAP Cloud Platform accordingly. You can use the export feature to transport workflows between accounts.

Continuous Integration (CI)

SAP Web IDE provides a rich toolset for developing web-based apps that support single developers or small teams. However, the larger the team, the more urgent the need for an automated CI process based on a central build that includes automated testing and code quality checks. You can also manage continuous integration of SAPUI5 applications, using an ABAP front-end server as a runtime. For more information, visit CI Best Practices Guide – SAPUI5/SAP Fiori on ABAP Front-End Server

Monitoring

Access the web-based Monitor Workflows app from the SAP Fiori launchpad, to manage workflow instances and workflow definitions. Enable IT and business administrators to access workflow logs and workflow context using fine granular roles. Administrative tasks such as suspend, resume, retry, and cancel are standard operations that are available in this application. Other related monitoring tasks let you access, and assign or remove, processors.

Troubleshooting

The Monitor Workflow application lets administrators keep track of workflow instances in error/suspended state. It provides the details for technical failures, and a log ID that help the administrator understand the cause and rectify it. If a failure requires further support, create an SAP support ticket, including the log ID.

SUMMARY

Companies can provide an extraordinary collaborative intranet experience by combining SAP Cloud Platform with SAP Jam Collaboration. The platform provides application extensions, real-time analytics, and seamless access to your business-critical applications and data, and SAP Jam Collaboration provides a modern intranet solution.

Before you implement a document-centric solution using SAP Cloud Platform Workflow, be sure to reference the links within this blueprint. This blueprint outlines the most important steps for 4 definitive phases; ideation, planning, implementation, and operation.

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    For more information, please visit SAP Cloud Platform Scenarios.