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Comparison: SAP BTP, Kyma Runtime and SAP BTP, Cloud Foundry Runtime

Content

1 Comparison: SAP BTP, Kyma Runtime and SAP BTP, Cloud Foundry Runtime

In SAP BTP, you have the choice between several runtimes.

If you want to run ABAP, you'll choose the SAP BTP ABAP environment. Hence, this document only compares the non-ABAP runtimes SAP BTP, Cloud Foundry runtime and SAP BTP, Kyma runtime.

Both runtimes can be used to host and run your custom code, while at the same time being connected to SAP BTP Multi-Cloud Services and your on-premise systems. Depending on your use case and the skill set of your developers, choose the runtime that fits your needs.

> ⓘ Note
>
> The following pages present features of SAP's non-ABAP runtimes grouped by category. Compare the features that are relevant for your runtime decision and follow the links to the respective detail documentation.
>
> *Last update: July 2025*

Business Aspects Drive the Decision

The difference and the main decision point is your application architecture, driven by business aspects. Usually, scaling patterns and economies of scale drive certain requirements towards the implementation of the business logic. That logic can vary from very simplistic pieces down to very complex chains of logic.

Some architectural patterns need more control over the infrastructure. Simple implementations of business logic need less infrastructure control.

No Difference in Non-Functionals

Both non-ABAP runtimes offer parity with regards to non-functionals. Both bring multi-availability-zone infrastructure support and the same SLA levels. Applications do benefit from high availability of the runtime and can run in high availability mode themselves. Both runtimes are managed for you by SAP.

Decide Only When You Have To

Because the runtimes don't differ from a non-functional point of view, you don't have to take the decision up front. If your business grows and your scaling requirements or use cases grow or change, then you can augment your current architecture with more infrastructure by adding certain use cases on either runtime of

choice. The decision which runtime to use doesn't need to be binary. It can very well be a combination of the two.

Related Information

1.1 Definition of the Runtime

Introduces the SAP BTP, Kyma runtime and SAP BTP, Cloud Foundry runtime, together with aspects such as who interacts with the platform and the provided tenancy model.

Defintion of the Runtime

Category	SAP BTP, Kyma runtime	SAP BTP, Cloud Foundry runtime
Definition	SAP BTP, Kyma runtime is a fully managed Kubernetes runtime based on the open-source project "Kyma". This cloud-native solution allows the developers to extend SAP solutions with serverless Functions and combine them with containerized microservices. The offered functionality ensures smooth consumption of SAP and non-SAP applications, running workloads in a highly scalable environment, and building event- and API-based extensions.	The SAP BTP, Cloud Foundry runtime lets you develop polyglot cloud-native applications and run them on the SAP BTP Cloud Foundry environment.

Category	SAP BTP, Kyma runtime	SAP BTP, Cloud Foundry runtime
Consumption and interaction with the runtime	• Provisioned in SAP BTP subaccount via SAP BTP cockpit or btp CLI • Access to Technical UI • Access to Kubernetes API • Access control is managed and handled by the runtime by using Kubernetes RBAC (Role Based Access Control) • Commercial integration into SAP BTP subaccount and global account for quota- and entitlement management and cost control	• Managed and embedded in SAP BTP subaccount via SAP BTP cockpit or btp CLI. See Getting Started with an Enterprise Account in the Cloud Foundry Environment • Access to Cloud Foundry API • Access control is configurable for *Orgs* and *Spaces* • Commercial integration into SAP BTP subaccount and global account for quota- and entitlement management and cost control
Sharing mode	Non-shared cluster based on individual cloud provider subscription. The cluster is provisioned using the requested virtual machine types from the selected cloud provider in the requested region.	Shared access of cloud provider virtual machines and infrastructure amongst other consumers of the platform in the landscape.

1.2 Runtime Strategy and Roadmap

Both runtime offerings are a fundamental part of SAP BTP's runtime service offerings and are part of SAP's long term strategy and commitment. This section shows where you find the relevant material.

Runtime Strategy and Roadmap

Category	SAP BTP, Kyma runtime	SAP BTP, Cloud Foundry runtime
Strategic embedding	Part of SAP BTP's App Development Strategy	Part of SAP BTP's App Development Strategy
Support for SAP Cloud Application Programming Model (CAP) as the strategic programing model.	Yes For more information, see Deploy to Kyma Runtime	Yes For more information, see Deploy to Cloud Foundry
Roadmap	SAP Road Map Explorer for SAP BTP, Kyma runtime	SAP Road Map Explorer for SAP BTP, Cloud Foundry runtime
Commercial Information	Commercial Information for Kyma Runtime	Commercial Information for Cloud Foundry Runtime

1.3 Offerings by the Runtime Service

This section provides general information about the runtime offerings. Both runtimes in the focus of this comparison provide the same level of service.

Offering

Category	SAP BTP, Kyma runtime	SAP BTP, Cloud Foundry runtime
SLA	Standard SLA for cloud services, see SAP Trust Center and the Service Level Agreement for SAP Cloud Services.	Standard SLA for cloud services, see SAP Trust Center and the Service Level Agreement for SAP Cloud Services.
Release frequency	Continuous delivery; ad-hoc patches and hotfixes	Bi-weekly updates; ad-hoc patches and hotfixes
Upgrades	Upgrades and updates are included. Rollout depending on change type. The change type defines which of the following update/upgrade windows are being used: • Major Upgrades (rarely happening, notification 4 weeks ahead of time) • Continuous delivery, see Kyma Release Channels • Immediate updates (urgent patches, not affecting productive applications) For more information, see Platform Updates and Notifications.	Upgrades and updates are included. Rollout depending on change type. The change type defines which of the following update/upgrade windows are being used: • Major Upgrades (rarely happening, notification 4 weeks ahead of time) • Monthly updates • Immediate updates (urgent patches, not affecting productive applications) For more information, see Platform Updates and Notifications.
Operating model	See Operating Model in the Kyma Environment.	See Operating Model in the Cloud Foundry Environment.
Incident handling	See Operating Model in the Kyma Environment.	See Operating Model in the Cloud Foundry Environment.
Support levels	All support levels	All support levels
Regional availability	Available for Amazon Web Services, Google Cloud, and Microsoft Azure. • Regions for the Kyma Environment. • Datacenter Roadmap in Roadmap Explorer • Region information in SAP Discovery Center	Available for Amazon Web Services, Google Cloud, Microsoft Azure, and Alibaba Cloud. • Regions and API Endpoints Available for the Cloud Foundry Environment • Datacenter Roadmap in Roadmap Explorer • Region information in SAP Discovery Center

Category	SAP BTP, Kyma runtime	SAP BTP, Cloud Foundry runtime
Contractually planned downtimes	Only when upgrades are planned for quarterly major upgrade window (MUW). See Platform Updates and Notifications	Only when upgrades are planned for quarterly major upgrade window (MUW). See Platform Updates and Notifications

1.4 Development Skills

Learn about the target users and the development skills they need.

Development Skills

Category	SAP BTP, Kyma runtime	SAP BTP, Cloud Foundry runtime
Developer profile	• Developers following the BTP Developer Guide (see SAP BTP Developer's Guide) • Developers skilled in Java, Node.JS, Python, the SAP Cloud Application Programming Model (CAP) including SAP UI5 and Fiori Elements • Developers skilled in alternative programming languages for specialized solutions (like GoLang, Kotlin, Rust) • Developers with the need to provide applications with infrastructure knowhow • Developers skilled in CNCF space, trying to solve challenges using the ecosystem • DevOps staff trying to use Kubernetes building blocks and components from CNCF	• Developers following the BTP Developer Guide (see SAP BTP Developer's Guide) • Developers skilled in Java, Node.JS, Python and the SAP Cloud Application Programming Model (CAP) including SAP UI5 an Fiori Elements • Developers skilled in the Twelve-Factor App methodology for polyglot applications
Trainings	SAP Discovery Center Missions for SAP BTP, Kyma runtime	SAP Discovery Center Missions for SAP BTP, Cloud Foundry runtime

1.5 Security and Resilience

Learn about the security and resilience aspects.

Security and Resilience

Category	SAP BTP, Kyma runtime	SAP BTP, Cloud Foundry runtime
Backup and restore	Yes, but requires continuity planning. See Kyma environment backup	Yes, but requires continuity planning. See Resilience, High Availability, and Disaster Recovery
Workload isolation	Can be configured on multiple levels	Can be configured on multiple levels
Multi A-Z support	Offering three availability zones. See Resilience Best Practices for Kyma runtime.	Offering three availability zones. See Resilience Best Practices for Cloud Foundry runtime.

1.6 Archetypes

Compare the archetypes supported by SAP BTP, Kyma runtime and SAP BTP, Cloud Foundry runtime.

Archetypes

Category	SAP BTP, Kyma runtime	SAP BTP, Cloud Foundry runtime
RESTful Web services	Yes	Yes
SOAP Web Services	Yes	Yes
Micro Services	Yes	Yes
CAP Applications	Yes	Yes
Webhooks	Yes	Yes
Custom Docker Container	Yes	Yes See Deploy Docker Images in the Cloud Foundry Runtime and Understand the Cloud Foundry Application Lifecycle for Docker Applications

1.7 Protocols

Compare protocols supported by SAP BTP, Kyma runtime and SAP BTP, Cloud Foundry runtime.

Protocols

Category	SAP BTP, Kyma runtime	SAP BTP, Cloud Foundry runtime
AMQP	Yes	Yes
MQTT	Yes	Yes
gRPC	Yes	Yes
HTTP/1.1	Yes	Yes
HTTP/2	Yes	Yes, see Supported and Unsupported Cloud Foundry Features
OData	Yes	Yes
SOAP	Yes	Yes
WebSockets	Yes	Yes, see Supported and Unsupported Cloud Foundry Features
Streaming endpoints (RTMP, RTSP, WebRTC)	Yes	No

1.8 Observability

Compare the observability capabilities of SAP BTP, Kyma runtime and SAP BTP, Cloud Foundry runtime.

Observability

Category	SAP BTP, Kyma runtime	SAP BTP, Cloud Foundry runtime
Custom metric telemetry	Yes	Yes
Monitoring	• Limited support for metrics and dashboarding with SAP Cloud Logging integration; see Ship Metrics to SAP Cloud Logging • Integration with any vendor-specific Kubernetes APM solution possible	Yes

Category	SAP BTP, Kyma runtime	SAP BTP, Cloud Foundry runtime
Tracing	• Support for distributed tracing with SAP Cloud Logging integration; see Ship Distributed Traces to SAP Cloud Logging • Integration with any vendor-specific tracing solution possible based on OTLP ; see Traces	Zipkin tracing support, see Supported and Unsupported Cloud Foundry Features
Logging	• Supported using SAP Cloud Logging integration; see Ship Logs to SAP Cloud Logging • Integration with any vendor-specific logging solution possible	Yes
Alerting	Supported using SAP Cloud Logging integration; see Use SAP Cloud Logging Alerts	Yes

1.9 Technical Details

Compare the technical details for SAP BTP, Kyma runtime and SAP BTP, Cloud Foundry runtime.

Technical Details

Category	SAP BTP, Kyma runtime	SAP BTP, Cloud Foundry runtime
Based on open source and open standards	Based on Kyma open source , augmented by Istio , Open Telemetry , and SAP proprietary extensions.	Based on Cloud Foundry open source , augmented by HAProxy, BOSH , and SAP proprietary extensions.
Supported buildpacks	Cloud Native Buildpacks	SAP-managed and Cloud Foundry community buildpacks for several development languages
SAP BTP service support	Yes	Yes
Internal network support	Yes	No See Supported and Unsupported Cloud Foundry Features
CI/CD support	Yes, see Roadmap	Yes
Service mesh support	Yes	No
Elasticity	Yes	Yes

Category	SAP BTP, Kyma runtime	SAP BTP, Cloud Foundry runtime
Autoscaling support	Yes	Yes, with the Application Autoscaler service. See Application Autoscaler and SAP Discovery Center: Application Autoscaler.
Speed of autoscaling	App scaling speed depends on startup time of the workload. Vertical scale-up (by adding more Kubernetes Nodes to the cluster): < 1 min	App scaling speed depends on startup time of the workload
Partial zone outage detection	Yes	Yes
In-system build & deploy using buildpacks	No	Yes
Platform-as-a-service: MTA support	No	Yes
Identity provisioning support	No	No
Custom domains	Yes See Set up a custom domain for a workload	Yes See SAP Custom Domain Service
Transport services	No For Kyma, use Helm charts and a CI/CD pipeline. See Delivery Options.	Yes See SAP Cloud Transport Management
Connectivity	Yes	Yes
Task and Jobs support	Yes	Yes See Supported and Unsupported Cloud Foundry Features
RFC connection support	Yes	Yes

1.10 Sizing

Compare the sizing for SAP BTP, Kyma runtime and SAP BTP, Cloud Foundry runtime.

Sizing

Category	SAP BTP, Kyma runtime	SAP BTP, Cloud Foundry runtime
Supported CPU architecture	AMD64	AMD64
Max. assignable CPU	• Most of the available vCPUs can be assigned to workloads. • CPUs and memory can be defined individually. They are not connected.	• Guaranteed CPU share of ¼ core per GB instance memory. • Because the maximum instance memory per application is 16 GB, vertical scaling can go up to 4 CPUs. See SAP BTP-Specific Configurations.
Max. assignable memory	Up to 90% of the VM size. For a list of available options, see the Kyma Price Calculator .	Up to 16 GB per single app instance. See SAP BTP-Specific Configurations.
Minimum infrastructure size	3 Kubernetes Nodes, each 2 CPU and 8 GB memory. Roughly 40% reserved to run the infrastructure.	1 GB Memory with ¼ CPU core

1.11 Other Information

Compare other information for SAP BTP, Kyma runtime and SAP BTP, Cloud Foundry runtime.

Other Information

Category	SAP BTP, Kyma runtime	SAP BTP, Cloud Foundry runtime
Docker container support	Yes	Yes, see Supported and Unsupported Cloud Foundry Features
SSH access into workload	Yes	Yes, see Supported and Unsupported Cloud Foundry Features

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