PIVOTAL CLOUD FOUNDRY
+ SIGNALFX INTEGRATION

What is Pivotal Cloud Foundry?

Pivotal Cloud Foundry (PCF) is a platform as a service built on top of Cloud Foundry, an open source cloud computing platform that allows developers to easily deploy, operate, and scale cloud-native applications. Cloud Foundry is optimized to lighten developer workloads and, as it handles a portion of an application’s resource management, can reduce the overhead burden on an operations team.

Enterprises can manage the entire application lifecycle, from packaging to deployment to execution, as Cloud Foundry supports many cloud frameworks and application languages. With PCF, the installation and administration of cloud-native applications is simplified with capabilities around infrastructure management and provisioning, OS patching, container orchestration, security, and more. Operations and development teams can focus on building custom applications on top of the Pivotal Cloud Foundry platform.

Sending Pivotal Cloud Foundry Metrics to SignalFx

Use the Pivotal tile, composed of a Java agent, and deploy via Ops Manager to capture metrics about the health and performance of all aspects of a PCF deployment, from infrastructure, all relevant metrics related to PCF jobs, containers running on top, and the workloads in those containers. SignalFx provides built-in content to jumpstart new integrations on the infrastructure page and on built-in dashboards. Add dimensions to the metadata to easily aggregate, filter, and group metrics by any properties you choose.
Monitoring Pivotal Cloud Foundry

The adoption of Pivotal Cloud Foundry and the associated desire to build cloud-native applications changes the requirements of monitoring tools. There are three primary challenges with monitoring Pivotal Cloud Foundry in production environments:

• Understanding operational state
• Managing applications at scale
• Operating multiple clouds and applications

**UNDERSTANDING HEALTH AND PERFORMANCE OF THE PLATFORM:** A promise of platforms as a service like PCF includes decreased operations costs. The platform and automate operational tasks without requiring manual intervention, including adding more capacity when demand spikes or scaling down when traffic returns to normal. While the platform enables better operational efficiency and allows administrators to focus on business-critical initiatives, monitoring in these types of environments requires an ongoing understanding of the overall health and performance of the platform. Ensuring a healthy operational state means that administrators must be proactive in identifying emerging issues and addressing concerning trends before end users are impacted.

**COMPLEXITIES AT SCALE WITH CLOUD-NATIVE APPS:** There is a shift in application architecture as enterprises move to cloud computing, and organizations are leveraging PCF that support continuous delivery and horizontal scale. This allows for more rapid deployment, but also an increased number of datapoints to measure and an increased rate of change within a cloud-native environment. The complexities from a dynamic, elastic environment comprised of cloud infrastructure, containers, and applications makes monitoring even more complex.
OPTIONALITY OF FRAMEWORKS AND LANGUAGES: PCF allows enterprises to run their applications where they want, such as on public clouds like AWS and Google Cloud Platform, and in the programming language of their choice, such as Java, .NET, Ruby, php, Node.js. While this openness gives customers a variety of choices to build, release, and manage based on their specific needs, this optionality implies that operations and development teams must have end-to-end visibility of the entire lifecycle and the relationships between each of the individual components.

The SignalFx Difference

INSTANT, ONGOING VISIBILITY: Using SignalFx, operators can monitor the health and performance of all aspects of a Pivotal Cloud Foundry deployment, from infrastructure, all relevant metrics related to PCF jobs, containers running on top, and the workloads in those containers. Visibility into any cloud-native environment relies on the endurance of your monitoring configurations without manual maintenance.

Furthermore, SignalFx provides out-of-the-box insights across the Pivotal Cloud Foundry metrics that matter. Built-in content includes Key Performance Indicators, which give PCF operators general guidance on monitoring a PCF deployment using platform component and system (BOSH) metrics, and Key Capacity Scaling Indicators, which is based on platform metrics from different components of a PCF deployment. SignalFx also automatically curates data from the other applications and cloud services in your environment enabling you to embed your own best practices for monitoring and alerting across services important to your specific use case.
**AUTOMATIC CONFIGURATION FOR CONTEXT:** When it comes to operating PCF deployments at scale, understanding performance relies on dependencies among the various layers within the app, container, and larger architecture. With SignalFx, view the health of your entire PCF deployment in the Infrastructure tab. In this view, evaluate each host VM in your environment at a glance, and in the initial Architecture view, group applications colored by critical health metrics for an instant view of system health.

Instant visibility across all layers of a PCF deployment gives you both the flexibility to gain a service-wide view of performance and the power to explore individual details. SignalFx gives the context of the relationships from cloud infrastructure to host to container to application. For example, those running PCF on top of AWS can enable SignalFx’s AWS integration to group and filter by AWS properties such as availability zone. With CloudWatch metrics integration enabled, drill across from any Cloud Foundry VM to view it as an EC2 instance.

**PROACTIVE, POWERFUL ALERTING:** Simplistic alerts based on static threshold often does not provide enough insight or context to determine whether an issue requires attention, especially when monitoring cloud-native applications that employ scale-out, elastic properties. Adding properties to aggregate streams of data and applying real-time analytics on patterns helps to provides service-level insight on performance.
About SignalFx

SignalFx is a leader in monitoring & operational intelligence for the cloud. By collecting and monitoring metrics across every component in the cloud, SignalFx maximizes the productivity of cloud operations teams and ensures organizations deliver upon the business promise of digital transformation. The service is optimized for today's container and microservice based architectures, provides powerful and proactive alerting that use machine learning algorithms to dynamically adapt to changing cloud application environments, and is ready for enterprise deployment at scale. SignalFx is used by Fortune 500 enterprises across financial services, apparel, industrials, telecommunications, media, and by web-scale players like Yelp, Hubspot, Acquia, and Kayak. SignalFx is backed by Andreessen Horowitz and Charles River Ventures.