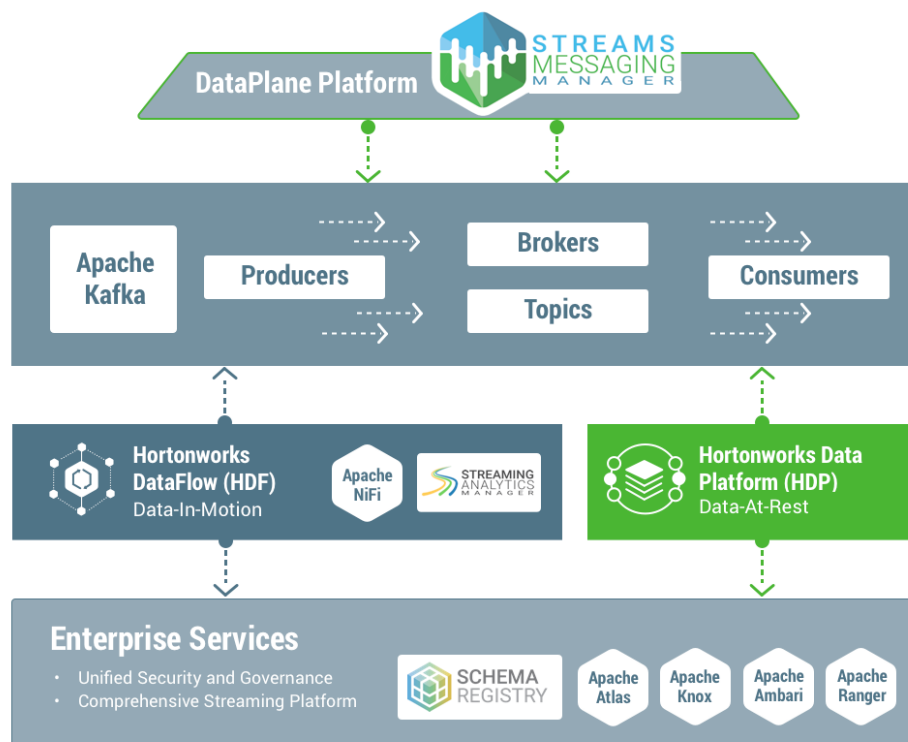# Streams Messaging Manager (SMM)

Hortonworks Streams Messaging Manager (SMM) is an operations monitoring/ management tool that provides end-to-end visibility in an enterprise Apache® Kafka® environment. With the growth of Kafka adoption in all major streaming initiatives across large organizations, the operational and visibility challenges associated with Kafka are on the rise as well. Kafka users want better visibility in understanding what is going on in the cluster across the four key entities with Kafka: producers, topics, brokers, and consumers.

With SMM, you can gain clear insights about your Kafka clusters. You can understand the end-to-end flow of message streams from producers to topics to consumers. SMM helps you troubleshoot your Kafka environment to identify bottlenecks, throughputs, consumer patterns, traffic flow etc. SMM enables you to analyze the stream dynamics between producers and consumers using various filters. You can optimize your Kafka environment based on the key performance insights gathered from various brokers and topics. With the tight integration of Apache Atlas, you can gain complete data lineage across multiple Kafka hops, producers and consumers with powerful data flow visualization.

FEATURES

1. SMM provides intelligent filtering that allows a user to select a producer, broker, topic or consumer. SMM is smart enough to show only those producers that are sending data to the selected topics and show only those consumer groups that are consuming from those topics. The filtering works on the selection of any of the four entities. This enables users to quickly hone in on the root cause when troubleshooting and debugging Kafka issues.

2. Another powerful feature of SMM is its ability to visualize all the data streams/flows across all your Kafka clusters. You can select any entity and visualize how data flows with respect to the entity selected.

3. SMM offers REST endpoints for all of its capabilities. This enables developers to integrate SMM with their other enterprise tools such as APM or case/ticketing systems.

4. SMM has been fully integrated with Apache Atlas for governance and data lineage, Apache Ranger for security and access control management, Apache Ambari for infrastructure level monitoring and lifecycle actions for the cluster, and Grafana to be able to graph Kafka metrics over time.

5. SMM is delivered as a DataPlane Service (DPS) app. This enables customers to have a single SMM instance manage multiple Kafka clusters within their organization and support hybrid cloud deployments.

Different personas in the organization have different challenges with Kafka. For a platform operations team, it was the lack of visibility at a cluster and broker level and the effects of the broker on the infrastructure it runs on and vice versa. While for a DevOps/App team, they want to know how data flows between the four entities and understand the key performance metrics (KPMs) of these entities. For the governance and security teams, the questions revolve around chain of custody, audit, metadata, access control and lineage. SMM caters to all these diverse needs across different personas.

PERSONAS	PAIN POINTS	BENEFITS
Kafka Platform Operations teams	• Difficulty troubleshooting / monitoring • Lack of visibility into Kafka clusters • Not sure which brokers are down and if they are running out of disk space • Unable to measure throughput in/out of their Kafka clusters	• Optimize your Kafka environment based on the key performance insights gathered from various brokers and topics • Troubleshoot your Kafka environment to identify bottlenecks, throughputs, consumer patterns, traffic flow etc. • Gain clear insights about your Kafka clusters
Kafka DevOps teams	• Difficulty seeing who is producing and consuming data • Difficulty understanding the flow of data from Producers à Topics à Consumers • Unable to understand consumption patterns of consumers	• Understand the end-to-end flow of message streams from producers to topics to consumers • Analyze the stream dynamics between producers and consumers using various filters
Kafka App Developers	• Unable to build monitoring applications for Ops teams • Lack of Kafka management / monitoring APIs makes building applications cumbersome	• Monitoring / Management REST APIs delivered through SMM REST server • Monitoring Rest Endpoints can be used to integrate with APM / Alerting / Ticketing solutions • Visualize and Search for events in Kafka Topics
Kafka Security and Governance Teams	• Unable to track the metadata about Kafka Topic • Difficulty understanding the lineage of data flows into and out of Kafka topics	• Gain complete data lineage across multiple Kafka hops using SMM's powerful data flow visualization tightly integrated with Atlas

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