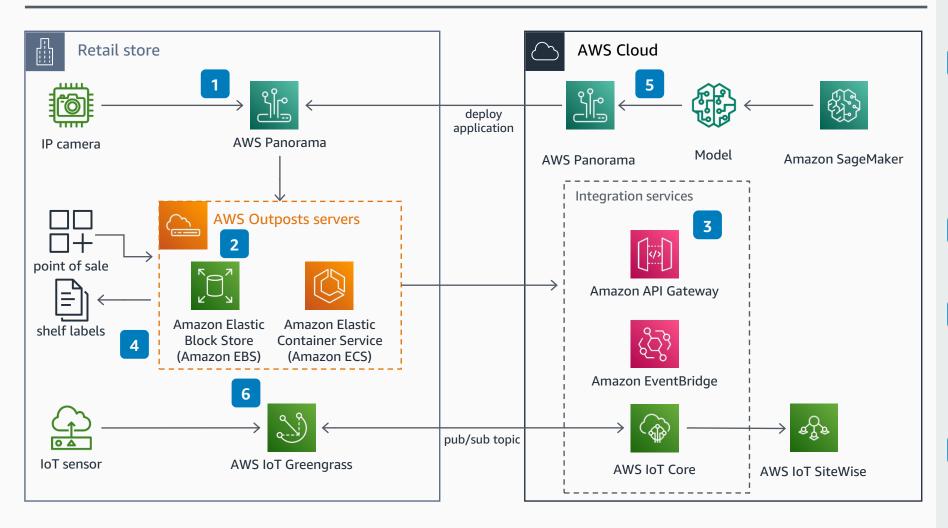
Guidance for Edge Computing in Retail on AWS

Retailers can deploy in-store workloads such as video analytics, smart marketing displays, and smart sensors that monitor equipment to improve both the customer experience and operational efficiency.



- IP cameras stream video to the **AWS Panorama** appliance for computer vision analytics.
- An **AWS Outposts** server provides compute and storage to support applications deployed at the edge, such as the in-store point of sale system.
- Integration patterns are supported to integrate to cloud-based services such as publish-subscribe (pub/sub) by using MQ Telemetry Transport (MQTT) and API-based services. Amazon EventBridge streams events from software-as-a-service (SaaS) applications and can send order information from an ecommerce site for instore fulfillment.
- Applications can present targeted marketing content driven by the video analytics on in-store displays or shelf displays.
- With AWS Panorama, you can manage appliances by deploying application and machine learning (ML) model packages. The models trained by Amazon SageMaker are compiled using Amazon SageMaker Neo to optimize them for inference on edge devices.
- AWS IoT Greengrass devices capture data such as freezer temperatures from sensors and publish to AWS IoT Core by using an MQTT topic. The MQTT messages can then be processed and visualized using additional services such as AWS IoT SiteWise. Greengrass can also be used to run custom code (as components and lambda functions) and machine learning inference locally.