
AWS
re:Invent
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ROB001

AWS IoT RoboRunner: Enabling interoperability across robot fleets

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Agenda

- Business drivers and challenges
- Introducing AWS IoT RoboRunner
- Use cases
- Getting started

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Business drivers for automated operations



Scale



Customer experience



Standardization



Cost improvement

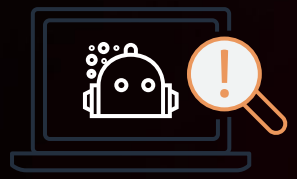
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Challenges to automating with robotics



Connecting different types of robots is challenging



Deploying robotics requires complex software-integration work



Building and integrating optimization applications is difficult

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Companies rely on robots for automated operations

2023

Mobile autonomous robots will be the standard for logistics and fulfillment processes[1]

>175

Amazon robotic fulfillment centers open around the world[2]

70%

of mobile material handling equipment will be autonomous by 2030 (compared to 2% today)[1]

>500K

robotic drive units used by Amazon around the world[2]

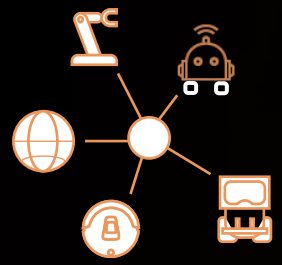
[1] IDTechEx | [2]Amazon

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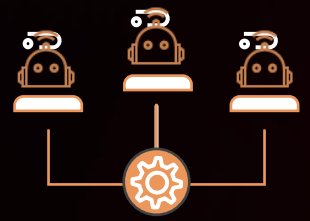
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AWS IoT RoboRunner

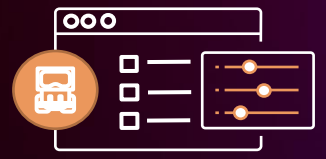
BUILD APPLICATIONS THAT HELP ROBOTS WORK TOGETHER SEAMLESSLY



Facilitate robots from different vendors working together



Connect robots to a common infrastructure



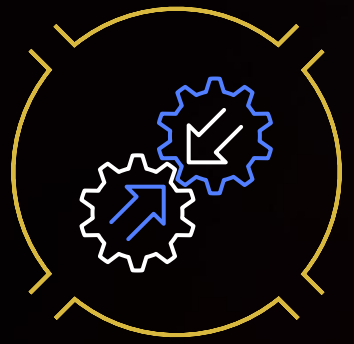
Simplify building applications for managing robot fleets

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How AWS IoT RoboRunner reduces complexity



Central data repositories for standardization



APIs to build robotics applications



Sample applications for interoperability use cases



Vendor integrations for easier deployment

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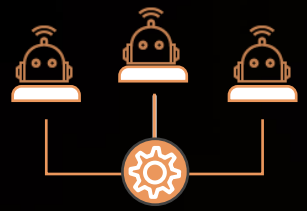


Realizing the full value of robotics automation requires

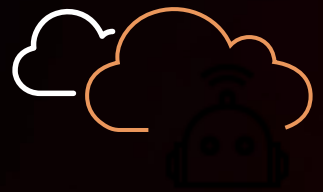
orchestration from a single view

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AWS IoT RoboRunner use cases



Facilitate robot interoperability



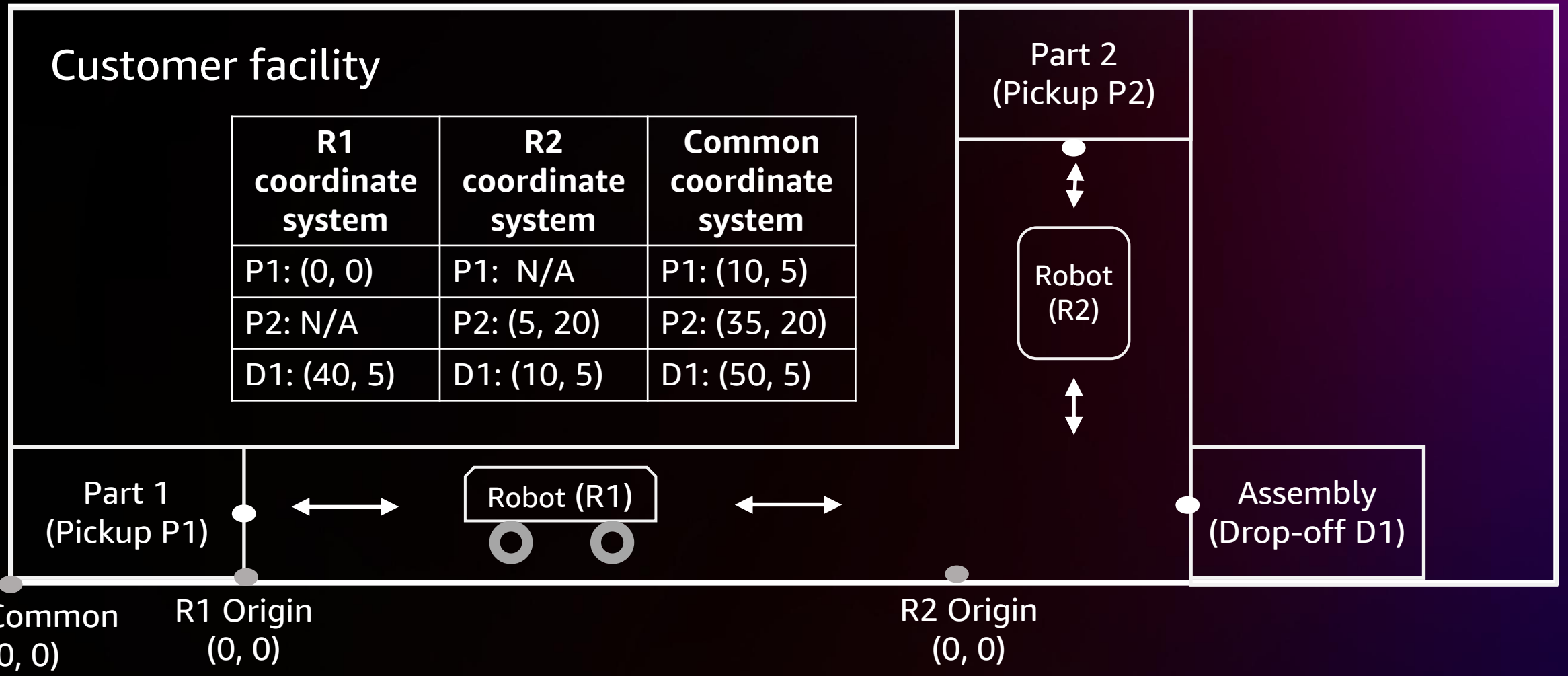
Implement shared space management



Monitor robots through a single system

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Material movement example: Coordinates

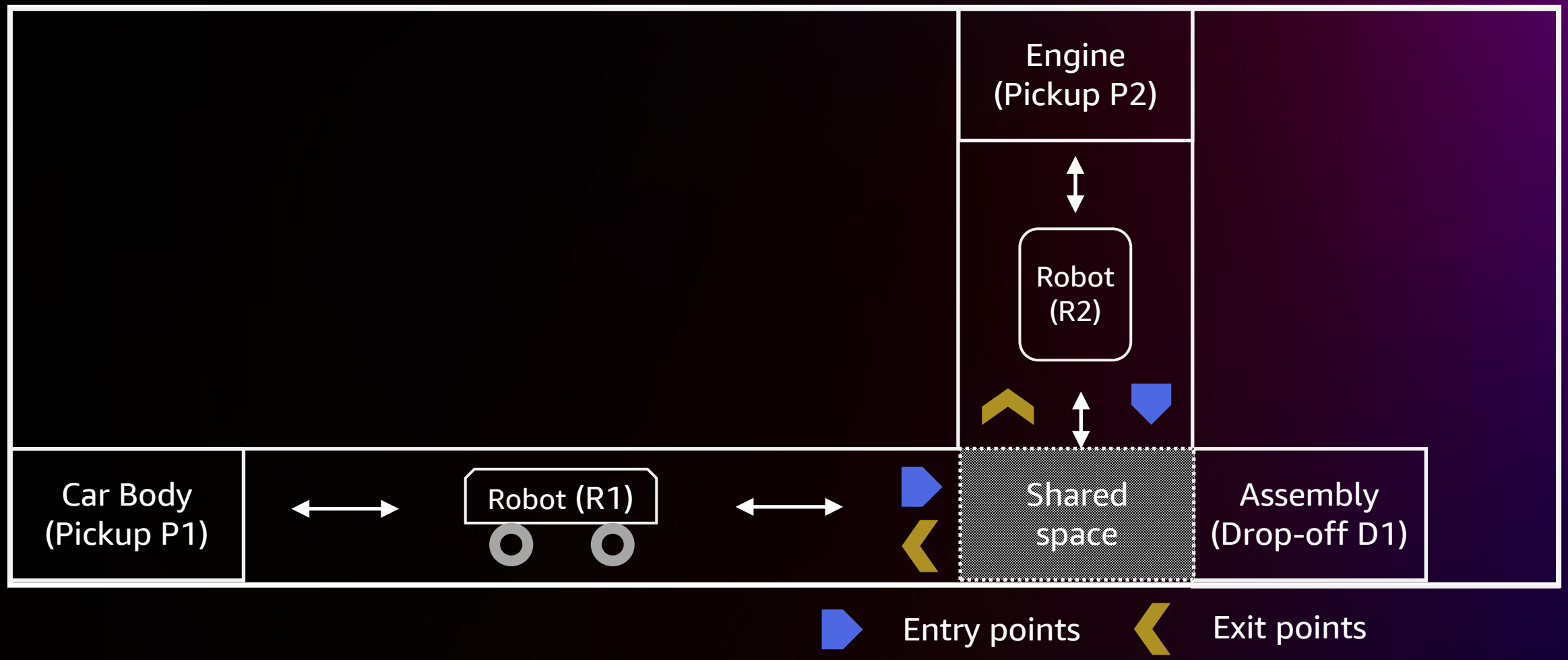


R1 coordinate system	R2 coordinate system	Common coordinate system
P1: (0, 0)	P1: N/A	P1: (10, 5)
P2: N/A	P2: (5, 20)	P2: (35, 20)
D1: (40, 5)	D1: (10, 5)	D1: (50, 5)

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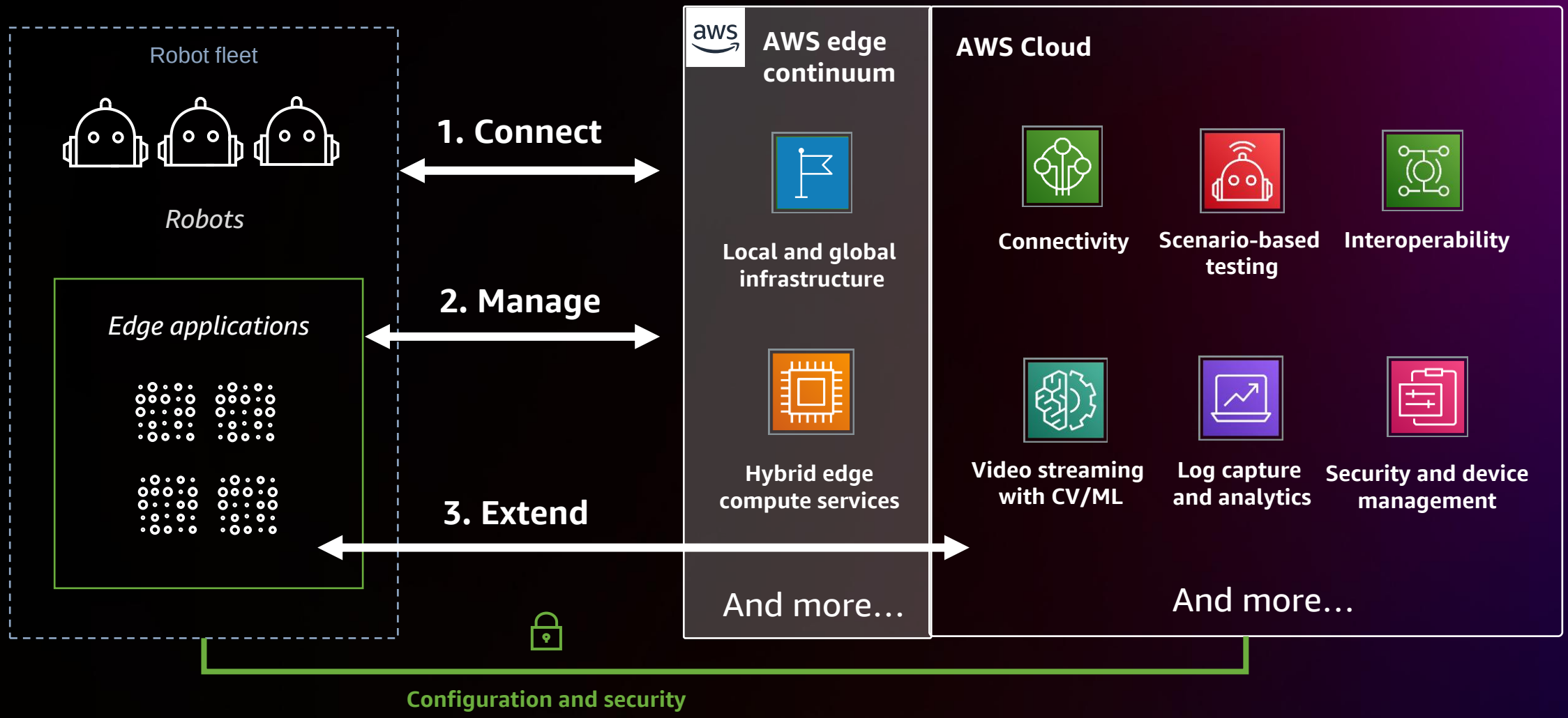
Material movement example: Shared space

Customer facility



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Advancing current generation robots with AWS



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How to get started with AWS IoT RoboRunner



If you use mobile robots in indoor manufacturing or warehousing environments . . .



. . . with multiple brands of automated vehicles deployed at single site in space-constrained environments . . .



. . . and are looking for more efficient collaboration in the environment with a unified view . . .



. . . get in touch with the AWS Robotics team at robotics-contactus@amazon.com

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Internet of Things

AWS IoT RoboRunner

Build applications that help robot fleets work together seamlessly

AWS IoT RoboRunner provides infrastructure and tools for integrating robots systems from multiple vendors and building robotics fleet management applications. See the AWS IoT RoboRunner developer guide for more details on getting started.

Get started

Start monitoring and managing your fleets.

Create site

Need assistance with your integration?

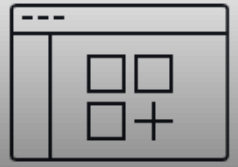
Contact service team

How it works



Setup site

Get started by describing your site in the AWS Management Console to use a centralized and managed repository for storing robot, fleet, and destination data associated with your site.



Use or develop applications

Use the shared space management sample application or develop custom applications using the AWS IoT RoboRunner APIs.

More resources

Documentation

API Reference

FAQs

Related services

AWS IoT SiteWise

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Thank you!

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