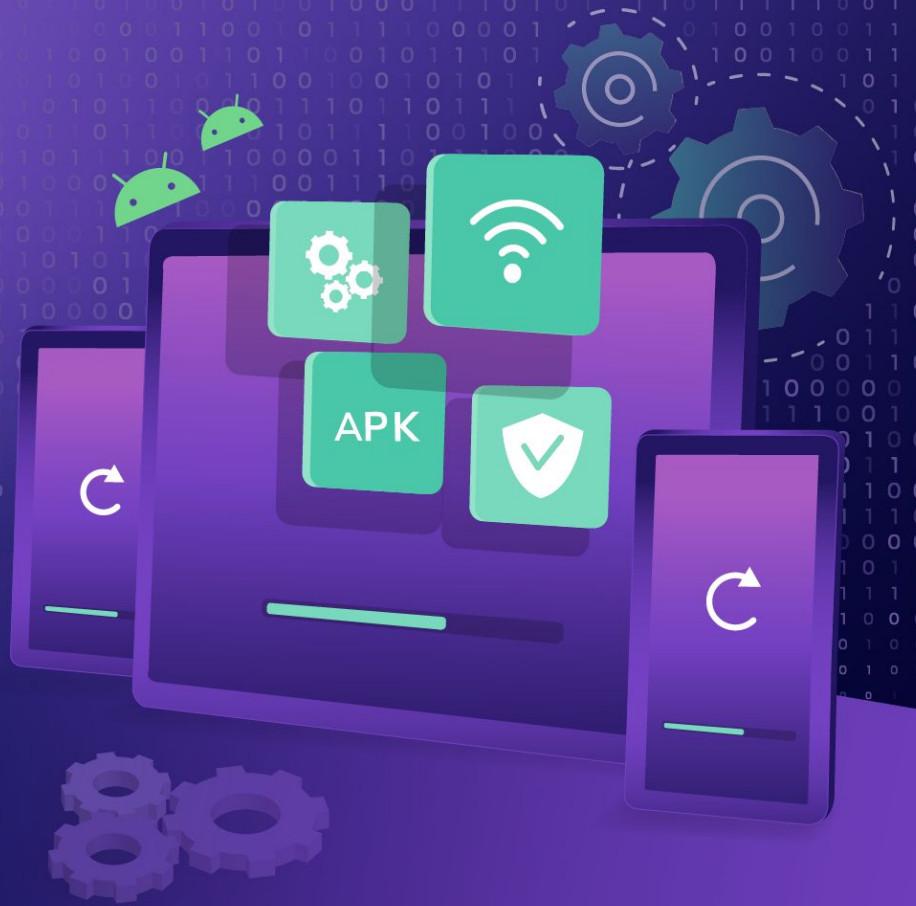
esper

Esper Guide

Design the right operational model for your dedicated fleet

Get Started



Start here.

When your devices are what connect you to your customers, you can't afford to mismanage them. Your operating model needs to flow smoothly from end-to-end to ensure your devices are where they need to be and working like they're supposed to.

In this guide we'll walk through the key things to consider as you create and execute your operational model with your customer experience in mind. This guide is for those who have already identified existing pieces of hardware to build their fleet around. It does not focus on the operational aspects of commissioning, designing, or manufacturing hardware.

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Design

Create your ideal operational flow

Build

Execute your design plans

Stage

Prepare for your deployment

Deploy

Operate your devices in the real world

Design

There are 2 main concern areas when designing your operational model: your end-to-end operational flow and how you stage your devices for deployment.

Read through the key considerations of these concern areas.

Operational flow

Think through all the nuts and bolts of operating your fleet. No detail is too small.

Key considerations

- Where are you deploying to? Can you reach the devices once deployed?
- Will it be an unattended device in the field or used by people?
- What are the technical capabilities of your end users?
- What's your budget? Can you afford things like truck rolls?
- How will you replace broken devices?

Staging requirements

Understand the necessary steps to prepare and configure your hardware for a successful deployment.

Key considerations

- You'll need to think through all your peripheral devices. Your retail device might have a credit card reader, printer, cash drawer, etc. These play an important part in how you stage and roll out your devices.

Jump to the next slide to deep dive into staging elements.

Staging considerations

Design

Device configuration

Configuration is the process that sets up all your specifications (apps, settings, etc.) on your device. Configuring your device properly is crucial for revenue generating, mission-critical devices.

Key considerations

- What are the specifications or settings for what you want to achieve with your device?
- What can you do out of the box, without any special work, to get the device to your desired state?

Adapting off-the-shelf hardware to a particular use case sometimes requires special configurations, even working with a device maker to change the device's behavior. Esper has done extensive work helping customers configure their devices. If you're struggling with this, reach out.

Device provisioning

In the simplest terms, device provisioning is setting up a device (like a tablet, display, sensor, or handset) to work in a specific manner. How you do this is influenced by what your business is, who you're working with, and your deployment strategy.

It can impact the technology choices you make and how you use your tech stack. For example, when it come to building your app you need to consider:

- How will you bind the app to your cloud?
- Do you want to do this at the time of staging for a particular account?
- Do you need to provide credentials to the user on the other end?

Jump to the next slide to deep dive into provisioning methods.

Provisioning methods

Design

Provisioning methods

Provisioning, the technique you use to prepare your devices on-site for deployment, can be done in multiple ways.

Staging at a site

Use 3PLs (third-party logistic providers) to take care of distribution and fulfillment for you

Drop shipping

Deliver your device directly to the deployment location and have it unboxed and installed there

With Esper you can use these provisioning methods, saving time and avoiding 3PL costs.

Seamless provisioning
Using Esper Foundation, our enterprise-grade AOSP for dedicated devices, you can ship devices ready to enroll with fully-remote, no-touch provisioning driven by dynamic cloud configuration. (Requires that you have device serial numbers so specific devices can be prepared in the exact way they need to.)

Six-tap QR code
Ship a box or device from your warehouse to your customer with a QR code they can scan to complete the enrollment process.

Other supported methods include Knox Mobile Enrollment, Google Touch Zero Enrollment, and Android for Work.

Build

It's time to operationalize the plans you created in the design phase.

Read through the key considerations to apply as you develop and build you solution.

Build apps

Take full advantage of the tech stack available to you as you develop your solution. For example, if you're using Esper use our Device SDK to fetch device serial numbers. This enables exact coordination between your app on the device and your cloud, so you know which user or deployment location is working with the device. You can then use this to create a superior user experience and operational flow.

Prepare for staging

Think through the requirements for your chosen provisioning method. Prototyping your provisioning method is important to making sure you actually understand your flow. Having an optimized process means deploying devices faster and achieving better operational economics.

Discover more provisioning guidance here.

Model validation

Be sure to conduct field trials, POCs, etc. Get your device out in to the real world and gather feedback with a sample set so you can work out any kinks associated with deploying or running your solution before you scale.

Provisioning considerations

Build

Method specific tips

Certain provisioning methods can require additional steps. Take note of these important tips if you're choosing these methods.

Seamless provisioning (with Esper Foundation)

To use this method, work with your device manufacturer or whoever you're purchasing devices from get the serial number or the IMEI (depending on device type) so you can load that into the Esper system. You're going to map these to your device configuration.

Drop shipping

Determine exactly where you're shipping your devices to and establish a tracking method for your shipments so you don't accidentally ship the wrong device to the wrong deployment location.

Leverage Esper's expertise

We've helped thousands of customers create more efficient and cost effective provisioning flows. When reviewing staging plans, we're often able to reduce the number of steps required and the time the overall flow takes.

One customer came to us with a near-100 page instruction manual that needed to be followed for every new device deployed. We were able to automate many of the steps and reduce them by as much as 80%.

Optimize intentionally

Your customer is always our priority. Optimizations are made based off the trade-offs you want to make for cost, user experience, etc. There maybe places you want to spend additional time or money because it adds to your user experience or it benefits another part of your operational flow.

Stage

Staging is all about setting up the out-of-box experience you want for your end users at the deployment location.

Read through the key considerations of this operational phase.

Staging location requirements

Get to know your staging location. Whether you're using a 3PL, your own site, or an on-site location, it's important to know the characteristics of the location and the minimum requirements of operating there.

Jump to this slide to learn more.

Validate your trade-offs

As you test and execute your staging process, make sure the trade-offs you chose regarding cost, flexibility, efficiency, and/or end-user experience are delivering the experience as you imagined it.

Out-of-the-box experience

Think through who will be unpacking your device at the deployment location and their level of technical savvy. This will ensure you're designing the best out-of-the-box experience, preventing headaches for both users and you down the line.

See examples of creating the right out-of-the-box experience here.

Example: Staging location requirements

Stage

Scenario: Inadequate internet connection at the staging site

The ability to get the APKs down through that internet connection is going to limit your throughput through staging, which will slow you down. The severity of this issue depends on how big your app is and what your throughput is.

Solution considerations

- You can use techniques like local caching of your APK on the internet to improve this situation.
- Beware this can introduce other issues. Esper has seen this bring up leasing issues with IP addresses. In one situation, the staging site IT department set it up so any device that popped up and grabbed an IP address held it for 24 hours. They were moving so many devices through staging they ran out of IP addresses in the middle of a heavy deployment cycle.
- It's important to know what your overall IT infrastructure is. If you're using Wi-Fi or even Ethernet, do you have a sufficient number of IP addresses for your flow rate?

Example: Out-of-the-box experiences

Stage

Scenario 1: Technician focused

Your device will be an unattended device, such as a kiosk, so your out-of-the-box experience will be targeted at the technician setting up the device.

Key considerations

- A curated out-of-the-box experience might not matter as much in this scenario compared to when you're sending the device to an end user.
- You might choose to execute less set-up upfront since the technician will be onsite anyways and can perform those operations. This could reduce your overall cost as you may have a minimum pay or time the technician is required to be there.
- When you look at your flow overall you're saving costs in the early stages and loading more costs towards the end of the process.

Scenario 2: End user focused

You're delivering tablets for remote patient monitoring to patients' homes. Patients are typically elderly and not tech savvy.

Key considerations

- Considering you have an older user base and their using healthcare-based devices (i.e these devices are being used for time sensitive, health dependent, or life-saving situations), you're going to want to take care of as much set-up as you can.
- The out-of-the-box experience really matters from an operational aspect as well. A poor experience will cause user dissatisfaction, and probably cost you more money for the support loop you'll need to take care of them if you don't get it right.

Deploy

Operating your devices in the field requires both proper set up and long-term monitoring of your fleet.

Read through the key considerations of this operational phase.

Network considerations

Just like for your staging location, it's crucial to understand your deployment location and the requirements of operating within it.

Key considerations

- Wi-Fi credentials
- Cellular coverage
- Firewall

Jump to this slide to learn more.

Ensure performance

How do you make sure your initial deployment is flowing the way it should be? This is all about your ability to monitor, debug, and update your deployed devices.

Discover how Esper supports fleet management for optimal long-term performance here.

Network considerations

Deploy

Wi-Fi credentials

- Wi-Fi is a great way to get superior economics and avoid cellular coverage issues.
- The process for entering Wi-Fi credentials into your device will depend on your target user profile and technical acumen. For example, older users may have lower technical skills, but sometimes there are caregivers or younger family members around to support them.

Cellular coverage

- Having cellular coverage can deliver a great out-of-box experience. When a user turns on the device it automatically works.
- You can combine this with using Wi-Fi credentials to save costs and avoid eating up cellular data at the same time.

Firewall

- The software infrastructure on your devices that talks to the cloud needs to have the precise allow list so they'll work with the firewall.
- Work with IT department and supplier to ensure your device can properly talk to the internet so the solution will operate.
- Not a typical issue for SMBs, and for larger customers or enterprises, it's usually fairly uniform.

Ensure performance with Esper

Deploy

Device configuration

Now that you've deployed your devices, monitoring their health, security, and performance is the next most important thing.

Key considerations

- How do you monitor the status of your devices?
- How do you update configs?
- How do you update or change devices when they're in the field?
- How do you roll out app updates?

Monitoring a fleet of edge devices requires the telemetry and operational agility to restore device health before an isolated incident impacts the experience of customers.

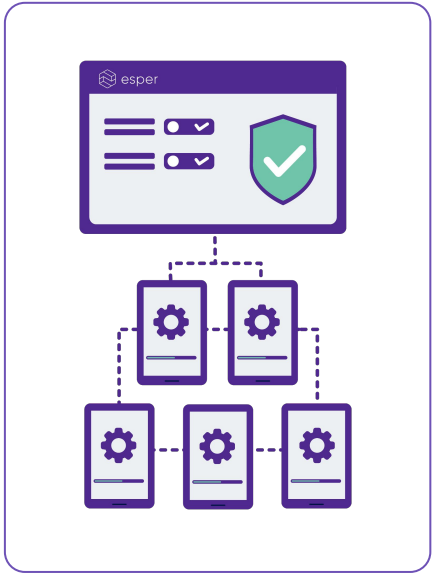
Device operations teams need a single pane of glass to monitor the entire fleet and intelligent alerts to avoid excessive noise and uncover meaningful patterns.

Intelligent tooling and powerful infrastructure for smart devices

Esper gives you the bird's eye view of every device in your fleet, from a single pane of glass to ensure your out-of-the-box experience for end users is reliable and high-impact.

- Remotely view, control, and debug your devices from anywhere
- Leverage real-time observability and monitoring to manage drift
- Deploy updates with agility using DevOps CI/CD pipelines
- Improve fleet organization with parent-child hierarchies and scalable device configurations
- Stay in control and keep your devices secure with easy-to-deploy updates

Need more help?



Learn more about Esper

We've helped many leading organizations modernize their business, from those struggling with legacy devices to those dealing with the limitations of traditional MDMs.

Learn more about how we can help you build agility into the ways you deploy, manage, update, and secure your fleet of devices and the software it runs on.

Visit our website or connect with an in-house expert.