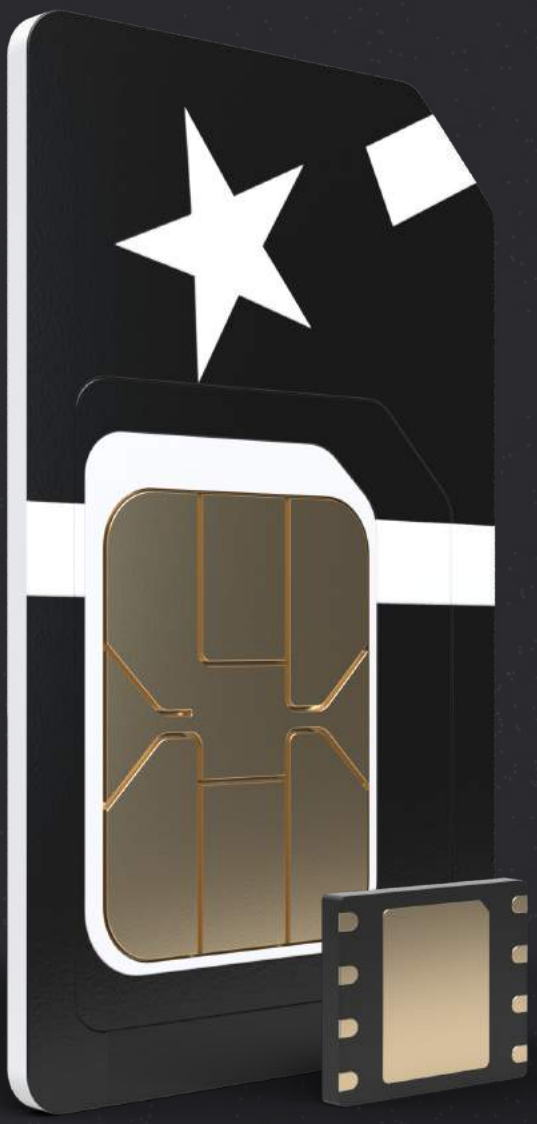
SORACOM



An Introduction to

SORACOM

IoT Connectivity and Management Platform
for the World's Most Ground-Breaking Tech.

www.soracom.io

You create.
We connect.

Soracom provides technical innovators with all the tools they need to build a more connected world. Our IoT connectivity and platform services offer a wide variety of solutions, for any stage of IoT deployment. From prototype to V2 and beyond.

SORACOM AT A GLANCE:

IoT connectivity for
+20K
businesses worldwide

Connecting
+3mil
IoT devices

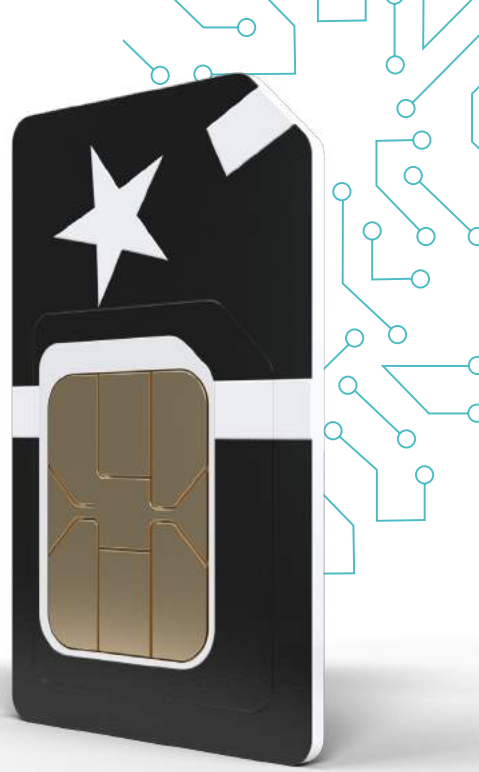
IoT coverage in
150
countries

In this overview document, we'll share a high-level overview of just some of the ways Soracom powers is helping more than 3 million devices around the world.

Contents

Ready to take the next step?
Our team of IoT experts is on hand to talk about your requirements.
Book your free IoT consultation at **soracom.io/contact**.

SIM Lifecycle Management



With many IoT providers, SIM cards need to be ordered by speaking with account managers and often require minimum order quantities and lengthy negotiations. But that's not the case with Soracom.

When you connect IoT devices with Soracom, every element of your SIM's lifecycle can be managed yourself, either through our User Console or programmatically via our REST APIs.

What parts of the SIM lifecycle can be managed in Soracom?

Ordering
Purchase new SIMs at your tempo – whether you just need a small handful for prototyping, or if you're ordering many thousands in bulk.

SIM Management
Assign names to every SIM, and group them together so that different actions can be carried out in bulk.

Security
Restrict SIMs to be used in a specific device with IMEI lock, and use CHAP Authentication for additional security

Visualize Data Usage
View the data usage of every SIM or group of SIMs, broken down by month, day, and hour, and check which mobile network operators the SIM has connected to.

Automation
Easily set up advanced automation, such as configuring a rule that deactivates a SIM card when it has exceeded a certain amount of usage and sends an email notification to alert you and your team.

Built for Developers

Our powerful REST API lets you programmatically control every aspect of your IoT network from the ground up. Full developer documentation can be found at **developers.soracom.io**.

Soracom SIM Cards

Connecting devices to Soracom over cellular requires a Soracom SIM – either a removable 3-in-1 IoT SIM Card, an eSIM, or our iSIM technology.

IoT SIM Card

A removable, 3-in-1 SIM card that breaks down to standard/mini (2FF), micro (3FF) or nano (4FF) form factors.

eSIM

An embedded SIM (MFF2) that's soldered directly onto your device, meaning they can't be physically removed or lost.

Products in Play

- Soracom Air
- Soracom Arc

Serverless Data Visualization

With our serverless data visualization tools, you can collect, store and view data transmitted from all your devices and SIMs at any time – no server or storage setup required.

Soracom makes it easy to see data coming in from either a single SIM, or from your entire network of IoT devices, and create on-the-fly time-series and GPS visualizations.

You can also create more advanced dashboards that combine multiple graphs, tables, maps and more, all with just a few clicks, which can be shared with your team on public screens and kiosks. No need to set up databases, servers, or any other infrastructure.

Connecting Devices to the Cloud

Once a device has connected to a cellular network with a Soracom SIM card, it can communicate securely over a closed cellular network. Data can then be transmitted effortlessly between the device and the Soracom platform.

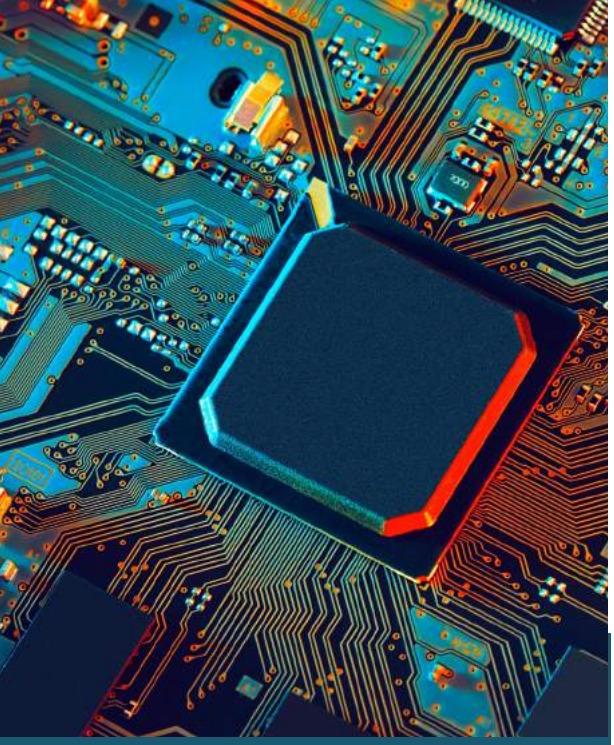
From there, Soracom can directly integrate with leading cloud platforms - such as AWS, Google Cloud Platform, and Microsoft Azure – without storing SDKs or credentials on devices.

A Direct Link to Your Cloud of Choice

Send data from any device connected with Soracom to a predefined endpoint for automatic ingestion by your preferred cloud service. No relay server, SDK installation, or on-device credentials are required.

Soracom currently supports direct integrations with:

- AWS IoT
- Amazon Kinesis
- Amazon Kinesis Firehose
- Microsoft Azure Event Hubs
- Google Cloud Pub/Sub



Integrations with cloud functions

You can also take data transmitted from Cellular, Sigfox, and LoRaWAN devices through TCP, UDP, HTTP, SMS, USSD, and LPWA protocols, and send it to major FaaS (function-as-a-service) providers without any complicated setup. Soracom currently supports direct integrations with:

AWS Lambda

Azure Functions

Google Cloud Functions

Reducing IoT Data Costs

Soracom can help optimize the efficiency of your data consumption, which can drastically:

Increase the battery life of your device

Lower your monthly IoT usage bill.

For example, data can be securely transmitted from devices over low-data protocols – such as UDP, TCP, and HTTP. Soracom can then convert this to HTTPS before sending it off to your cloud provider.

Soracom also supports data protocol conversion from MQTT to MQTTS.

Products in Play

- Soracom Beam
- Soracom Funnel
- Soracom Funk
- Soracom Orbit

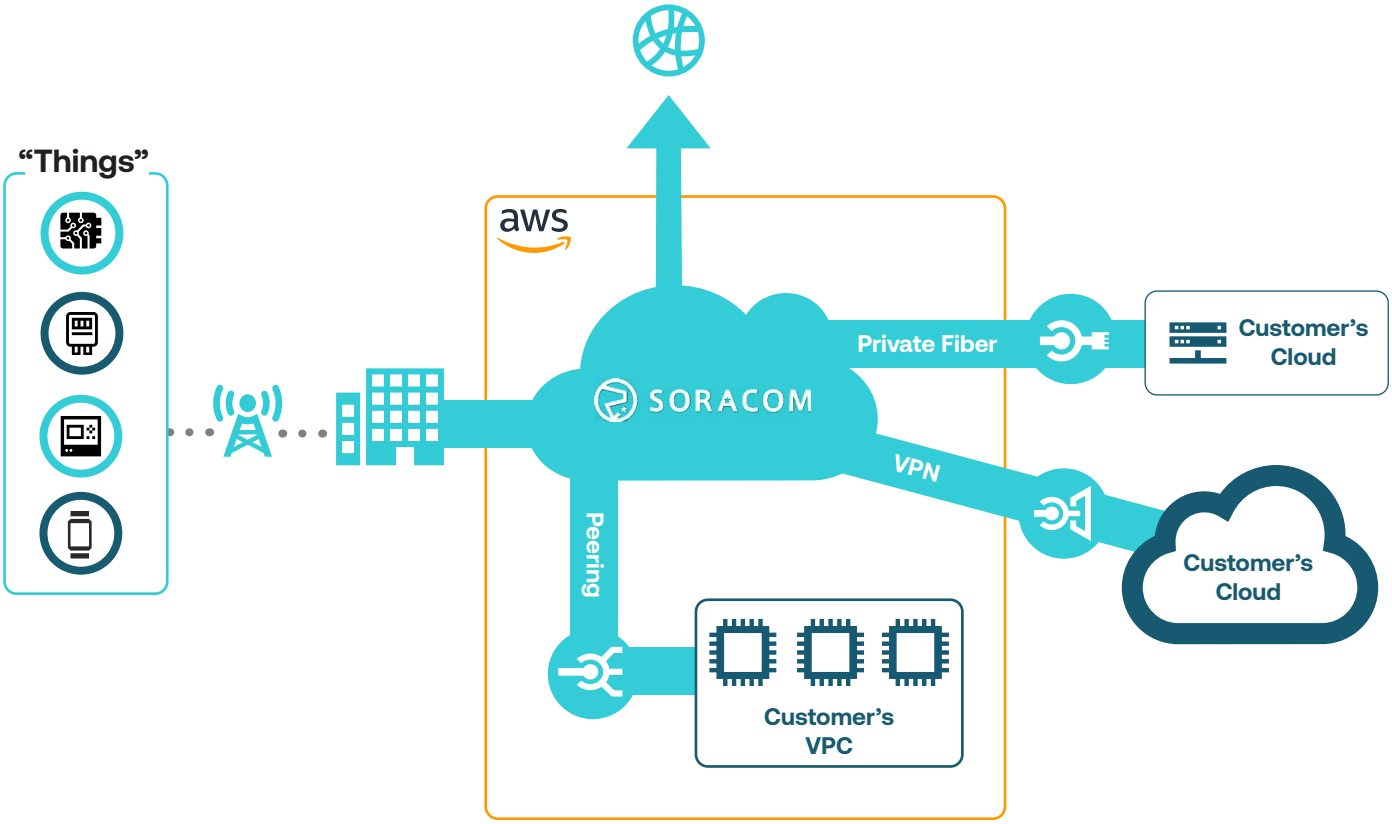
Securing Devices & IoT Backend

Security is one of the most important things to consider when it comes to IoT. However, keeping devices and an IoT backend safe is challenging when they are exposed to the public internet.

Soracom offers a number of network services to keep your IoT deployment secure, mitigating the risk of data breaches in your application.

Soracom Virtual Private Gateway (VPG):

- Soracom VPG is a gateway dedicated specifically to individual soracom customers.
- Once configured, your traffic is segregated and routed privately, away from any public networks.
- You can configure the VPG to integrate with either:
  - AWS VPC Peering
  - VPN
  - Private fiber channel



Mitigating Security Risks

With Soracom, you're able to deploy a highly secure end-to-end IoT system, where it's impossible to expose any element of the application to an attacker.

Potential Security Risk Scenarios

#1

An attacker tries to tap the network in the middle

Response:

Soracom's cellular link and backhaul connection is protected

#2

An attacker tries to steal credentials to access the network

Response:

- **Soracom SIMs are tamper resistant**
- **You can configure the network side IMEI lock to make sure the SIM can only work with the designated device**

#3

An attacker tries to reach out to the devices via the public Internet

Response:

Access is blocked by Soracom's stateful firewall

#4

An attacker tries to reach out to the backend

Response:

The IoT backend is no longer exposed to the public Internet

Products in Play

- **Soracom VPG**
- **Soracom Canal**
- **Soracom Direct**
- **Soracom Door**

Troubleshooting and Accessing Devices Remotely On-Demand

Once IoT devices are deployed, sending engineers into the field to carry out troubleshooting or maintenance on hardware can become a huge expense. When you have tens, maybe even hundreds of thousands of devices, this can become a virtually impossible task.

Fortunately, Soracom offers a number of innovative solutions that allow technical innovators to securely access every device remotely, totally on-demand.

Better yet, remote access is available without setting up any relay servers or installing agent software on the device.

Secure, remote access at your fingertips

When you enable on-demand remote access, Soracom will assign a random IP address (with a corresponding hostname) and port.

You can then connect to the device using the assigned IP address and port, using any TCP protocol, such as SSH, RDP, VNC, and HTTP/HTTPS.

From there, you can remotely connect using SSH to change a device's settings or access its web-based interface for troubleshooting.

Capture Packets

When something goes wrong with a device deployed in the field, it can often be difficult to troubleshoot. Perhaps it is sending data but the backend server isn't responding. Maybe it's consuming an unusual amount of data, and it's virtually impossible to find out why.

With Soracom, you can inspect the network behavior of any device remotely by capturing packets or IP traffic quickly and easily, without setting up any servers to mirror or inspect traffic.

This solution can be used in situations where you are typically unable to inspect your devices' network behavior. Examples might include:

- A device that suddenly stops communicating with your server
- A device that starts behaving abnormally
- A device that requires debugging of any sort

Once the packet capture session has been completed you'll be able to download a .pcap file from Soracom, which can then be uploaded into a packet analyzing tool like Wireshark for analysis.

Send a Ping to Any Device Remotely

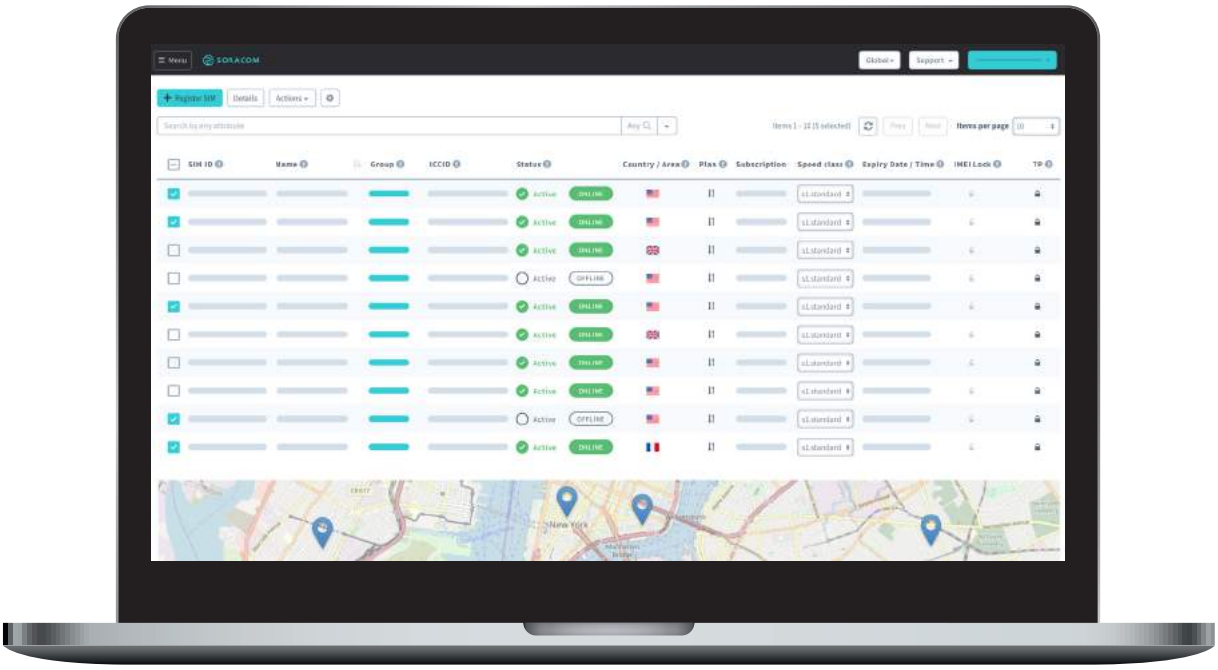
Developers will often use an Internet Control Message Protocol (ICMP) to send a ping request directly from a device to their server to check that the device is able to communicate with the server. But it can sometimes be the case that the device is successfully connected to Soracom, but a different network error exists between Soracom and the server. If your device is having trouble pinging your server, you can instead ping **pong.soracom.io** to quickly deduce if the network issue is related to the server, or to the device.

However, when a device is deployed remotely, it's sometimes impossible to access the device directly to initiate a ping test. With Soracom, you can also send a ping request in the opposite direction – that is, from the Soracom network to your device.

This functionality is available either from the Soracom User Console or with a CLI, and provides a powerful way of quickly checking that your cellular IoT devices are online and able to send and receive IP traffic – no matter where in the world they are located.

Products in Play

- **Soracom Napter**
- **Soracom Peek**
- **Ping**



Technical Resources

At Soracom, we put our customers at the heart of every decision we make. Our customers influence our roadmap and help us deliver pioneering solutions, making Soracom the most complete toolkit for technical innovators seeking to build a more connected world.

Customer Support

There are three core pillars to our customer support:

1. Standard technical support is available to all customers at no additional cost
2. You'll also have access to the Soracom system status dashboard to check for known issues that may be affecting your devices
3. We also publish full platform documentation and getting started guides on our developer site: **developers.soracom.io**

Getting Started with Soracom

You've now seen a high-level overview of the Soracom platform and should have a better understanding of how we provide technical innovators with all the tools they need to build a more connected world.

Ready to get started with Soracom?
Our team of IoT experts is always ready to talk about your requirements.

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