LoRa Cloud™ Join Server

LoRa Cloud Join Server allows you to quickly and securely connect your end devices to and associate them with a particular LoRaWAN® network without ever exposing the encryption keys.

Join Server contains the data that is needed to process uplink join requests frames and generate the down-link join accept frames. In addition, it is the network component that derives the network and application session encryption keys.

Onboard Your Pre-Provisioned Devices By Connecting Your LoRaWAN® Network To Our Join Server

Join Server Explained

Traditionally, device owners had to trust their hardware supply chain of ODM or CEM to not only provision their keys into devices, but also securely handle that key material to ensure it was kept safe to prevent unauthorized duplication. Device owners would receive the keys which they could use to then input into a network server operating with the LoRaWAN standard.

With LoRa Cloud Join Server, we remove those risks through pre-provisioning; the root keys are injected into the LoRa Edge™ LR1110 chip in the factory. This process provides the highest level of security, as the root keys never leave the devices and are stored in Semtech-managed High Security Modules (HSM), connecting and communicating directly with the network server. In addition, although not as secure, it is also possible for non-LR1110 based LoRaWAN devices to use Join Server by providing root keys to Semtech through an out-of-band key ceremony.

Another benefit is that our Join Server offers the independence and flexibility for you to change your network server provider in the future, if desired.

The service interfaces directly with a wide range of network servers compliant with the LoRaWAN standard including Actility, The Things Industries, Orbiwise, LORIOT, and Chirpstack. Although most network servers come with their own Join Server, the benefit of using a Join Server from Semtech is that we are a neutral party in the LoRaWAN ecosystem and therefore facilitate seamless migration of devices to a new network server.

Features & Benefits

- Pre-provisioned device keys
- Full control over device claim
- Reduced costs associated with factory key provisioning
- Reinforced security by ensuring keys are stored on the device and never exposed
- LoRaWAN compliant
- LoRaWAN network server flexibility: compatible with LoRaWAN network server providers including Actility, Things Industries, Orbiwise, LORIOT, and Chirpstack
- Independent join server to ensure seamless connection to networks with management and security of keying process with CM/OEM
- Offered as a SaaS solution
- Great value for a fee of $0.20 per device, only once in the lifetime of the device

LoRaCloud.com

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LoRa Alliance®
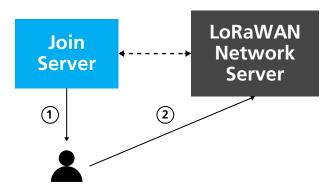## Back End Specification

Semtech Root of Trust

Pre-Requisite

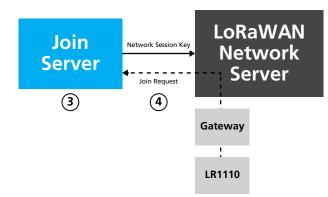Ensure LoRaWAN Network Server is compliant to LoRa Alliance Back End Specification

- Login to LoRa Cloud™ Join Server console and download LoRaWAN Network Server certs + keys (Join Server Credentials)*

- Login to LoRaWAN Network Server and input Join Server Credentials*

- Claim devices in Join Server (using PIN/owner token)
  a. Repeat for future devices which need to be provisioned

- Join requests will now be forwarded to LoRa Cloud Join Server which will then provide LoRaWAN Network Server with Network Session Key

  * These steps are not required if using a pre-integrated public network

STEP 1 (Pre-Req):
LoRa Cloud™ Join Server Integration

STEP 2:
Device Join Process

Create your account on
LoRaCloud.com
to start using Join Server

Join Server is fully compliant with the LoRaWAN® Standard as defined by the LoRa Alliance. For more information please visit:

https://lora-alliance.org/
https://lora-alliance.org/about-lorawan/

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