


Connect Tektelic gateway to LORIIOT using Semtech Basic station

 This documentation assuming root access, if you are using admin, please add **sudo** to all the commands.

Install Tektelic Basic Station

1. SSH credentials can be found in the test certificate of the gateway. The gateway's IP address can be identified using IP scanning tools([Kona Gateways General FAQ](#))

- ```
1 ssh <root or admin>@<gateway IP>
2 example:
3 ssh root@192.168.0.10
```

2. Check System Version

- Run the following command:

```
1 system_version
```

- If **tektelic-bstn** showed on the **system\_version** output, skip the install basic station part, go to **Commission the gateway** part.

3. Verify Kona Packet Forwarder

- **Important:** Make sure kona packet forwarder (default packet forwarder to Tektelic gateways) is up and running, please confirm this log is updating and does not show error:

- ```
1 tail -f /var/log/pkt_fwd.log
```

4. Prepare BSP Files:

- Write down the BSP
- Download or transfer the corresponding BSP to the `/lib/firmware/bsp` folder. BSP files are available at: <ftp://ftp.tektelic.com>, Refer to the [Access Tektelic FTP Server](#) for more details.
- If the `bsp` folder does not exist, create one using WinSCP or the following SSH command

- ```
1 mkdir -p /lib/firmware/bsp
```

5. Transfer BSP Files

- Use WinSCP or Filezilla with the SFTP protocol to transfer files.
  - Username and password: **same as SSH credentials**.
  - Port: **22**.

6. Run those commands to create a snmp feed file

- ```
1 rm -f /etc/opkg/snmpManaged-feed.conf
2 echo 'src/gz bsp file:///lib/firmware/bsp/bsp'>>snmpManaged-feed.conf
3 echo 'src/gz gpio-fpga file:///lib/firmware/bsp/gpio-fpga'>>snmpManaged-feed.conf
4 echo 'src/gz tektelic-networking-extra file:///lib/firmware/bsp/networking-extra'>>snmpManaged-feed.conf
5 echo 'src/gz tektelic-python-extra file:///lib/firmware/bsp/python-extra'>>snmpManaged-feed.conf
6 echo 'src/gz tektelic-utils file:///lib/firmware/bsp/utils'>>snmpManaged-feed.conf
7 echo 'src/gz tektelic-webserver file:///lib/firmware/bsp/webserver'>>snmpManaged-feed.conf
```

7. Install Basic station by run the following commands:

- ```
1 opkg update
2 opkg install tektelic-bstn
3 cd /lib/firmware; rm -R bsp
```

**Note:** If you are an admin, avoid `sudo cd`; just use `cd`.

## Commission the gateway

1. SSH in the gateway as root or admin, if using admin, please add `sudo` to the commands.
2. Edit Configuration:
  - Modify the `/etc/default/bstm.toml` file for basic station configurations.

```
1 vi /etc/default/bstm.toml
2 i
3 set "the skip_cups = true"
4 escape
5 :wq
```

## 3. Add Gateway to LORIoT LNS

- Navigate to: **Home page** → **Network** → **Your Network** → **Add Gateway**.

The first screenshot shows the LORIoT dashboard with a sidebar on the left containing 'Dashboard', 'Applications', 'Networks', 'Join Servers', 'Account', 'Upgrade', and 'Alerts'. The main content area has a 'Charts' section with four gauges: 'Gateways (0)', 'Devices (0)', 'Uplinks / Downlinks (0)', and 'Join Request / Join Accept (0)'. Below this is a 'Gateways' section with a map and 'Total: 2'.

The second screenshot shows the 'LoRaWAN® Networks' page with a table of networks:

| Network ID | IP | Name           | Gateways | Org. User Access | Ownership    | Country | City | ZIP |
|------------|----|----------------|----------|------------------|--------------|---------|------|-----|
| A00066F    |    | Sample network | 2        | Disabled         | Owned by you |         |      |     |

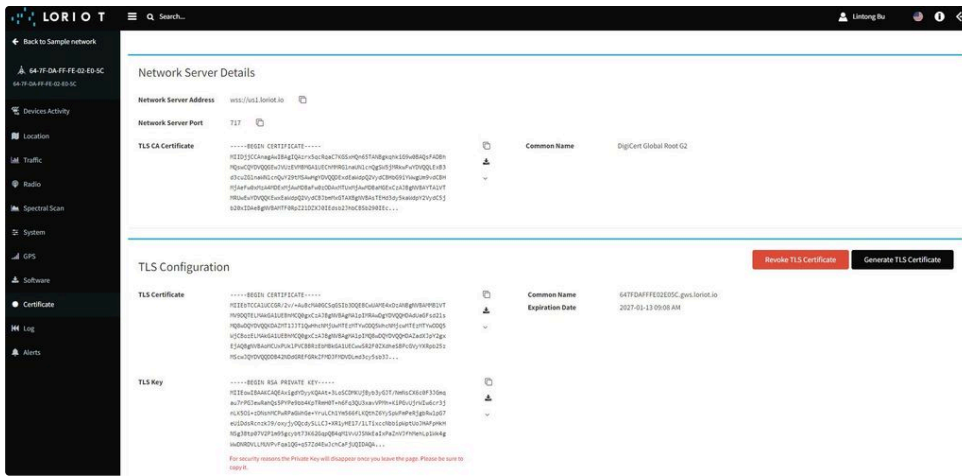
The third screenshot shows the 'Sample network' configuration page. It includes fields for 'Creation Date' (10/27/22, 2:39 PM), 'Network ID' (A00066F), 'Organization User Access' (Disabled), and 'Network Organization UUID' (c8e77a2f-8af5-4e0f-ba2f-f239f2553a0). There are 'Add Gateway' and 'Configure' buttons. A pie chart shows gateway status: 50% Online, 50% Offline, 0% Never seen. Below is a table of gateways:

| Name                    | IP | GW EUI                  | MAC               | Model                    | Version               | Status  | Last Data         |
|-------------------------|----|-------------------------|-------------------|--------------------------|-----------------------|---------|-------------------|
| 64-7f-0a-ff-ff-00-88-f8 |    | 64-7f-0a-ff-ff-00-88-f8 | 64-7f-da-00-88-f8 | Teklogic Kona Enterprise | 0.0.0                 | Offline | 31/12/09, 5:00 PM |
| 64-7f-0a-ff-ff-02-e0-5c |    | 64-7f-0a-ff-ff-02-e0-5c | 64-7f-da-02-e0-5c | Basics Station Seentech  | Teklogic Kona gateway | Offline | 31/12/09, 5:00 PM |

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- Choose **Basics Station** and input the gateway's MAC address.





- o **Important:** Certificates will be lost if the web page is closed. If this happens, revoke and create new certificates.

## 2. Transfer Certificates

- o For Root Users:

- Map certificates as follows (**ensure correct file naming**):

- Network server Address and Port -> tc.uri

- For example:

```
1 wss://us1.loriot.io:717
```

- Rename or copy the TLS CA Certificate to tc.trust

- Rename or copy the TLS Certificate to tc.crt

- Rename or copy the TLS TLS key to tc.key

- Transfer the files to /etc/bstn

- o For Admin Users:

- Transfer the file to /home/admin directory or touch the files in /home/admin directory

- Network server Address and Port -> tc.uri

- For example:

```
1 wss://us1.loriot.io:717
```

- Rename or copy the TLS CA Certificate to tc.trust

- Rename or copy the TLS Certificate to tc.crt

- Rename or copy the TLS TLS key to tc.key

- Ensure proper permissions:

```
1 sudo chown root:root /home/admin/tc*
```

- Move the certificates to /etc/bstn

```
1 sudo mv /home/admin/tc* /etc/bstn
```

## 3. Set Region and Band

- o Ensure the correct region and band are configured on LORIoT LNS.
- o **Incorrect region settings will prevent downlink and sensor joining.**

## 4. Restart Basic Station Service

```
a. 1 /etc/init.d/tektelic-bstn restart
```

