



TEKTELIC COMMUNICATIONS INC.

**BULK COMMISSIONING OF
GATEWAYS AND DEVICES
NETWORK SERVER RELEASE VERSION 2.0.1**

Issue Date: 03/08/2019

Overview

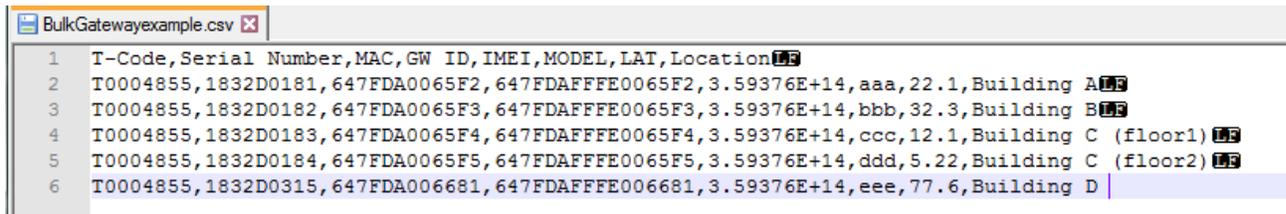
On February 28, 2019 Tektelic Communications Inc. released a new Network Server Feature which supports the bulk commissioning of gateways and devices. As this is a first release of this feature, we would appreciate your feedback. If you experience any issues, please submit a support ticket and a member of our team would be happy to assist you.

Please note: We recommend first time users of this feature to start with 3 gateways/devices so that any mistakes in formatting are easier to correct.

Bulk Gateway Commissioning

- 1) Create a .csv (comma separated file) that contains the Gateway ID and MAC address for all gateways you wish to commission. These should be entered their own column using the titles GW ID and MAC. You should also include other information that will make up the name of your gateway. For example, if you would like your gateway name to be in the format “serial number – t code – location” you should include serial number, t-code and location as columns in the file.

There is no limit on the number of columns you can have, and the column names can contain spaces. However, all gateways must be of the same type and frequency. An example file created using Notepad ++ is shown below. It is possible to create the .csv file using excel, however you may still require Notepad ++ change the end of line characters to Unix/Linux. (See Common Errors and Known Limitations section below for information on changing EOL)



```
1 T-Code, Serial Number, MAC, GW ID, IMEI, MODEL, LAT, Location
2 T0004855, 1832D0181, 647FDA0065F2, 647FDAFFFE0065F2, 3.59376E+14, aaa, 22.1, Building A
3 T0004855, 1832D0182, 647FDA0065F3, 647FDAFFFE0065F3, 3.59376E+14, bbb, 32.3, Building B
4 T0004855, 1832D0183, 647FDA0065F4, 647FDAFFFE0065F4, 3.59376E+14, ccc, 12.1, Building C (floor1)
5 T0004855, 1832D0184, 647FDA0065F5, 647FDAFFFE0065F5, 3.59376E+14, ddd, 5.22, Building C (floor2)
6 T0004855, 1832D0315, 647FDA006681, 647FDAFFFE006681, 3.59376E+14, eee, 77.6, Building D
```

- 2) Upload the file the file to the network server.
 - Under Gateway Groups, create a new group by clicking the “+” icon in the upper right-hand corner, or select an existing one. Within the group, select “Manage Gateways”, and then click the up arrow in the upper right-hand corner to access the bulk commissioning feature.



- upload your file your created in step 1.

3) Complete Gateway information

- Select the model of Gateway you are commissioning from the menu.
- Create the name format for your gateways using the data from your .csv file. This is case sensitive, so the name of the column must be entered exactly as it is on your file. If entering multiple column names, use a delimiter (-,./ etc.) to separate. You can add general text as well, however this will be added to the name of every gateway instead of pulling unique information from your .csv file. In the example below, we want our gateway name to be in the format serial number – Code therefore would type “Serial Number” press enter “-” press enter “T-code” press enter.

Gateway bulk commissioning

SELECT A FILE

Value from column 'GW ID' in the file will be used to set a gateway ID

Gateway model
Kona Micro US GW

Add the column names and delimiters (press 'Enter' key after column name or delimiter typed)

Number X - X SN X |

Add the column names to add the values to the description field

Add all the other column values to description

Add the location columns

Location column Latitude column Longitude column Altitude column

START COMMISSIONING

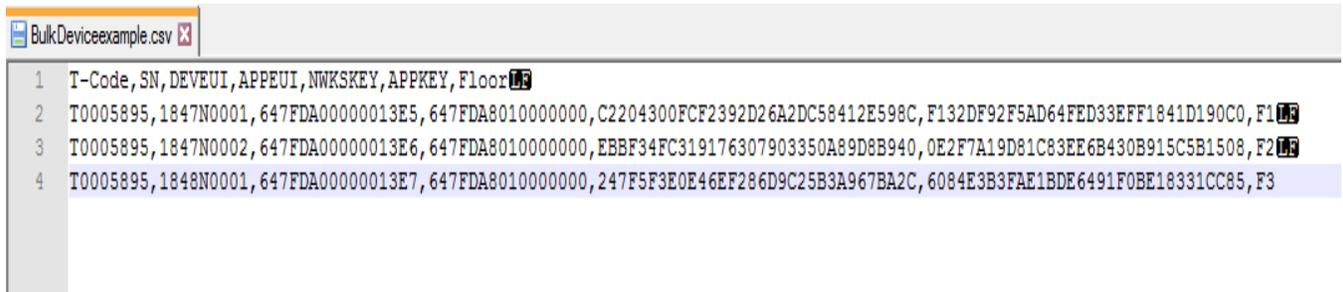
- Press “Start Commissioning”. Please note, location information is optional and does not need to be included.

NOTE: If you receive an error stating that the last row of your data only has one cell check to see that all your gateways have been added. If they have, you can ignore this message. Please see section on Common Errors and Known Limitations at the bottom of this document for more information.

Bulk Device Commissioning

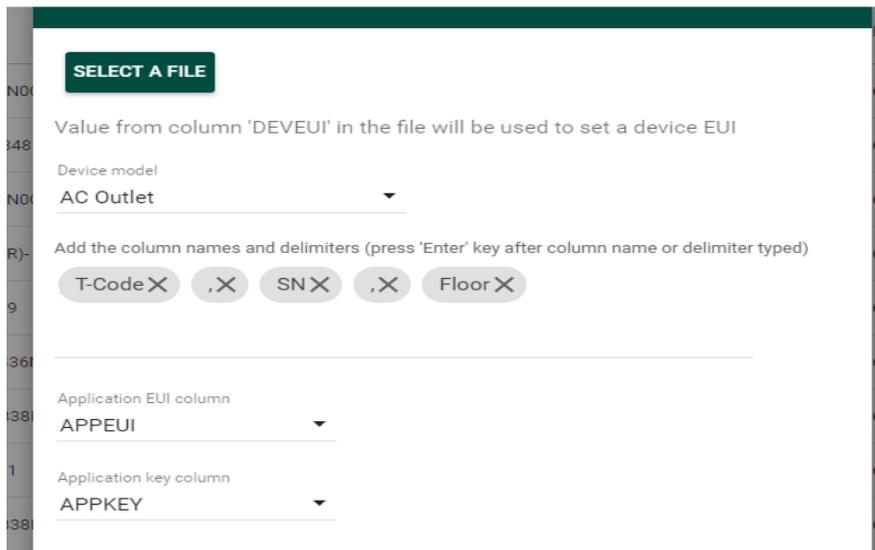
- 1) Similar to Gateway commissioning the first step is to create a .csv file. As with gateways, all devices must all be of the same type and frequency. You will need to include the Device EUI, App EUI and App Key for all devices you wish to commission. You should also include other information that will make up the name of your device. For example, if you would like your device name to be in the format “t-code, serial number, floor” you should include serial number, t-code and floor as columns in the file.

There is no limit on the number of columns you can have, and the column names can contain spaces. Save this file as a .csv. An example file created using Notepad ++ is shown below. It is possible to create the .csv file using Excel, however you may still require Notepad ++ change the end of line characters to Unix/Linux. (See Common Errors and Known Limitations section below)



```
1 T-Code, SN, DEVEUI, APPEUI, NWKSKEY, APPKEY, Floor
2 T0005895,1847N0001,647FDA00000013E5,647FDA8010000000,C2204300FCF2392D26A2DC58412E598C,F132DF92F5AD64FED33EFF1841D190C0,F1
3 T0005895,1847N0002,647FDA00000013E6,647FDA8010000000,EBBF34FC319176307903350A89D8B940,0E2F7A19D81C83EE6B430B915C5B1508,F2
4 T0005895,1848N0001,647FDA00000013E7,647FDA8010000000,247F5F3E0E46EF286D9C25B3A967BA2C,6084E3B3FAE1BDE6491F0BE18331CC85,F3
```

- 2) Upload the file to the network server.
 - Select the application to add sensors to under the Applications section. Click Manage Devices from the Applications window. Similar to step 2 under gateway commissioning click the up arrow in the upper right-hand corner to access the bulk commissioning feature.
 - Upload file created in step 1
- 3) Complete Device Information
 - Select the type of Device you are commissioning.
 - Create the name format for your devices from your .csv file. This is case sensitive, so the name of the column must be entered exactly as it is on your file. If entering multiple column names you can use a delimiter (-,./ etc.) to separate, or enter general text if you want the text to appear in the name of all devices. In this example we want our device to be named in the format “T-code, serial number, floor”. You would type “T-code” press enter “,”, “press enter “SN” press enter “,”, “press enter “Location” press enter.



SELECT A FILE

Value from column 'DEVEUI' in the file will be used to set a device EUI

Device model
AC Outlet

Add the column names and delimiters (press 'Enter' key after column name or delimiter typed)

T-Code X , X SN X , X Floor X

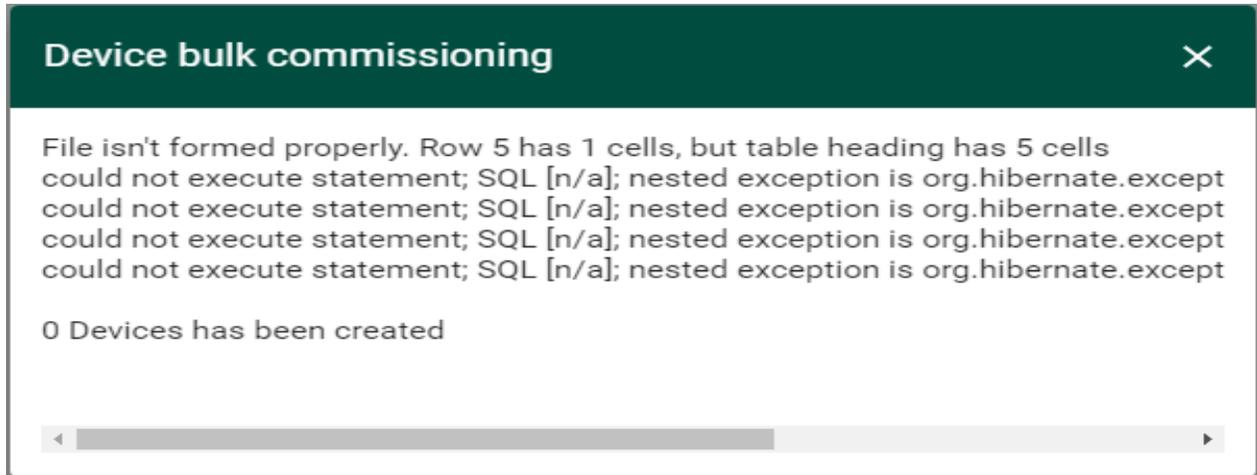
Application EUI column
APPEUI

Application key column
APPKEY

- Press “Start Commissioning”.
- NOTE: If you receive an error regarding the last row in your .csv file, or regarding the SQL, please see section below for more information.

Common Errors and Known Limitations.

Error - SQL [n/a]" nested exception is org.hibernate.exception - Changing End of Line Convention



Cause:

The CSV files used for testing this feature use the Unix/Linux EOL formatting convention. The Windows EOL formatting frequently causes errors. This has been logged as a bug against the current behavior, and we expect to fix this in the next release. Most commonly this error occurs when the .csv is created in excel.

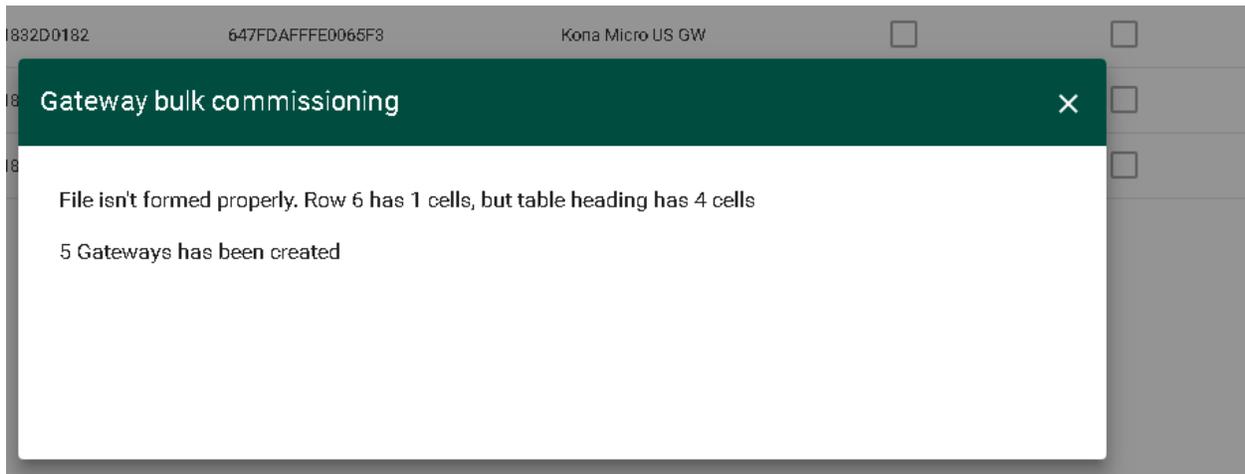
Workaround:

Open the troubled file in Notepad++. Select 'View>Show Symbol>Show End of Line'. This will likely show something like the following:

```
T-Code, SN, MAC, GW ID, IMEI, MODEL, LAT CR LF
T0004855, 1832D0181, 647FDA0065F2, 647FDAFFFE0065F2, 359376060909034, aaa, 22.1 CR LF
T0004855, 1832D0182, 647FDA0065F3, 647FDAFFFE0065F3, 359376060909216, bbb, 32.3 CR LF
T0004855, 1832D0183, 647FDA0065F4, 647FDAFFFE0065F4, 359376060909174, ccc, 12.1 CR LF
T0004855, 1832D0184, 647FDA0065F5, 647FDAFFFE0065F5, 359376060930907, ddd, 5.22 CR LF
T0004855, 1832D0315, 647FDA006681, 647FDAFFFE006681, 359376060929925, eee, 77.6
```

Select 'Edit>EOL Conversion>Unix (LF)', then save the file. Now it should import fine.

File not Properly formatted Error



Upon pressing the 'Start Commissioning' button, the following warning appears:
'File isn't formed properly. Row N has 1 cells, but table heading has M cells'

Cause:

The CSV files used for testing this feature have no end-of-line (EOL) characters at the end of the last line. However, when a CSV file is saved in Excel, Excel inserts an EOL character at the end of the last line.

Workaround:

Verify that the intended number of gateways/devices have been created and ignore the warning. Despite the warning, all data is imported correctly.

Validation of Commissioning Numbers

At this time, the bulk commissioning feature does not check the commissioning fields when performing a device bulk provisioning. Please double check that both the APPKEY and DEVEUI are 32 hex digits long, and the GW ID field is 16 hex digits long when creating your .csv file.