

How the lora.begin(name) function works

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1 Usage

To change the name of an arduino object, you must use the

```
void LoraShield::begin(String dns);
```

function after calling the init() function. For example:

```
#include <LoraShield.h>
#include <SPI.h>
```

```
LoraShield lora;
void setup()
{
    lora.init();
    String name = "beta.s.ackl.io";
    lora.begin(name);
}
```

```
void loop()
{ }
```

2 Arduino side

This function is defined in *LoraShield.cpp*:

```

/**
 * \description: send the name of the object to the shield
 * \param: name - the name
 */
void LoraShield::begin(String name)
{
    digitalWrite(SS_PIN, LOW);

    // The byte is the status of the last command
    int previous_cmd_status = SPI.transfer(ARDUINO_CMD_HOSTNAME);
    delayMicroseconds(WAIT_TIME_BETWEEN_BYTES_SPI);

    // Data size to be sent
    // MSB
    int shield_status = SPI.transfer(name.length() >> 8);
    delayMicroseconds(WAIT_TIME_BETWEEN_BYTES_SPI);

    shield_status = SPI.transfer(dns.length());
    delayMicroseconds(WAIT_TIME_BETWEEN_BYTES_SPI);

    //Send: payload as bytes to send
    for (int i = 0; i < name.length() ; i++)
    {
        shield_status = SPI.transfer(name[i]);
        delayMicroseconds(WAIT_TIME_BETWEEN_BYTES_SPI);
    }

    digitalWrite(SS_PIN,HIGH);
    delay(WAIT_TIME_BETWEEN_SPI_MSG*2);
}

```

So the contiki board will receive a packet like :

0x21	length_msb	length_lsb	name
------	------------	------------	------

3 Contiki side

3.1 Change the name

The parsing of the previous packet is defined in the `/platform/lorafabian/apps/arduino_interface/arduino_cmd.c` file. The program waits a `ARDUINO_CMD_HOSTNAME` and write the new name in the file: `/HOSTNAME_LORA`.

3.2 Get the current name

The current name is written in the file `/HOSTNAME_LORA`. This is an example of a function which get the current name (`updateHOSTNAME()`) in the file `/platform/lorafabian/apps/frame_manager/frame_manager.c`:

```

#include "cfs/cfs.h"

char coap_payload_beacon[150];

```

```

/**
 * \brief: update the hostname with /HOSTNAME file
 */
void updateHOSTNAME()
{
    char dns[150]; //The content of the file
    int fd;
    //Read in /HOSTNAME_LORA
    fd = cfs_open("/HOSTNAME_LORA", CFS_READ);
    if(fd >= 0) {
        //Read 500 char
        cfs_read(fd, dns, sizeof(dns));
        cfs_close(fd);
        //Get the real hostname
        int size = 0;
        //Because the space significate the end of the hostname
        while(dns[size] != '\0')
            ++size;
        //final = the real url
        char final[size];
        int i;
        for(i = 0; i != sizeof(final) + 1; ++i)
            final[i] = dns[i];
        strcpy(coap_payload_beacon, "{\n\n:}");
        strcat(coap_payload_beacon, final);
        strcat(coap_payload_beacon, "\n}");
    }
    else {
        printf("READING ERROR\n\r");
        strcpy(coap_payload_beacon, "{\n\n: \"default.test\"}");
        return;
    }
    printf("HOSTNAME : %s\n\r", coap_payload_beacon);
}

```

Note: if the `/HOSTNAME_LORA` doesn't exists, the default name will be `default.test`.