## Custom FOS Application

### Description

Custom FOS application (custom\_fos) demonstrates Firmware Upgrade Over Serial. Using this application, Talaria TWO ELF can be upgraded from the Host. Host provides Talaria TWO ELF to be upgraded. The ELF is sent over serial using FOS commands.

### Prerequisites

1. GTKTerm or similar application.

### Command Description

Send ELF image to Talaria TWO.

|  |
| --- |
| #./custom\_fos <elf\_path> <hash> <auto\_reset> |

where,

1. elf\_path (must): Path of the Dual-Stack ELF
2. Hash (optional): sha256 hash of the ELF provided through elf\_path. Use --no\_hash to skip this argument
3. auto\_reset (optional):
   1. 1 – Talaria TWO is reset automatically after successful upgrade
   2. 0 - Host needs to reset Talaria TWO after successful upgrade

### Procedure

Execute the following operations on Talaria TWO:

|  |
| --- |
| #./custom\_fos /root/t2\_firmware.elf --no\_hash 1 |

### Expected Output

#### Host Console Logs

A computer screen with white text

Description automatically generated

Figure 6: custom\_fos - host console logs

Host serial log – text output:

|  |
| --- |
| [root@:]# ./custom\_fos dual\_stack.elf.strip fa57d8378e1a88c92ad5d691eb1108a66f434c4171db0779bf671bdfc403e7cc 1  Args:  t2 elf path = dual\_stack.elf.strip  hash = fa57d8378e1a88c92ad5d691eb1108a66f434c4171db0779bf671bdfc403e7cc  autoreset = 1  file size = 650988  Fos Start: Resp status=0 : success  file size = 650988  End of Reading t2 image file  FOS Success |

### List of Message IDs Used

This application demonstrates the use of custom Wi-Fi connection in Dual-Stack custom applications and uses Group number 70. Following are the message IDs used:

1. FOS\_HIO\_START\_REQ

This message is sent to Talaria TWO by Host with the ELF image name, sha256 hash of the ELF, image size and a flag to indicate auto-reset of Talaria TWO after firmware upgrade completes. Talaria TWO replies with status code to Host.

1. FOS\_HIO\_IMG\_SEND\_REQ

When Talaria TWO replies with a successful response for FOS start request, Host will do the base64 encoding for ELF image and starts sending it to Talaria TWO. If Talaria TWO successfully receives the ELF data of size mentioned in the start request, it will send the status to Host. As the size is set during FOS start request, Talaria TWO upgrades the image and resets by itself it the auto reset flag is set.

1. FOS\_HIO\_COMMIT\_REQ

There is no necessity to call commit(), commit will be done implicitly as the image size is set during fos\_start.