



Serial Relay Service

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Serial Relay Service Overview

Serial Relay service on the IR1101 enables IOx apps to communicate with the Async Serial port (`/dev/ttyS1` under IOS-XE). The configuration of Serial Relay service is similar to that of the IR800.

Data Paths

On the IR1101, IOS-XE has complete control over the data path and control path of the Async Serial port. This aspect is essential to other encapsulations supported on the Async port such as PPP, raw-socket, SCADA, etc. The IOx app is never allowed to exercise full control over the device. All data and configurations are passed through IOS-XE before going to the device. Instead of exposing the actual Serial port to IOx apps, the Serial relay service creates a software emulated serial tty device enumerated as `/dev/ttyTun0` (shown below).

The pair of devices `/dev/ttyTun0` and `/dev/ttyTun1` represent a data tunnel whose primary function is to act as a pass-through gateway during any data transfer. `/dev/ttyTun1` is open by IOS-XE and all the ingress/egress data from IOS to the app uses this device during data transfer. Line 0/0/0 is used to communicate with `/dev/ttyTun1`. Serial relay service should be configured beforehand to allow the connection between two lines.

6. Similar path can be extrapolated for TCSETS where the CTTY handler requests the Line driver to update the settings of the underneath /dev/ttyS1 driver.
7. Line driver of Line 0/2/0 and driver config on /dev/ttyTun0 are always in sync with each other. Any configuration changes such as baud rate modification is transparently propagated to the Line driver without any additional configuration overhead. This emulates the propagation feature of Serial relay on the IR800 series where the virtual serial port can configure the parameters of the real serial port.

Configuration Commands

```
IR1101#configure terminal
IR1101(config)#interface async 0/2/0
IR1101(config-if)#encapsulation relay-line
IR1101(config-if)#exit
IR1101(config)#relay line 0/2/0 0/0/0
IR1101(config)#exit
IR1101#
```

