

# Application Note

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## SmartNode 4000 Series used for FXS-FXO Line Extension

This is the simplest ToIP application. Extension of an analog phone line over an IP network. Although the SmartNode VoIP technology is fully standard compliant, you must use a SmartNode on both sides of the line in order to benefit from advanced line extension features such as:

- ❑ Feature transparent analog extensions over IP/Ethernet
- ❑ Relay of Hook-Flash and DTMF tones from Phone to PBX/PSTN
- ❑ Relay of CLIP from PBX/PSTN to Phone

Select the right model according to the type (FXS or FXO) and the number of phone ports required in the installation.

### System Overview

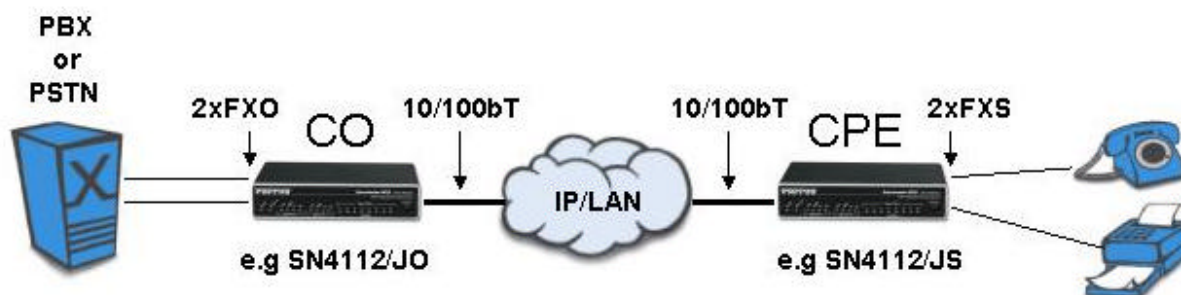


Figure 1: Schematic diagram of the Application

The following elements are required for this Application:

- 2-wire telephone lines from a PBX or PSTN to connect the FXO ports of the CO SmartNode
- 2-wire Terminals to connect to the FXS ports of the CPE SmartNode
- Ethernet connection and IP Addresses to an IP LAN or WAN on the CO and CPE side
- Sufficient bandwidth of minimum 25kbit/s per extended port through the entire IP Network

**Note that this Configuration Note provides a basic setup which is intended to get you started quickly and make a first call. In most cases the minor adaptations described in the configuration files will be sufficient for your network. However, the SmartNode has many additional configuration options which allow to fit the product in various network scenarios. Please consult the SmartWare Software Configuration Guide for the complete configuration documentation.**

## How To Adapt To Your Network

The configuration file is available as an ASCII file (.cfg) file. You can edit the configuration file with any text editor (MS Word, Wordpad). Save changed files in text format. You may also change the file extension to .txt for your convenience.

The configuration files contains comments (lines with a leading #) with instructions where and how to change the parameters which may need to be adapted to your network.

For instructions on how to download the configuration using a TFTP server to the SmartNode please consult the **Quick Start Guide**.

**Note:** Please follow the instructions in the Quick Start guide **exactly - step by step** to insure that the configuration is activated correctly!

## Configuration Files

CO.cfg  
CPE.cfg