

## Information on the discontinuation of ISDN and analog calling as of November 30, 2018.

Switch to the communications mode of the future while there's still time!

More and more, conventional landline calling is being replaced by IP telephony (VoIP). Swisscom has therefore decided to discontinue traditional ISDN and analog calling as of November 30, 2018. This means that in the future all communications services will be operated over the IP network. We have good news for you: Sunrise will continue to offer its own analog technology until at least the end of 2020. In addition, companies who are Swisscom customers using traditional ISDN and analog technology can easily switch to Sunrise technology.

Sunrise is already in the process of deploying VoIP-based connection products. This means that IP connections are being extended all the way to customers' homes. Using suitable terminal devices (CPEs), these VoIP connections can be routed to the phone system on site (ISDN S0 bus) either as VoIP (SIP trunk) or as classic MultiLine with two channels and five numbers or four channels and ten numbers. As an alternative to on-site phone system connections, Sunrise also offers cloud-based calling solutions.

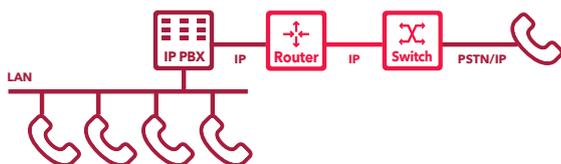
### 1. Future-oriented solutions

Generally speaking, all modern calling solutions - whether it's an on-premises phone system or a cloud solution - are based on the Voice-over-IP standard.

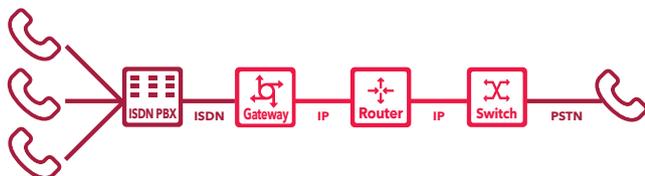
#### VoIP solutions

##### Business voice direct

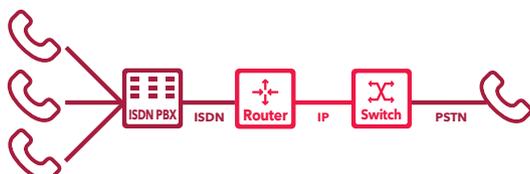
Phone system connected via VoIP SIP trunk



ISDN with VoIP gateway  
(up to 14 BRI or 6 PRI)

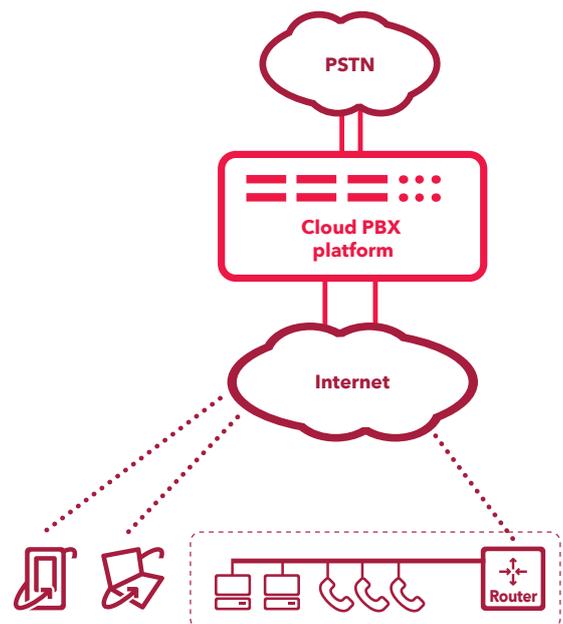


ISDN with direct VoIP connection to router with S0 bus  
(up to 10 phone numbers and 4 voice channels)



##### Business cloud PBX

Cloud-based phone system with connection via Internet



## 1.1. Companies with phone systems

Companies with phone systems can very easily port their phone connections to Sunrise. This lets them keep their existing phone numbers and continue using their existing ISDN phone system. Of course, new IP telephone systems can be connected immediately via SIP trunk.

Alternatively, the telephone system can be replaced with a cloud solution (Business cloud PBX). In this case, all that's needed is an Internet connection with sufficient bandwidth for making calls.

## 1.2. Companies without phone systems

Companies presently using classic ISDN MultiLine or EconomyLine connections can continue to use them. Sunrise already offers suitable solutions for this, such as the FRITZ!Box, which lets you use your existing technology (MultiLine) with a maximum of ten phone numbers and four voice channels.

## 2. Special solutions

Many companies use analog EconomyLine connections for alarm systems, elevator phones, and fax or modem applications. However, analog phone lines will no longer be available in Switzerland as of November 30, 2018. Nevertheless, Sunrise will continue offering its own analog technologies. Companies can therefore switch their alarm systems, etc., to Sunrise technology and use them as before. However, we recommend that you start thinking about potential technology changes today and get advice on the best possible solutions for your needs.

### 2.1. Elevator phones and alarm systems

Sunrise analog technology will continue to exist. This means that companies can switch their elevator phones and alarm systems to Sunrise technology at any time and use them as before. Companies also have the option of switching to mobile communications based systems. We would be happy to recommend the perfect solution for you.

- **Landline IP/mobile redundancy:** Service availability can be enhanced by combining IP landline with IP mobile service (as a backup). This allows the IP solution to offer potentially higher reliability than classic ISDN or analog connections.
- **Mobile network connection:** In most cases, a simple mobile network connection is sufficient. Many alarm systems are already prepared for this sort of signaling. No additional installation is required.
- **Landline IP connection:** In most cases, a simple landline IP connection meets the necessary requirements. Assuming a backup power supply for the router is in place, this type of connection is equivalent to current ISDN or analog connections. Many alarm systems can be converted to IP relatively easily.
- **Analog-IP converter/modem over VoIP:** From a purely technical perspective, solutions in which the alarm system's analog signal is converted to a VoIP signal are also possible. However, a reliable connection cannot always be guaranteed, so we generally do not recommend this option.

## 2.2. Modem applications

Even today, many applications still communicate with modems that convert signals into tones. Switching to IP therefore makes sense and is more efficient. We recommend you get in touch with us as soon as possible so we can assist you in finding solutions that are best suited to your needs.

## 2.3. Fax

Analog fax services will disappear from the market in the medium to long term. Over time, these services will be replaced by IP-based solutions such as eFax (fax via computer) or e-mail. In principle, you can continue to use analog fax machines in an IP environment via an analog-to-IP converter. Fax services do not offer the same level of reliability in the IP environment as they do in the analog world, so we recommend the following measures for connecting existing fax machines via analog-to-IP converters:

- Disable error correction mode on the fax machine
- Reduce the transmission speed on the fax machine (max. 9600 bps)

## 2.4. ISDN Advice of Charge (AOC)

With the discontinuation of ISDN technology, the Advice of Charge (AOC) time increment signal from the network is no longer available. Advice of Charge, like fax service, is no longer part of our basic services. This means that it is no longer possible to display call charges on ISDN devices during a call. On analog phone connections, the tariff unit is conveyed as charge pulses, while on ISDN connections this information is conveyed over the D channel. For both connection types, the Advice of Charge feature will be discontinued without replacement as of July 1, 2018. This also applies to carrier preselection and call-by-call connections.

For more information on the future of fax service, please visit  
<https://www.sunrise.ch/de/business/festnetz/fax-im-zeitalter-von-all-ip.html>

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If you require any further information, just give us a call.