The housing association's fiber network - WiFi router

1. Switch to fiber network

a) **The fiber network up to and including the switch in each apartment is owned by the housing association.**

b) Linderud Borettslag II has an Inteno XG6846 switch in the apartments.

c) **Port LAN1** (red colour) is connected to the WAN port on the resident's router.
Alternatively, it can be connected to a single PC, TV decoder or IP phone without a router.
(Ports LAN2, LAN3, LAN4 currently have no services in our network.)

d) During normal operation, the **PWR, WAN , and LAN1** LEDs should be green.
If LAN1 is yellow, it means that the connected router only has a 100 Mb/s WAN port,
and cannot handle full speed. It is then recommended to buy a new router.

e) When replacing the router/equipment connected to LAN1, the switch must be restarted: Disconnect the power for 5 seconds.

f) **WARRANTY:** The fiber optic switch is screwed into the wall and sealed. It MUST NOT be opened or dismantled by the unit owner/resident or by craftsmen, only by an authorized fiber optic installer.
The fiber cable into the switch must not be stretched, pulled or cut.
NB! It costs more than 3500 NOK to re-terminate the fiber cable.
This must be paid by the unit owner if the above conditions are violated!

g) The company ATMcom is responsible for operating the fiber network, but has no responsibility for obtaining a router or other equipment you have purchased yourself to function.

h) Fiber box power adapter: 12V DC, 1A, + on plug center. Suitable spare part: kjell.com, item no. 44382.

2. Router

Buy:

a) **Router must be purchased and operated by unit owner/resident.** Wireless router establishes WiFi and wired network, as follows that multiple devices can be connected. Wireless routers can be purchased at computer/electronic stores.

b) **Network ports: Gigabit speed required (1000 Mb/s)**
Older/low-cost routers often have WAN/LAN network ports with a maximum of 100 Mb/s. Then you will not be able to utilize the full speed of the common agreement.
On the fiber box, LAN1 will light up green for gigabit, but yellow for only 100 Mb/s speed.

c) **Frequency bands 2.4 and 5 GHz:**
Older/low-cost routers often only handle the "old" 2.4 GHz frequency band (IEEE 802.11b/g).
This band is usually crowded - there is too little space when you live as close as we do.
Routers in nearby apartments will interfere and reduce speed.
Your router should also cover the 5 GHz frequency band (IEEE 802.11a).
NOTE: Not all older laptops or smartphones handle the 5 GHz band.

d) **WiFi generation:**
WiFi-6 is the latest generation, and provides the best bandwidth – provided your equipment is also WiFi-6 capable.
Routers are backward compatible, so your equipment will get the speed it is capable of.

Installation:

e) **Location:** For optimal WiFi, the router should be placed approximately in the middle of the apartment. Concrete attenuates the signals.
It cannot be placed behind shielding metal objects or behind equipment such as a TV.

f) The router's WAN port (there is only one WAN port, often **blue** in color) should be connected to the fiber optic switch's LAN-1 port (**red** color).

g) **Network address:**

One global IP address is assigned per switch via DHCP.

The assigned address **must not** be permanently configured on the equipment, as the assignment will change from time to time.

- If devices in your network are to be accessed from outside: Use a dynamic DNS service such as dyndns.

h) WiFi security mechanisms (WPA2) MUST be turned on, otherwise unauthorized persons can freely use the network.

Many routers come with the security solution turned on, ready to use.

The network name (SSID) and key (password) are then written on the accompanying/sticky note (often on the underside), and the password must be entered for the PC or smartphone to connect.

i) For equipment that is permanently installed, the best solution is to use a network cable to a LAN port on the the router. (there are usually 4 LAN ports, often yellow in color).

This is especially true for devices that use high bandwidth over time, such as video streaming:

(Telia)TV box, Smart TV, desktop work PC.

3. Troubleshooting: Checklist

Unstable network:

a) The power supply is plugged in properly (both in the 220V socket and the plug to the router)

b) Network cables are plugged in properly at both ends, so that the locking hook holds the cable securely.

This applies to both the cable from Fiberbox LAN1 to Router WAN, and from Router LANx to Telia TV-box.

c) The router has updated software. Updating often has to be done manually, by logging into the router as administrator from a browser (often http://routerlogon.net).

The default password for the first time is usually stated in the user manual. It should be changed during installation.

- Remember to write down the new administrator password, preferably on a sticky note under the router.

d) Frequency/channel collision with neighbors:

To see occupancy in the frequency bands, **a smartphone app** can be used.

Wi-Fi Analyzer (Android, from Farpoint) is a good utility app for seeing where your router is in relation to its neighbors. For Apple IOS, *it is said* that the built-in "Airport" can do such a scan. The function must be turned on in Settings/Airport.

As an administrator, you can change which frequency/channel the router should use.

It is often set to "Auto", but this often does not work well.

e) Remember: Most products with a processor tend to benefit from an occasional restart, especially if they is behaving strangely.

Turn off the power to both the fiber box and router for 10 seconds, plug in the fiber box and wait for the WAN light to come on, then start the router.

4. Speed measurement

- Nettfart.no: NKOM's measurement of link speed
- speedtest.net: Speed measurement in browser or in installed app.