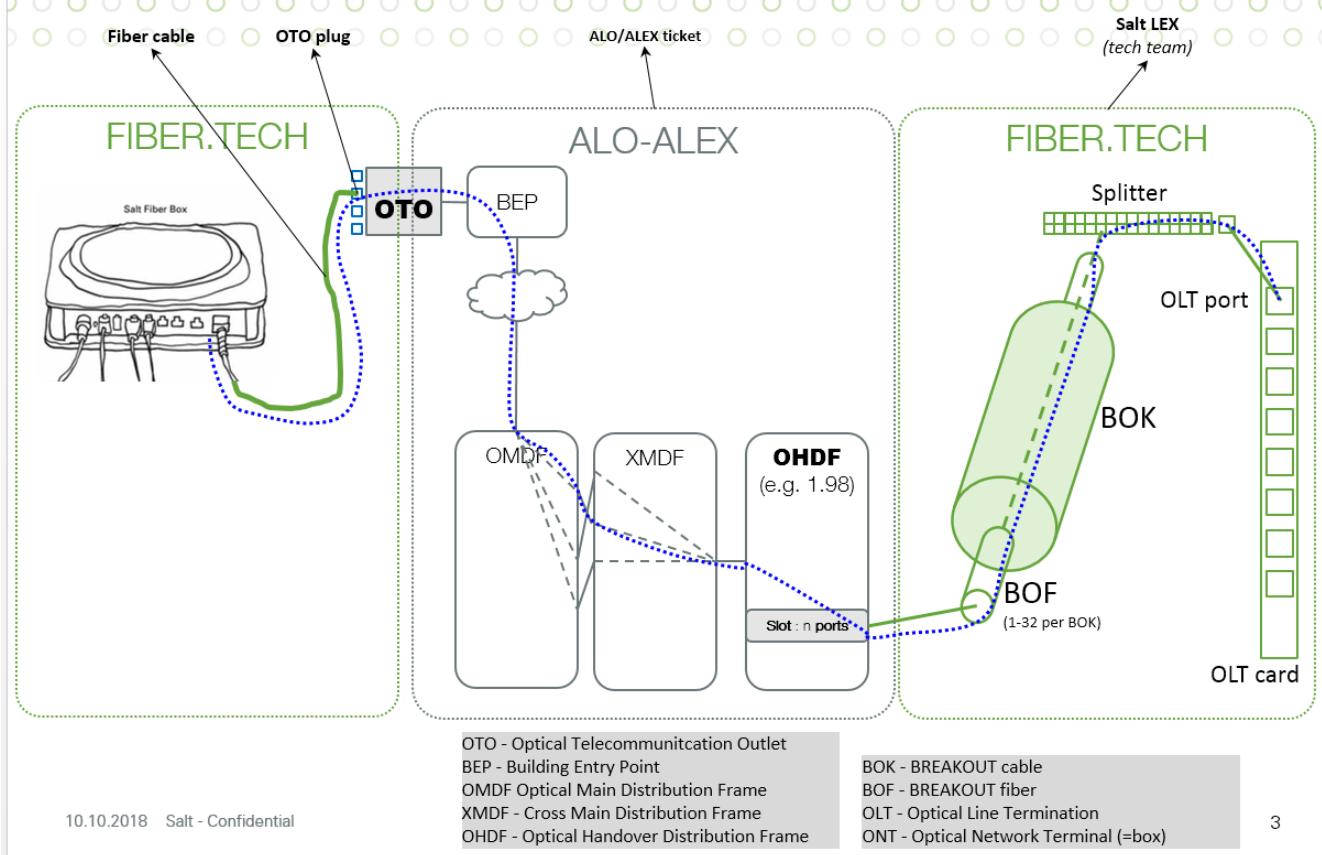


Support procedure

- A - RULES
- B - Box REPLACEMENT
- C - INTRODUCTION
 - Tips / Known issues
 - Basics
 - Wifi tools
 - Wifi articles
 - VOIP info
- I - LEDs checks (must be done in this order)
 - Power LED on (should be GREEN STABLE)
 - Fiber LED on (should be GREEN STABLE)
 - www LED on (should be GREEN STABLE)
 - WLAN LED (should be GREEN blinking or stable)
- II - Internet
 - KO
 - SLOW (means < 80 Mbps in LAN or < 20 Mbps in both WLAN)
 - CUTS
 - WEB PAGES (not all) take LONG TIME to be displayed or are NOT DISPLAYED at all
- III - Wifi
 - INVISIBLE
 - VISIBLE but impossible to REGISTER
 - REGISTERED but impossible to access INTERNET
 - INSTABLE
 - WEB PAGES (not all) take LONG TIME to be displayed or are NOT DISPLAYED at all
- D - Speed
 - Devolo repeaters
 - Antivirus
 - Consequences of not measuring according to procedure (Speedtest app by Ookla vs browsers ; ad-blockers)
- E - URLs blocked (Bank of America & co)
- F - 3rd level specific actions

Fiber pre-requisite: optical continuity Salt.



A - RULES

- Follow this procedure to handle Fiber cases - if this does not allow to resolve, please feedback to Jeff (with details on issue, context, actions) so that we can enhance this procedure.
 - The box must always be powered (230V) and plugged (SFP, Fiber, OTO) at a customer during all lifecycle of a ticket, please mention it to customer at first interaction
 - If a customer left his box in a Store without a box replacement in progress (cf. VTI / Customer events' log), replace his box (Forced replacement / Sales agent mistake)
 - Tickets must contain contractor in external ticket ID field
 - Line must be activated in VTI (email "service up and running" sent to customer)
 - Line must be usable (Billable, Not suspended due to collection process, e.g. a message "Collection event – Account barred for non-payment" or "Collection event – Payment received, account reactivated." would tell you if a technical case can be open (it's a non-sense if line is barred)
- | | | | |
|--------------|------------------------|---|------------------|
| Notification | 18/02/2019
18:00:03 | Collection event ◆ Account barred for non-payment, will be reactivated only if outstanding amount is paid. | David
Lloreda |
|--------------|------------------------|---|------------------|
- POM processes must be completed
 - No box swap shall be in progress
 - If other ongoing tickets, please mention their ID
 - If you give some info that has not just been retrieved through a system or a customer interaction, please specify by which agent/team it was entered, and on which date (LED status, Rx in GUI, ...)
 - Customer must use only material/accessories provided by Salt (power adapter, SFP, **fiber cable**, ethernet cable), and not use any kind of hub, switch, repeater or access point (if it's the case, he shall unplug this material and give you updated information)
 - wrong power adapter: can lead to box malfunctions
 - wrong SFP: will lead to box malfunctions
 - wrong fiber cable: can lead to signal attenuation (ex: -22 dBm instead of -16 dBm) and therefore line cuts, slowness or instability
 - Fiber cable is fragile
 - Fiber cable has its own specifications (LC/APC-SC/APC 3.0-9/125 SM G.657 A2) : https://qoof.salt.ch/fr/knowledge/technical/terminology_and_specifications/fiber_cable_and_connectors
 - wrong ethernet cable: can lead to slowness

B - Box REPLACEMENT

1. Shall be approved by a fiber tech team member (Marian, Michel, Frank, Enzo, Leeroy or Jeff), except in the following cases (see table - pay attention to "evidence" and "comments" columns) where the box can be replaced directly, or if you follow accurately the steps in this procedure:
2. Before doing a box replacement, check that there is no box replacement already in progress
3. If a box has been replaced for one reason, except epidemic failures (Wifi invisible, Non-stop reboot, Wifi register impossible, Booting issue, Dead power), do not swap twice the box for same reason : it's highly probable that the issue is on customer context side - thus you shall work with the customer to have a better understanding and then assign ticket to 3rd level if needed - we will troubleshoot and/or visit the customer.
4. Please put as Justification text in VTI when you do a swap: "Reason ; SO ticket ID ; Subreason", as follows
5. You shall always instruct the customer to bring back his old box, in original casing and with all original accessories, in a Salt Store.
6. When 3rd level asks to "intercept" the box, you shall know in which store he will return the box, contact the store with cc Jeff a/o the or someone from his team during vacation (team mail Fiber.TechSupport@salt.ch can be used also)

Reason (text from table)	SO ticket#	Sub-Reason (text from table or from 3rd level in ticket update)
Wifi invisible	; 8765473 ;	UMC MAC 2.4GHz and 5GHz not shown

Legend		
Reason available to 2 nd and 3 rd level	Reason available to 3 rd level only	Reason available to 3 rd level only With specific instructions to "intercept" the box

Reason	Subreason	Evidence to get before the swap	+ Comments / Indications
Booting issue		<p>- 1st possibility step 1: power green, fiber red, no other LED starting, on the rear of the box, all the green LEDs of the LAN ports are switched on with or without LAN cable(s) plugged, and stay on</p> <p>- 2nd possibility step 1: power green, fiber red, no other LED starting</p> <p>- 3rd possibility step 1: power green, fiber red step 2: all LEDs for one second step 3: power green, no other LED starting in the first 90s after it was powered</p>	Reason available to 2 nd and 3 rd level
Broken by customer	Broken inside	When the customer has sent a video in SO ticket where we can hear some noise when the box is shaked	Reason available to 2 nd and 3 rd level
Broken by customer	SFP blocked inside	When the customer has sent a video in SO ticket where we can see that the SFP can not be removed anymore	Reason available to 2 nd and 3 rd level
Broken by customer	SFP broken		Reason available to 3 rd level only
Broken by customer	SFP sink	When the customer has sent a photo or a video in SO ticket where we can see that the tiny blue sink on the SFP is broken	Reason available to 2 nd and 3 rd level
Broken by customer	WLAN/WPS/DECT button	When the customer has sent a video in SO ticket where we can see that the WLAN can not be activated or deactivated when the button is pressed less than 5 seconds or we can see that the WPS can not be activated when the button is pressed more than 5 seconds	Reason available to 2 nd and 3 rd level

Dead power		Even after swapping power adapter or checked on another electric mount the box does not boot (no LED lights on)	Reason available to 2 nd and 3 rd level
FLL partner	incriminated box	When the customer insists to get a new box because a technician outside Salt has told the customer that the box is faulty - you have to send an email to Thierry/Jeff with : 1) name of the company for which the technician works, 2) contractor_no, 3) SO ticket number, 4) date where the customer was visited, 5) ALO/ALEX ticket number	Reason available to 2 nd and 3 rd level
Forced replacement	Customer insisting when onsite		Reason available to 3 rd level only
Forced replacement	IT systems	When there was an error in POM process NETWORK_CPE_SENDING and a new box must be sent	Reason available to 2 nd and 3 rd level
Forced replacement	Sales agent mistake	When you get the info that the customer returned his box to a Store, you check VTI profile, and you see there is no box replacement done for this customer	Reason available to 2 nd and 3 rd level
Logistics	Damaged	When the customer has sent a photo or a video in SO ticket where we can see that the box arrived damaged at the customer	Reason available to 2 nd and 3 rd level
Logistics	Lost	When the package was lost by the post, examples: - https://service.post.ch/EasyTrack/submitParcelData.do?formattedParcelCodes=99.38.125562.11077161 - https://service.post.ch/EasyTrack/submitParcelData.do?formattedParcelCodes=99.38.125562.11066123 - https://service.post.ch/EasyTrack/submitParcelData.do?formattedParcelCodes=99.38.125562.11057915	Reason available to 2 nd and 3 rd level
Logistics	Not delivered	When the customer did not receive the box (wrong address, no pick-up) etc. and the box is back to ALSO in the stock, example: - https://service.post.ch/EasyTrack/submitParcelData.do?formattedParcelCodes=99.38.125562.11025908	Reason available to 2 nd and 3 rd level
Logistics	Wrong box shipped	Normally should not be used anymore, replaced by "Update SN ; XXXXXXXX ; Logistics Wrong box shipped", see below this reason.	Reason available to 3 rd level only
Non-stop reboot		When the customer has sent a video in SO ticket where we can see that no USB device is plugged and the box always reboot: step 1: power green, fiber red step 2: all LEDs for one second step 3: back to step 1	Reason available to 2 nd and 3 rd level Forget the rainbow story, please...
Other	Broken box (optics not shown)	When the customer has sent 2 photos in SO ticket: one where we can see that the SFP is well inserted and one where we can see that the GUI does not display the Transceiver values in the Fiber tab	Reason available to 2 nd and 3 rd level

Other	DECT broken	When phone can not be paired to the DECT base of the Salt box	Reason available to 3rd level only 1) Issue must be clearly captured in SuperOffice, well described, with screenshots, and Box must be back to Crissier for testing by the agent who did the swap. 2) Test scenario: reproduce, describe steps and add logs and screenshots in a ticket to Arcadyan (or update the existing ticket for that issue)
Other	LAN ports	When the customer has sent a video in SO ticket where we can see that a LAN port has no blinking LED when he plugs an active device.	Reason available to 2 nd and 3 rd level
Other	LAN/WLAN unreachable	When customer has issue to reach or to control or to use service on a LAN device fromn WLAN or on a WLAN device from LAN	Reason available to 3rd level only 1) Issue must be clearly captured in SuperOffice, well described, with screenshots, and Box must be back to Crissier for testing by the agent who did the swap. 2) Test scenario: reproduce, describe steps and add logs and screenshots in a ticket to Arcadyan (or update the existing ticket for that issue)

Other	Management	When you get instruction from Thierry or a CxO to replace a box	Reason available to 2 nd and 3 rd level
Other	NO FO link, the TX is fluctuating, The ALO link is ok.		Reason available to 3 rd level only
Other	NO FO link, The ALO/ALEX link is ok.		Reason available to 3 rd level only
Other	OLT issue (DHCP, MAC, XFP, ...)	Only for Jeff afterwards (swap was obviously useless...)	Reason available to 3 rd level only
Other	OLT suspected (Nokia issue ?)		Reason available to 3 rd level only
Other	ONU suspected		Reason available to 3 rd level only
Other	Port forwarding not working	When port forwarding rules applied on GUI are not registered in the box config (visible in file fb_iptables.txt from logs downloaded in the GUI > Administration > Problem Solving)	<p>Reason available to 3rd level only</p> <p>1) Issue must be clearly captured in SuperOffice, well described, with screenshots, and Box must be back to Crissier for testing by the agent who did the swap.</p> <p>2) Test scenario: reproduce, describe steps and add logs and screenshots in a ticket to Arcadyan (or update the existing ticket for that issue)</p>
Other	Red Fiber		Reason available to 3 rd level only
Other	Rogue suspected		Reason available to 3 rd level only
Other	SFP suspected		Reason available to 3 rd level only

Other	Social media	When the customer insists in a public area, on Facebook or Twitter, to get his box replaced	Reason available to 2 nd and 3 rd level
Other	WLAN deactivates itself	When the customer has sent a video in SO ticket where we can see that the WLAN LED switches from ON to OFF and stays OFF	Reason available to 2 nd and 3 rd level
Other	WWW off	Fiber Rx signal and LED ok – OLT ok, no alarm, OLT optical reboot tried, reprovision tried, SFP swapped	Reason available to 3 rd level only
Update SN	FTS change SN	No new box “consumed” from Salt stock or from your stock, just entering new SN	Reason available to 3 rd level only
Update SN	Logistics Wrong box shipped	No new box “consumed” from Salt stock or from your stock, just entering SN given by the customer	Reason available to 3 rd level only
Wifi instable	Cuts	Let's try to capture technically what are these issues, “instability” is far too vague, box must me tested in the lab, see last column.	Reason available to 3rd level only
Wifi instable	CPU/RAM overused	Let's try to capture technically what are these issues, “instability” is far too vague, box must me tested in the lab, see last column.	1) Issue must be clearly captured in SuperOffice, well described, with screenshots, and Box must be back to Crissier for testing by the agent who did the swap.
Wifi instable	<i><Free comment></i>	Let's try to capture technically what are these issues, “instability” is far too vague, box must me tested in the lab, see last column.	2) Test scenario: reproduce, describe steps and add logs and screenshots in a ticket to Arcadyan (or update the existing ticket for that issue)
Wifi invisible	<i><optional: which MAC/SSID is invisible></i>	When Fiber Tech support team has confirmed the WLAN is not broadcasted (WLAN Mac Address is not shown even with WLAN activated)	Reason available to 2 nd and 3 rd level
Wifi invisible	MAC address visible	When customer complains that he does not see WLAN 2.4 or 5GHz on a device that is supposed to be compatible, or we witness it onsite, but the MAC address is visible in GUI.	Reason available to 3rd level only
Wifi invisible	2.4 GHz intermittent	When the wifi 2.4GHz is visible for some time, then not visible anymore, then visible (e.g. after reboot), ... When wifi visible, internet connection is ok.	1) Issue must be clearly captured in SuperOffice, well described, with screenshots, and Box
Wifi invisible	5 GHz intermittent	When the wifi 5GHz is visible for some time, then not visible anymore, then visible (e.g. after reboot), ... When wifi visible, internet connection is ok.	

Wifi invisible	Both intermittent	When both wifi are visible for some time, then not visible anymore, then visible (e.g. after reboot), ... When wifi visible, internet connection is ok.	must be back to Crissier for testing by the agent who did the swap. 2) Test scenario: reproduce, describe steps and add logs and screenshots in a ticket to Arcadyan (or update the existing ticket for that issue)
Wifi register impossible		When the customer has sent a video in SO ticket where we can see that a device tries to authenticate on a broadcasted WLAN SSID and the device does not link on the WLAN and there is no "incorrect password" error message	Reason available to 2 nd and 3 rd level
Wifi stand-by		When the customer has sent a picture in SO ticket where we can see that the device of the customer stays connected to the box Wifi, there is no exclamation mark besides the Wifi icon on top of the screen, but internet is not available.	Reason available to 2 nd and 3 rd level
Wifi weak	Distance	When the customer clearly describes that wifi (2.4GHz or 5GHz) is visible only if he's close (<3m) to the box, and not further.	Reason available to 2 nd and 3 rd level
Wifi weak	Speed	When the customer sends an evidence of SpeedTest app result below 20Mbps in 2.4GHz or below 50Mbps in 5GHz, with the Apple TV on which all available updates are installed.	1) Issue must be clearly captured in SuperOffice, well described, with screenshots, and Box must be back to Crissier for testing by the agent who did the swap. 2) Test scenario: reproduce, describe steps and add logs and screenshots in a ticket to Arcadyan (or update the existing ticket for that issue)

C - INTRODUCTION

Tips / Known issues

- Customer can not access to GUI > check if login.htm was automatically added, if not, suggest to add it manually, so that the browser tries to reach <http://192.168.1.1/login.htm>

Basics

- Installation: FR: <https://www.youtube.com/watch?v=z9aL-arjRJw> ; DE: <https://www.youtube.com/watch?v=UFBwdVRnc-E> ; IT: <https://www.youtube.com/watch?v=zIWOCqCiAxM>
- Correct fiber cable plugging: <https://www.youtube.com/watch?v=1Ac1P5kM4El&t=55>
- Capture Rx/Tx: <https://www.youtube.com/watch?v=vB61nkVrqj0> (Expert / Overview / Fiber) or in box-management if box is online
- Box_Save_Config: Expert / Administration / Restore-Save-Upload settings
- Reboot: 0) **WARN** it will cut the call if customer calling from his VOIP line ; 1) unplug power, replug ; 2) wait for power and fiber led stable - a firmware could be downloaded, it would trigger a 2nd reboot
- Reset: 0) **WARN** the customer that he could lose his modified settings (e.g. Wifi passwords) unless he saves his configuration beforehand in a file : Box_Save_Config and **WARN** it will cut the call if customer calling from his VOIP line ; 1) while power on, insert a pin for 5 seconds into the reset area besides the power plug ; 2) wait for power and fiber led stable - a firmware could be downloaded, it would trigger a 2nd reboot
- Check SN: below the box, string after "S/N:" (SFAAXXXXXXX)
- Check Firmware version: Expert / Overview / Version

Wifi tools

- PC Windows (Windows 7/8/10): 1) NirSoft WifiInfoView (free): click on Channel column to sort and identify less used channel ; 2) NetSpot (free): discover (top-left) > Details (bottom-left) > Channels 2.4 GHz or Channels 5 GHz and observe less used channel ; 3) Acrlyic Wifi Home (free): in the bottom-half part of the screen, 2.4GHz Networks or 5GHz Networks
- MacBook (macOS 10.10+): NetSpot (free)
- PC (Linux): LinSSID
- Android: 1) WiFi Moho (free) ; 2) Wifi Analyzer

Wifi articles

- What's the Difference Between 2.4 and 5-Ghz Wi-Fi (and Which Should I Use)? <https://www.howtogeek.com/222249/whats-the-difference-between-2.4-ghz-and-5-ghz-wi-fi-and-which-should-you-use/>
- An interesting article by developer of the app Wifi Analyzer <http://a.farproc.com/wifi-analyzer>
- Apple bluetooth interference to WiFi** <https://support.apple.com/fr-fr/HT201542>
- Digitec article in French on CPL repeaters "Estimez-vous heureux si vous obtenez 10% de la performance annoncée." <https://www.digitec.ch/fr/s1/page/comparons-les-cpl-2000-mbps-mais-bien-sur-7671>
- Digitec article in German on Powerline repeaters "Wer zehn Prozent der versprochenen Leistung erhält, darf glücklich sein" <https://www.digitec.ch/de/s1/page/powerline-vergleich-2000-mbps-da-lachen-ja-die-huehner-7671>

VOIP info

Salt Fiber comes with 3 services on the Salt Fiber Box : Internet + TV + Telephony

The Salt Fiber Box **telephony works in MGCP protocol between MGCP client (installed on the box) and MGCP server (installed on Salt servers) via the VOIP VLAN. Residential customer devices can connect to the MGCP client via FXS port (wire) or via DECT base (wireless). Note that a DECT device can also connect to the box on FXS port via its base. Anything else is not supported.**

Salt telephony is delivered through the internet connection, this is called VoIP (= Voice Over IP), this is different from ISDN or PSTN. The VoIP protocol we currently use is MGCP, this means the customers cannot use a SIP phone on the Salt Fiber box VOIP line.

However, if our customers have a SIP telephony provider, they can use another telephony solution than the one provided with the box, but in that case Salt does not support installation or usage of this service. In the roadmap, the SIP is currently high level planned around December, so I would not even mention this to a customer, taking into account all the Bugs not yet fixed by Arcadyan.

Good definitions (found in french on <https://www.w3tel.com/voip/definitions-voip.html>): **We do We do not do**

- **VoIP** (Voice over Internet Protocol) : Egalement appelée Téléphonie sur IP ou Téléphonie par Internet, la VoIP correspond à l'acheminement de conversations sur le réseau Internet public ou sur tout réseau IP Privé. Par comparaison avec les réseaux téléphoniques à commutation de circuit, la VoIP est conçue pour fonctionner sur des réseaux à commutation de paquets.
 - **MGCP** (Media Gateway Control Protocol) : MGCP est un protocole asymétrique (client-serveur) de VoIP publié sous la RFC 3435 par l'IETF. Il se distingue des protocoles SIP et H.323 qui, eux, sont symétriques (client-client). MGCP est notamment utilisé par les fournisseurs d'accès Internet dans leur Box ADSL pour fournir des services de téléphonie. Ce protocole est également utilisé pour des services de type Centrex IP.
 - **SIP** (Session Initiation Protocol) : SIP est un protocole publié par un groupe de travail de l'IETF sous la RFC3261 et est un standard "de fait" pour l'établissement, la modification ou la déconnexion de sessions de communication entre utilisateurs comprenant notamment la voix, la vidéo et la messagerie instantanée. SIP est aujourd'hui considéré comme le protocole VoIP de référence.
 - **H.323** : H.323 regroupe un ensemble de protocoles de communication de la voix, de l'image et de données sur IP. C'est un protocole développé par l'UIT-T qui le définit comme « Systèmes de communication multimédia en mode paquet ».

Contrairement à SIP qui est un protocole issu d'Internet, H.323 trouve ses origines dans le protocole RNIS plus rigide et moins ouvert. Apparu avant SIP, H.323 a été utilisé pour monter les premiers réseaux VoIP mais il est aujourd'hui clairement supplanté par SIP.

PSTN (Public Switched Telephone Network) : Equivalent anglais du RTC.

- **RTC** (Réseau Téléphonique Commuté) : Le RTC est un réseau à commutation de circuits permettant principalement l'acheminement de communications vocales et plus rarement de données. Le RTC constitue encore aujourd'hui le réseau téléphonique le plus important mais la VoIP supplanté progressivement le RTC.

ISDN (Integrated Services Digital Network) : Equivalent anglais du RNIS.

- **RNIS** (Réseau Numérique à Intégration de Services) : Le RNIS est apparu au début des années 90 et a progressivement remplacé les communications analogiques dans le RTC mondial. Le RNIS est lui même progressivement remplacé par la VoIP.

I - LEDs checks (must be done in this order)

Power LED on (should be GREEN STABLE)

1. Plug all according to VIDEO
2. Plug other device to electric wall mount to check it
3. Change power adapter in Store
4. Box swap "Dead power ; <SO_Ticket_ID>"

Fiber LED on (should be GREEN STABLE)

1. Check POM processes completed
2. Plug all according to VIDEO (Box - SFP - Fiber cable - OTO) and check OTO_id + OTO_plug ~~All~~SFP shall only be unplugged/replugged while box has no power
3. Reboot box
4. Reset box

OFF

1. Check if box faces epidemic failure (Non-stop reboot, [Booting issue](#), Dead power) > Box swap "<relevan reason> ; <SO_Ticket_ID>" ; see "B - Box REPLACEMENT"
2. If the box was not swapped
 - a. Capture Rx
 - b. Check the Rx situation



Optical Rx values



- if Rx > -21 (-11 to -21) Ticket Tech "Fiber Off" with Rx + info that Fiber LED is OFF
 - [3rd level] check OLT (ranging-status, DHCP, errors in MAC-VLAN association, errors in traffic, **i inactive**, disabled)
 - [3rd level] check if single case or other similar customer issues, if other check if ongoing problem with Core IP team
 - [3rd level] we will solve (by visiting the customer if needed) and/or ask you to raise ALO/ALEX and/or to swap the box
- if Rx <-21 (-21 to -30)
 - swap the fiber cable
 - if still Rx <-21 dBm
 - if customer was never online, ALO/ALEX ticket
 - if customer was once online, Ticket Tech "Fiber Off" with Rx + info that fiber cable was swapped + info that Fiber LED is OFF
 - Ticket Tech "Fiber Off" with Rx + info that **fiber cable** was swapped + ALO/ALEX ticket number

- + outcome on OTO-OHDF link + info that Fiber LED is OFF
- [3rd level] check OLT (ranging-status, DHCP, errors in MAC-VLAN association, errors in traffic, inactive + loss of signal, disabled)
- [3rd level] we will solve (by visiting the customer if needed) and/or ask you to challenge ALO/ALEX (update or new ticket) and/or to swap the box

- If the box was swapped (customer using the new fiber cable)
 - Capture Rx
 - Check the Rx situation



Optical Rx values



- if Rx > -21 (-11 to -21) Ticket Tech "Fiber Off" with Rx + info that Fiber LED is OFF
 - [3rd level] check OLT (ranging-status, DHCP, errors in MAC-VLAN association, errors in traffic, inactive, disabled)
 - [3rd level] check if single case or other similar customer issues, if other check if ongoing problem with Core IP team
 - [3rd level] we will solve (by visiting the customer if needed) and/or ask you to raise ALO/ALEX and/or to swap the box
- if Rx <-21 (-21 to -30)
 - ALO/ALEX ticket
 - if customer was never online, ALO/ALEX ticket
 - if customer was once online, Ticket Tech "Fiber Off" with Rx + info that fiber cable was swapped + info that Fiber LED is OFF
 - Ticket Tech "Fiber Off" with Rx + info that box was swapped + ALO/ALEX ticket number + outcome on OTO-OHDF link + info that Fiber LED is OFF
- [3rd level] we will solve (by visiting the customer if needed) and/or ask you to challenge ALO/ALEX (update or new ticket) and/or to swap the box

RED BLINKING

- Capture Rx
- Check the Rx situation



Optical Rx values



- if Rx > -21 (-11 to -21) Ticket Tech "Fiber Red Blinking" with Rx + info that Fiber LED is RED BLINKING
 - [3rd level] check OLT (ranging-status, DHCP, errors in MAC-VLAN association, errors in traffic, inactive, disabled)
 - [3rd level] check if single case or other similar customer issues, if other check if ongoing problem with

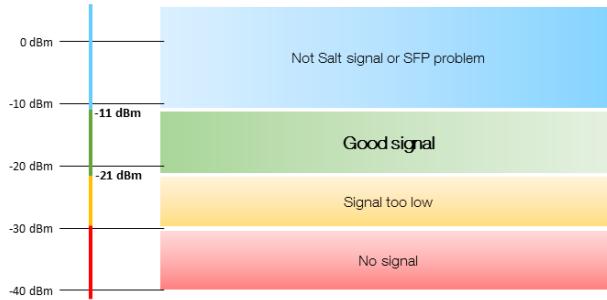
- Core IP team
- [3rd level] we will solve (by visiting the customer if needed) and/or ask you to raise ALO/ALEX and/or to swap the box
- if Rx <-21 (-21 to -30)
 - swap the fiber cable
 - if still Rx < -21
 - if customer was never online, ALO/ALEX ticket
 - if customer was once online, Ticket Tech "Fiber Red Blinking" with Rx + info that fiber cable was swapped + info that Fiber LED is RED BLINKING
 - Ticket Tech "Fiber Red Blinking" with Rx + info that fiber cable was swapped + info that Fiber LED is RED BLINKING
 - [3rd level] check OLT (ranging-status, DHCP, errors in MAC-VLAN association, errors in traffic, inactive, **disabled**)
 - [3rd level] check if single case or other similar customer issues, if other check if ongoing problem with Core IP team
 - [3rd level] we will solve (by visiting the customer if needed)and/or ask you to raise ALO/ALEX and/or to swap the box

RED STABLE

- Check if box faces epidemic failure (Non-stop reboot, [Booting issue](#), Dead power) > Box swap "<relevan reason> ; <SO_Ticket_ID>" ; see "B - Box REPLACEMENT"
- Capture Rx
- Check the Rx situation



Optical Rx values



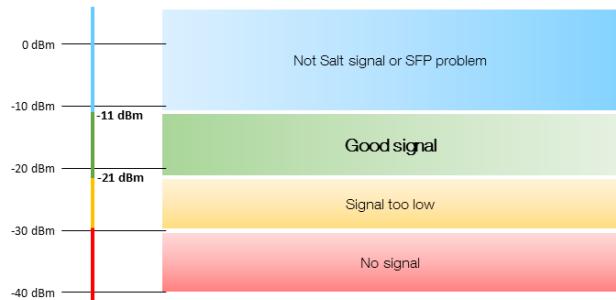
- if Rx > -21 (-11 to -21) Ticket Tech "Fiber Red" with Rx + info that Fiber LED is RED STABLE
 - [3rd level] check OLT (ranging-status, DHCP, errors in MAC-VLAN association, errors in traffic, inactive, **disabled**)
 - [3rd level] check if single case or other similar customer issues, if other check if ongoing problem with Core IP team
 - [3rd level] we will solve (by visiting the customer if needed) and/or ask you to raise ALO/ALEX and/or to swap the box
- if Rx <-21 (-21 to -30)
 - swap the fiber cable
 - Ticket Tech "Fiber Red" with Rx + info that fiber cable was swapped + info that Fiber LED is RED STABLE
 - [3rd level] check OLT (ranging-status, DHCP, errors in MAC-VLAN association, errors in traffic, inactive, **disabled**)
 - [3rd level] check if single case or other similar customer issues, if other check if ongoing problem with Core IP team
 - [3rd level] we will solve (by visiting the customer if needed)and/or ask you to raise ALO/ALEX and/or to swap the box

GREEN BLINKING more than 1 minute

- Capture Rx
- Check the Rx situation



Optical Rx values



3. if $Rx > -21$ (-11 to -21) Ticket Tech "Fiber Green Blinking" with Rx + info that Fiber LED is GREEN BLINKING
 - waiting case 8588136 for feedback
 - [3rd level] check OLT (ranging-status, DHCP, errors in MAC-VLAN association, errors in traffic, inactive, **disabled**)
 - [3rd level] check if single case or other similar customer issues, if other check if ongoing problem with Core IP team
 - [3rd level] we will solve (by visiting the customer if needed) and/or ask you to raise ALO/ALEX and/or to swap the box
4. if $Rx < -21$ (-21 to -30)
 - a. swap the fiber cable
 - b. if still $Rx < -21$
 - c. Ticket Tech "Fiber Red" with Rx + info that **fiber cable was swapped** + info that Fiber LED is GREEN BLINKING
 - [3rd level] check OLT (ranging-status, DHCP, errors in MAC-VLAN association, errors in traffic, inactive, **disabled**)
 - [3rd level] check if single case or other similar customer issues, if other check if ongoing problem with Core IP team
 - [3rd level] we will solve (by visiting the customer if needed) and/or ask you to raise ALO/ALEX and/or to swap the box

GREEN BLINKING for ~23s followed by RED STABLE for ~3s (repeated cycle) and customer is on Huawei OLT (cf VTI > Offer management > health dashboard)

1. Check in POM if there was a change BOK during fulfilment, if yes > **Ticket Tech "BOK swap during fulfilment"**
2. Check Box SN with customer (compare the SN given by the customer versus SN in VTI)
3. if different
 - a. Make sure box is plugged on customer side
 - b. **Ticket Tech "Wrong box"** with "VTI box SN" and "customer has in hands box SN" as given by the customer on the phone
 - [3rd level] if we see effectively wrong box on BOK, swap (no post) "Update SN ; <SO_Ticket_ID> ; Logistics Wrong box shipped" if the box in customer's hands is not already assigned to some other customer, or swap it remotely (swap "Logistics ; <SO_Ticket_ID> ; Wrong box shipped")
4. if same
 - a. Make sure box is plugged on customer side
 - b. **Ticket Tech "Fiber cycle Green and Red"** with "VTI box SN" and "customer has in hands box SN" as given by the customer on the phone
 - [3rd level] if we see box on wrong BOK we will revert so that you create an ALO/ALEX (wrong customer patching by FLL partner)
 - [3rd level] if we see box on correct BOK we will reprovision the customer

www LED on (should be GREEN STABLE)

1. Check POM processes completed
2. Check in POM if there was a change BOK during fulfilment, if yes > **Ticket Tech "BOK swap during fulfilment"**
3. Plug all according to VIDEO (Box - SFP - Fiber cable - OTO) and check OTO_id + OTO_plug Δ SFP shall only be unplugged/replugged while box has no power
4. Make sure there is no LAN loop between 2 LAN ports of the box
5. Reboot (wait for power and fiber led stable - a firmware could be downloaded, it would trigger a 2nd reboot)
6. Check Box SN with customer (compare the SN given by the customer versus SN in VTI)
 - a. if different
 - i. Make sure box is plugged on customer side
 - ii. **Ticket Tech "Wrong box"** with "VTI box SN" and "customer has in hands box SN" as given by the customer on the phone

customer on the phone

- [3rd level] if we see effectively wrong box on BOK, swap (no post) "Update SN ; <SO_Ticket_ID> ; Logistics Wrong box shipped" if the box in customer's hands is not already assigned to some other customer, or swap it remotely (swap "Logistics ; <SO_Ticket_ID> ; Wrong box shipped")

b. if same

- i. Make sure box is plugged on customer side
- ii. **Ticket Tech "www OFF" with "VTI box SN" and "customer has in hands box SN" as given by the customer on the phone**
 - [3rd level] if we see box on wrong BOK we will check if it's a single case or if it concerns several boxes for same BOK
 - if single case, we will revert so that you create an ALO/ALEX (wrong customer patching by FLL partner)
 - if multiple case, we will correct the port/splitters patching on our OLT
 - [3rd level] if we see box on correct BOK we will
 - check the optical link (if down we will revert for box connection)
 - check the MACs (thus if needed reprovision)
 - check the lease in box-management (thus if lease exists delete it).

WLAN LED (should be GREEN blinking or stable)

OFF permanently: WLAN de-activated

1. push WLAN button for 2 to 5 seconds to enable it
2. GUI > Expert > WLAN > toggle buttons to have wifi on (buttons green) > save
3. Reset box

II - Internet

1. Power LED + Fiber LED + www LED are all GREEN STABLE
2. Go back to §LEDs checks

KO

1. Check POM and VTI (**lessons learned after incident 8923058: if there was a move (new address) of the customer, ask him to reset the box**)
2. Check in VTI customer events' log that customer is not suspended (**lessons learned after several cases**)
3. Connect a device in LAN and access to www.google.com via a browser
4. Connect AppleTV in LAN and run an app
5. Connect AppleTV in WLAN 2.4GHz and run an app
6. Connect AppleTV in WLAN 5GHz and run an app
7. Install available updates for the device and Restart device (especially important on Smartphones, Tablets, and MacOS)
8. Try another device
9. Try another browser
10. Try another interface (LAN / WLAN 2.4 GHz / WLAN 5GHz)
11. Reboot box
12. Reset box (**lessons learned adter incident 8923058: if there was a move (new address) of the customer, ask him to reset the box**)
13. Capture Rx
 - a. Rx < -21 dBm) : Fiber cable replacement and then ALO/ALEX ticket if still Rx < -21 dBm
 - b. (Rx > -21 dBm) or (ALO/ALEX confirmed OTO-OHDF link ok and fiber replaced but same status): Capture Rx and **Ticket Tech "No Internet" with Rx + detailed list of tested devices and interfaces + detailed list of troubleshooting steps** done with results and screenshots + below table filled

Contractor and public IP	URL (not name of a service)	When the issue started ?	Description	Screenshot or Video	Interface tested	Device type, brand, model & OS version
30001234 213.55.111.345	https://www.tagesanzeiger.ch/	25/02/2019 17:00	page opens, some text appears, but images and full web page take 2 to 3 minutes to be displayed	See attached video from customer	WLAN 2.4	Smartphone ; Samsung ; A3 ; Android 8.1
	facebook.com	25/02/2019 17:00	page does not open	See attached video from customer	WLAN 5GHz	Tablet ; Apple ; iPad mini ; iOS 10.2

Salt.TV	25/02/2019 17:00	live tv does not play	See attached video from customer	LAN	Apple TV ; Apple ; Apple TV 4k ; tvOS 10.4
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- [3rd level] If case not valid (not containing above requested information and troubleshooting evidences), challenge the case
- [3rd level] If box is offline in box-management but we see the DHCP was renewed and box is linked to OLT (optics, operational-data), delete DHCP lease and if still not ok, reboot the box.
- [3rd level] OLT traffic on internet VLAN (if errors, reprovision)
- [3rd level] IPs (VTI dashboard "IPs" + VTI dashboard "OLT (nokia/huawei)") vs OLT configuration (IPs) (if different, reprovision)
- [3rd level] check if single case or other similar customer issues, if other check if ongoing problem with Core IP team

SLOW (means < 80 Mbps in LAN or < 20 Mbps in both WLAN)

1. Apple TV in LAN, Go to App Store



and download Speedtest app



, start the app then select Salt in the test servers list: > 700 Mbps, line is ok

2. Connect a device on LAN (with the provided RJ-45 cable), download Speedtest app



, start the app then select Salt in the test servers list and capture SpeedTest full screen screenshot OR access to <http://salt.speedtest.net/> - choose "Salt" server only ! and capture SpeedTest full screen screenshot

3. Use Apple TV in WLAN 5GHz, Go to App Store



and download Speedtest app



, start the app then select Salt in the test servers list

4. Use WLAN 5GHz, use Speedtest app



(on Windows/macOS/iOS/Android) and select Salt in the test servers list

5. Use WLAN 5GHz, go to <http://salt.speedtest.net/> (on Linux)

6. Use WLAN 2.4GHz, use Speedtest app



(on Windows/macOS/iOS/Android) and select Salt in the test servers list

7. Use WLAN 2.4GHz, go to <http://salt.speedtest.net/> (on Linux)

a. > 80 Mbps in LAN or > 20 Mbps in **one** WLAN : most probably there is no issue, limitation certainly comes from his device, you will have to convince the customer using information and examples from this procedure

b. ~100 Mbps or ~1Gbps in LAN, limitation certainly comes from his device network interface (100 Mbps / 1000 Mbps)

c. < 80 Mbps in LAN or < 20 Mbps in **both** WLAN

i. Reboot box

ii. Install available updates for the device and Restart device

iii. Reset Box

iv. Try with another device

v. Capture Rx

1. (Rx < -21 dBm) : Fiber cable replacement and then ALO/ALEX ticket if still Rx < -21 dBm

2. (Rx > -21 dBm) or (ALO/ALEX confirmed OTO-OHDF link ok and fiber replaced but same status): Capture Rx and **Ticket Tech "Speed"** with **Rx + detailed list of tested devices and interfaces + detailed list of troubleshooting steps** done with results and screenshots + below **table** filled

Contractor and public IP	Speed method	Date of test	SpeedTest server	Screenshot or Video	Download	Upload	Interface tested	Device type, brand, model & OS version
30001234 213.55.111.345	salt.speedtest.net	25/02/2019 17:00	Salt	See attached screenshot from customer	54.2 Mb/s	48.3 Mb/s	WLAN 5GHz	Smartphone ; Samsung ; A3 ; Android 8.1
	SpeedTest app	25/02/2019 17:00	Salt	See attached screenshot from customer	129.4 Mb/s	131.2 Mb/s	WLAN 5GHz	Tablet ; Apple ; iPad mini ; iOS 10.2

SpeedTest app	25/02/2019 17:00	Salt	See attached screenshot from customer	934 Mb/s	941 Mb/s	LAN	Apple TV ; Apple ; Apple TV 4k ; tvOS 10.4
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- [3rd level] If case not valid (not containing above requested information and troubleshooting evidences), challenge the case
- [3rd level] validate the line without hardware acceleration by remotely testing the speed, using the box CPU.
- [3rd level] if line is ok we will revert to you and you will have to convince the customer using information and examples from this procedure
- [3rd level] if line is not ok we will check with our IP team and revert to you with information or with a fix so that you check back with the customer or we will visit the customer

CUTS

1. connect a device on LAN (with the provided RJ-45 cable) access to <http://salt.speedtest.net/> via a browser (on Linux/Windows/macOS) - ask **Speedtest full screen screenshot** of result on Salt server only !
2. Install available updates for the device and Restart device
3. Try another device
4. Try another browser
5. Try another interface (LAN / other LAN ports / WLAN 2.4 GHz / WLAN 5GHz)
6. Try with Apple TV
7. Reboot box
8. Reset box
 - a. OK on LAN but cuts in WLAN: scan neighborhood and configure WLAN to use a less used channel
 - b. OK on WLAN but cuts in LAN: check if the Salt cable is used / change LAN port / change LAN cable in Store
 - c. Capture Rx
 - i. (Rx < -21 dBm) : Fiber cable replacement and then ALO/ALEX ticket if still Rx < -21 dBm
 - ii. (Rx > -21 dBm) or (ALO/ALEX confirmed OTO-OHDF link ok and fiber replaced but same status): **Ticket Tech "LAN cuts" or "WLAN cuts" with Rx + detailed list of tested devices and interfaces + detailed list of troubleshooting steps done with results and screenshots**
 - [3rd level] If case not valid (not containing above requested information and troubleshooting evidences), challenge the case
 - [3rd level] If Rx stable over last weeks, visit
 - [3rd level] If Rx degraded over the last weeks, or Tx weird, swap "Other ; XXXXXXX ; SFP suspected" or visit to swap SFP or investigate
 - [3rd level] Document cases here in this procedure to illustrate

WEB PAGES (not all) take LONG TIME to be displayed or are NOT DISPLAYED at all

Surfing experience is degraded (slowness observed), customer complains that some services, apps, or web pages do not load/display as usually

1. Check <https://www.downDetector.com/> and see if mentioned service or app faced an issue at the time it was reported - if customer has the same issue in 4G or with another ISP, you can be sure it's not an issue linked to Salt fiber
2. Try in LAN / WLAN2.4GHz / WLAN 5GHz
3. Reboot Box
4. Install available updates for the device and Restart device
5. Try another device
6. Reset box
7. Capture Rx
8. **Ticket Tech "Service issue - LAN" or "Service issue - WLAN 2.4GHz" or "Service issue - WLAN 5GHz" with Rx + detailed list of tested devices and interfaces + detailed list of troubleshooting steps done with results and screenshots + below table filled**

Contractor and public IP	URL (not name of a service)	When the issue started ?	Description	Screenshot or Video	Interface tested	Device type, brand, model & OS version
30001234 213.55.111.345	https://www.tagesanzeiger.ch/	25/02/2019 17:00	page opens, some text appears, but images and full web page take 2 to 3 minutes to be displayed	See attached video from customer	WLAN 2.4GHz	Smartphone ; Samsung ; A3 ; Android 8.1

facebook.com	25/02/2019 17:00	page does not open	See attached video from customer	WLAN 5GHz	Tablet ; Apple ; iPad mini ; iOS 10.2
Salt.TV	25/02/2019 17:00	live tv does not play	See attached video from customer	LAN	Apple TV ; Apple ; Apple TV 4k ; tvOS 10.4

- [3rd level] If case not valid (not containing above requested information and troubleshooting evidences), challenge the case
- [3rd level] check ping, curl and traceroute to mentioned sites
- [3rd level] OLT traffic on internet VLAN (if errors, reprovision)
- [3rd level] IPs (VTI dashboard "IPs" + VTI dashboard "OLT (nokia/huawei)") vs OLT configuration (IPs) (if different, reprovision)
- [3rd level] check if single case or other similar customer issues, if other check if ongoing problem with Core IP team

III - Wifi

1. Power LED + Fiber LED + www LED are all GREEN STABLE
2. Go back to §LEDs checks
3. **Reboot box > check WLANs are active in box-management > if one is inactive (red bullet) Reset box**

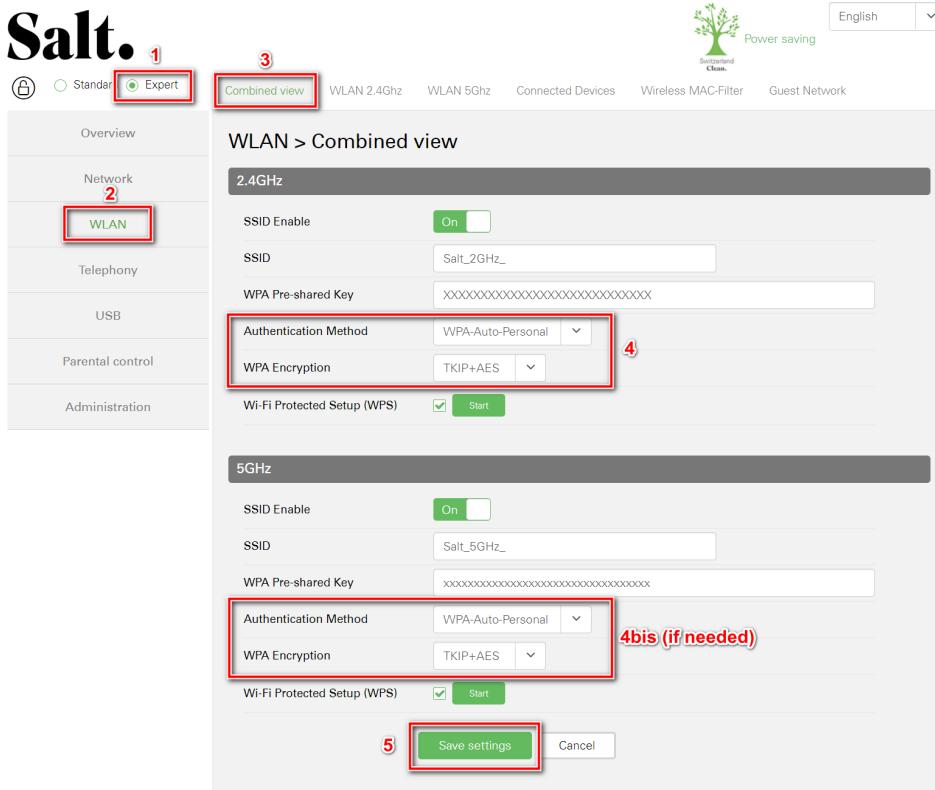
INVISIBLE

1. Reset box
2. Check WLAN is activated or activate both WLANs (to activate: router configuration or push WLAN button for 2 to 5 seconds to enable it)
3. Install available updates for the device and Restart device
4. Try another device
5. Unplug all devices and Reset box
6. Get picture of TV with Apple TV searching for available SSIDs (after box reset)
7. Get closer to the box (if confirmed ok <3m and ko >3m without obstacles (e.g. wall) and **not further**, swap "Wifi weak; <SO_Ticket_ID> ; Distance - **box to be back in Crissier for retesting**" and "intercept" the box (see § Box replacement)
8. **Ticket Tech "Wifi invisible"** with info that Wifi invisible is suspected + specify which band (2.4 GHz / 5 GHz / 2.4GHz and 5 GHz) + detailed list of tested devices + screenshot of Apple TV (step 6 above)
 - [3rd level] check if devices connected in WLAN > if devices connected on incriminated band, challenge the case
 - [3rd level] check MAC addresses
 - if issue, check if UMC or TSMC
 - If UMC, ask 2nd level to swap "Wifi invisible ; <SO_Ticket_ID> ; UMC MAC <band> not shown" - if you do the swap you have to inform customer to bring back old box, in original casing and with all original accessories, in a Salt Store
 - if TSMC, ask 2nd level to "intercept" (see § Box replacement) and to swap "Wifi invisible ; <SO_Ticket_ID> ; TSMC MAC <band> not shown - **box to be back in Crissier for retesting**"
 - if no issue on MAC, update the ticket back with this info and the current observed SSID + SSIDs as they should appear after reset (In GUI > Overview > Fiber, take the last 6 digits of Physical Address, subtract 2, e.g. 4C:1B:86:91:5F:D6 > Salt_2GHz_915FD4 and Salt_5GHz_915FD4)
 - [3rd level] we will solve (by visiting the customer if needed) and/or ask you for more info on the case

VISIBLE but impossible to REGISTER

1. Install all available updates for the device (OS or FW) and Restart device
Be careful, sometimes if the device missed old upgrades, you can't get directly to the latest one. Example, if the device is on 1.1 and 1.5 exists, maybe the device can't jump directly to 1.5 but shall goes through 1.2, 1.3, 1.4 then 1.5
2. If customer has the problem with a **Mac**, running Mojave, release OS X 10.14.2 or 10.14.3, ask the customer to upgrade to latest version (10.14.4 currently) - *more info at <http://osxdaily.com/2018/11/19/fix-macos-mojave-wifi-problems/>*
3. If customer has a **Mac** (Mini, MacBook Pro), and faces some times the error "Connection timeout / The Wi-Fi network "Salt_5GHz_xxxx" requires a WPA2 password", (btw the workaround consists in deactivating and reactivating wifi or delete this wifi network on the Mac), ask the customer to Open System Preferences / Network / WIFI / Advanced / TCP/IP and then click the Renew DHCP Lease - *more info at <https://discussions.apple.com/thread/250040087>*
4. If customer has the problem with an **iPhone**, running iOS 12.3.1, ask the customer to reset network settings: Settings > General > Reset > Reset network settings - *more info at <https://www.youtube.com/watch?v=H8gOa7tL2oM> (this will restart the iPhone and delete previously recorded WLAN networks and passwords)*
5. If customer has the problem with a **PC** in Windows 10, ask customer to reset network adapter:
 - a. **Windows 7:** Start > All Programs > Accessories > right-click Command Prompt ; then type **netsh winsock reset** and press **Enter** - *more info at <https://www.geeksinphoenix.com/blog/post/2010/12/03/Resetting-your-network-adapter-in-Windows-7.aspx>*

- b. **Windows 10:** Windows > Settings > Network & Internet > Status > Network reset > Reset now > Yes - more info at <https://www.digitalcitizen.life/how-reset-all-your-windows-10-network-adapters-just-6-clicks> and <https://www.youtube.com/watch?v=moZkFMNKvtE> (this will restart the PC and delete previously recorded WLAN networks and passwords)
6. if customer has the problem with an "**old/other device**", (at least this helped with Fairphone, Samsung A5, Xiaomi Mi 9T), ask customer to **change wireless authentication method** on the box for the desired band (2.4 GHz or 5GHz or both): GUI > Expert > WLAN > Combined view > Authentication method = "WPA-Auto-Personal" & WPA Encryption = "TKIP+AES"



7. Reset box
 8. Check password is correct (GUI > Expert > WLAN)
 9. Try another device
 10. Unplug all devices and Reset box
 11. Get picture of TV with Apple TV trying to connect to WLAN (after box reset)
 12. **Ticket Tech "Wifi register impossible"** with info that Wifi register impossible is suspected + specify which band (2.4 GHz / 5 GHz / 2.4GHz and 5 GHz) + detailed list of tested devices + screenshot of Apple TV (step 6 above)
 - [3rd level] check if devices connected in WLAN > if devices connected on incriminated band, challenge the case
 - [3rd level] check if case valid and if UMC or TSMC
 - If UMC, ask 2nd level to swap "Wifi weak ; <SO_Ticket_ID> ; Distance - **UMC**" - if you do the swap you have to inform customer to bring back old box, in original casing and with all original accessories, in a Salt Store
 - if TSMC, ask 2nd level to "intercept" (see § Box replacement) and to swap "Wifi weak ; <SO_Ticket_ID> ; Distance - **TSMC box to be back in Crissier for retesting**"
 - [3rd level] we will solve (by visiting the customer if needed) and/or ask you for more info on the case

REGISTERED but impossible to access INTERNET

cf INTERNET / INTERNET KO

INSTABLE

cf INTERNET / INTERNET CUTS

Sonos.instability reported: as suggested by Sonos support to some customers, ask them to disable Airtime Fairness on the Salt Fiber Box wifi (pre-requisite: wifi authentication method shall be WPA2-Personal): GUI > Expert > WLAN > [desired band] > Airtime Fairness > Deactivate > Disable - more info at <https://routerguide.net/airtime-fairness-on-or-off/>

WEB PAGES (not all) take LONG TIME to be displayed or are NOT DISPLAYED at all

Surfing experience is degraded (slowness observed), customer complains that some services, apps, or web pages do not load/display as usually

1. Check <https://www.downDetector.com/> and see if mentioned service or app faced an issue at the time it was reported - if customer has the same issue in 4G or with another ISP, you can be sure it's not an issue linked to Salt fiber
2. Ask customer to change the Authentication method to WPA-Auto-Personal and Encryption from AES to TKIP+AES (case 8132295 solved that way)
3. Try in LAN
4. Reboot Box
5. Install available updates for the device and Restart device
6. Try another device
7. Try the other WLAN band (WLAN 2.4 GHz / WLAN 5GHz)
8. Reset box
9. Capture Rx
10. **Ticket Tech "Service issue - LAN" or "Service issue - WLAN 2.4GHz" or "Service issue - WLAN 5GHz" with Rx + detailed list of tested devices and interfaces + detailed list of troubleshooting steps done with results and screenshots + below table filled**

Contractor and public IP	URL (not name of a service)	When the issue started ?	Description	Screenshot or Video	Interface tested	Device type, brand, model & OS version
30001234 213.55.111.345	https://www.tagesanzeiger.ch/	25/02/2019 17:00	page opens, some text appears, but images and full web page take 2 to 3 minutes to be displayed	See attached video from customer	WLAN 2.4GHz	Smartphone ; Samsung ; A3 ; Android 8.1
	facebook.com	25/02/2019 17:00	page does not open	See attached video from customer	WLAN 5GHz	Tablet ; Apple ; iPad mini ; iOS 10.2
	Salt.TV	25/02/2019 17:00	live tv does not play	See attached video from customer	LAN	Apple TV ; Apple ; Apple TV 4k ; tvOS 10.4

D - Speed

Devolo repeaters

Speedtest App										
			Get it from Microsoft							
Châssis	OS	Network interface	Devolo WIFI 2.4 GHz				Salt box WIFI 2.4 GHz		Salt box WIFI 5 GHz	
			Download	Upload			Download	Upload	Download	Upload
Samsung Galaxy Book Intel Core i5 - 2.5 GHz - 16 Go	Windows 10 Professionnel	integrated WLAN interface	28.46	35.28			70.70	73.52	351.78	380.73
			LAN Devolo (Wifi module)		LAN Devolo (Master module)				LAN Salt box	
			Download	Upload	Download	Upload			Download	Upload
Samsung Galaxy Book Intel Core i5 - 2.5 GHz - 16 Go	Windows 10 Professionnel	integrated LAN interface	94.14	86.25	94.97	90.84			497.11	858.35

Antivirus

			Speedtest App									
Châssis		OS	Network interface		antivirus not installed		antivirus installed and active		antivirus installed but de-activated		antivirus un-installed	
					Download	Upload	Download	Upload	Download	Upload	Download	Upload
MacBook Pro (Retina, 15-inch, Late 2013) MacBookPro11,2 Intel Core i7 - 2.6 GHz - 16 Go	Windows 10 Ultimate	external Sonnet Twin 10G 10GbaseT (TB2)			8245 8194 8032 7576	7918 7996 7647 7961	2158 2517 1993	6148 6291 7807	1870 2845 3903 4006 3889 3714	8008 8087 8051 7937 8026 8093	7944	8097

Consequences of not measuring according to procedure (Speedtest app by Ookla vs browsers ; ad-blockers)

			Speedtest App		Chrome 71.0.35				Firefox 64.0.2		IE 11.0.101		Safari 12.0.2	
Châssis	OS	Network interface	Download	Upload	Download	Upload	Download	Upload	Download	Upload	Download	Upload	Download	Upload
AMD FX-8150 Eight-Core Proc 3.6GHz RAM 32BG SSD	Windows 7 Ultimate	ASUS XG-C100C 10G	8152 8168 8180 8163	8091 8072 7762 8016	1636 1403 1643	3320 3029 3239	2209 2111 2110	3215 3146 3289	945 1062 925	1450 1208 1433	149 179 214	413 317 446		
Mac mini (2018) Macmini8,1 Intel Core i7 - 3.2 GHz - 32 Go	macOS Mojave 10.14.2 (18C54)	internal 10gbe card	7951 8074 8082	2920 3472 2767									8042 8035 8029	2958 2589 2620
		external Sonnet Solo 10G (TB3)	8013 8101 8076	2797 3116 3757									8079 8070 8036	2514 2655 2807
														"This webpage is using significant memory"
Mac mini (2018) Macmini8,1 - Intel Core i7 - 3.2 GHz - 32 Go	Windows	internal 10gbe card												
Macbook pro 13 2016 Intel Core i5 - 2 GHz - 16 Go		external Sonnet Solo 10G (TB3)	5760 5254 5597	2787 2744 2724	456 630 678	2848 2896 2701			536 538 595	731 701 672			3205 3684 3386	2314 2458 2361
MacBook Pro (Retina, 15-inch, Late 2013) MacBookPro11,2 Intel Core i7 - 2.6 GHz - 16 Go	macOS High Sierra 10.13.6 (17G5014)	external Sonnet Twin 10G 10GbaseT (TB2)	8175 8178 8184 8175 8196	3716 3317 3720 4280 3298			2953 3137 3243 3124	2954					6545 6576 6600	3063 3147 3057
	Windows 10 Ultimate		8070 7931 8163	7782 7924 7752			1730 1866 1991	3131 3351 3673			912 779 903	2677 2183 2277		

E - URLs blocked (Bank of America & co)

	Customer	Name	Ticket	Original IP	Issue with	Management IP & Config file	Action Taken
1	30010999	ZHOU Ting	7352205	51.154.2.23	linux.cn	10.101.208.114 - ZH_9212_79SEE_OLT1_4_1_23.cfg	changed IP through VTI: 51.154.22.53 - solved
2	30016630	Zdenek Urban	7053242	51.154.13.107	bankofamerica.com	10.102.128.88 - ZH_9221_79ADL_OLT1_1_0_2_32.cfg	manually allocated testbed IP: 213.55.212.2 https://prov-workflow-engine.salt.ch/process/5d
3	30018741	Cedric Dekegel	7333924	51.154.21.160	bankofamerica.com	10.98.112.140 - GE_9212_68PEL_OLT1_5_1_31.cfg	closed
4	30013395	Alessandro Chiesa	7738483	51.154.6.138	bankofamerica.com	10.101.104.56 - ZH_9204_79ZHE_OLT1_2_1_28.cfg	closed
5	30040773	Christian Matt	7717282	51.154.82.62	bankofamerica.com	10.101.16.245 - ZH_9201_79ALB_OLT1_21_1_6.cfg	solved by BOA
6	30020075	Haluk Tekbulut	7715140	51.154.23.156	https://www.hsbc.com.tr/	10.97.40.64 - BL_9201_62BSG_OLT1_3_1_21.cfg	closed
7	30044964	Klaus Erich Bättig Gonzalez	7813135	51.154.92.204	bankofamerica.com	10.99.176.69 - LU_9201_71FLU_OLT1_3_1_11.cfg	solved by BOA
8	30018017	Jack Aksan	7734573	51.154.16.205	line-myott.net	10.101.128.148 - ZH_9207_79HOT_OLT1_5_1_19.cfg	changed public IP to 51.154.123.81 - solved
9	30043330	Charles loas	7925792 ; 8058546	51.154.106.49	bankofamerica.com	10.98.209.166 - GE_9200_68ACAC_O_LT1_15_1_12.cfg	closed
10	30048670	Alexandre Levy	7902422	51.154.107.250	bankofamerica.com		closed
11	31005279	Igor Kovalenko	8423672	51.154.145.170	bankofamerica.com		closed
12	31001343	Orlando Tognina	8392115	51.154.143.211	bankofamerica.com		closed
13	30045404	Clément Michel Rivière	8074066	51.154.108.253	bankofamerica.com		closed
14	31006221	Rouven Willimann	8261366	51.154.140.149	bankofamerica.com		closed
15	30013607	Marianne Gurtner Fida	8006261	51.154.135.21	bankofamerica.com		solved

F - 3rd level specific actions

- DHCP lease deletion
- Alarms check on OLT if errors: optical reboot
- MAC address check on OLT if errors: reprovision
- Traffic per VLAN check on OLT if errors: optical reboot or unpower 5 minutes
- All LEDs ok, but no internet -> after usual, check mac on Nokia OLT, if 3 mac address, admin state down, 10 sec, up, if 4 mac, delete DHCP lease, unprov/reprov, optical reboot