IxStream Headend

Quick Guide - Begin working with the IxStream headend

IX-Streamer, rev 1.1

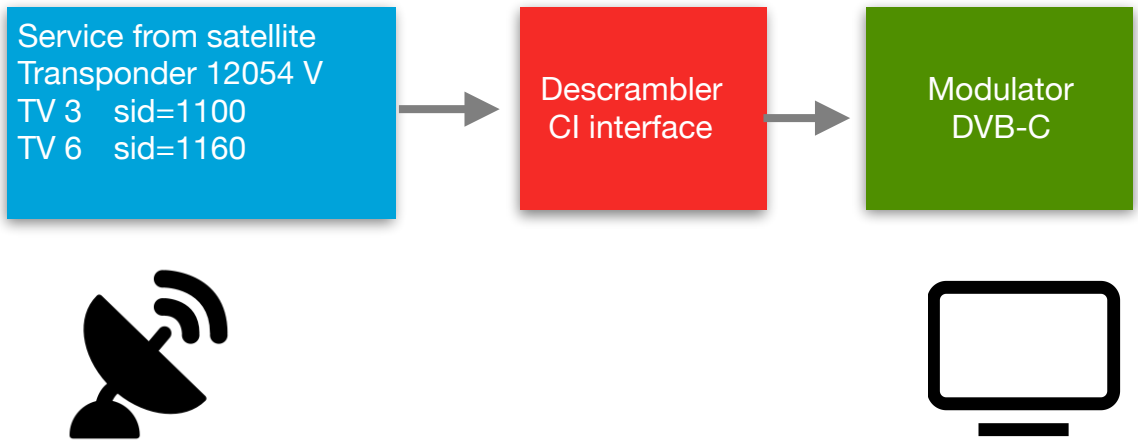
Introduction

This guide describes how to quickly get started with the IxStream headend.

With IxStream you can setup a complete headend to broadcast TV services through an IP/Cable network. The IxStream headend receives TV services from DVB-S or DVB-T etc. and transmits those to connected tv's or set-top boxes.

Example setup

The example setup used throughout this guide document consists of two TV services received from satellite, they are descrambled using a CA module and then transmitted out over coax as DVB-C.

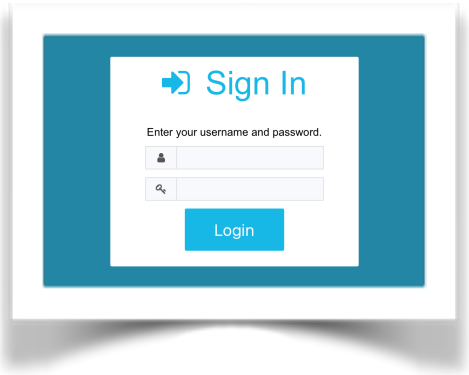


Access the headend

To access the web-interface, connect your computer to the LAN port on the headend with an Ethernet cable:

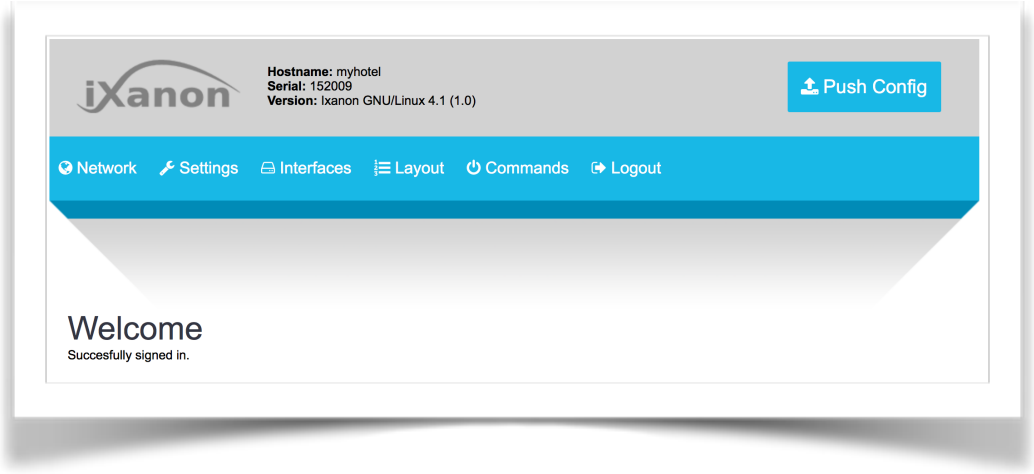
Default IP settings:

eth0 http://192.168.0.99:8080/ixui
eth1 http://172.16.0.1:8080/ixui



Default login settings:

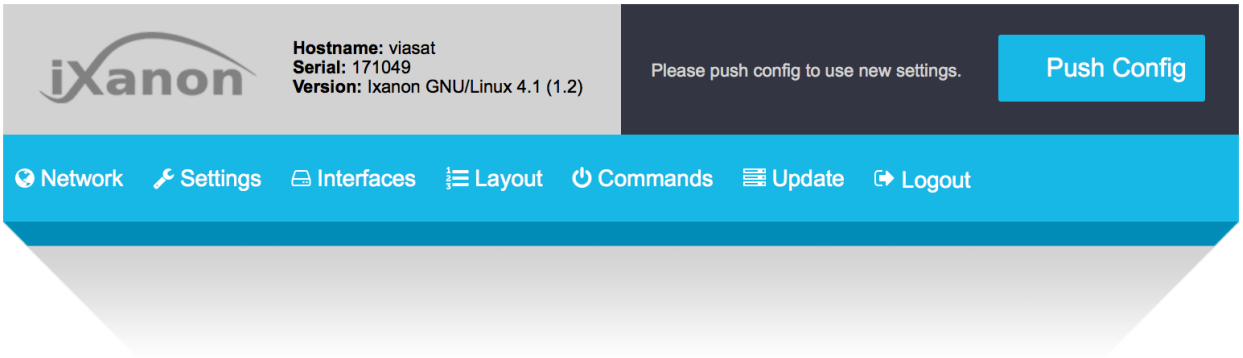
Username admin
Password password



Important Concepts

Push Config

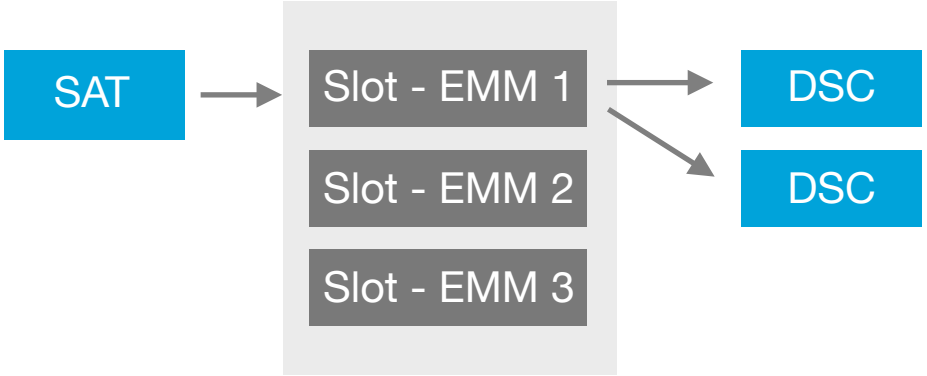
Whenever the configuration has been changed (for example add a service or change frequency) it has to be “pushed” to the system in order to take effect. The “Push Config” button is located in the top right corner of the web interface.



EMM

The descrambler modules needs a emm feed in order to work. The IxStream headend defines three so called emm slots (emm-1, emm-2, emm-3). These are used to distribute emm feeds inside the system.

- The satellite receiver interface acting as emm source is configured to output it’s emm on one of the three emm slots.
  In a typical setup one of the sat interfaces is selected to be the emm source and set to output its emm feed on emm slot 1.
- Each descrambler interface is configured which of the emm slots to listen on.
  In a typical setup all descrambler modules are set to listen on emm slot 1.



Routing

In order for the system to know how the TV signals shall be routed between the interfaces it needs routing configuration. What is important to know is that all signals are handled independently of each other. This means it is allowed to connect services from multiple sat interfaces to the same descrambler or modulator interface. The Routing/Layout process is described more in section Step 4 - Layout.

- TV services are received by the receiver cards in the chassi (DVB-S/S2, DVB-T/T2).
- TV services are descrambled using separate CI descrambler cards in the chassi.
- TV services are transmitted on a DVB-C output mux. A modulator card in the chassi holds 8, 16 or 24 muxes.

Step 1
IP Network Configuration

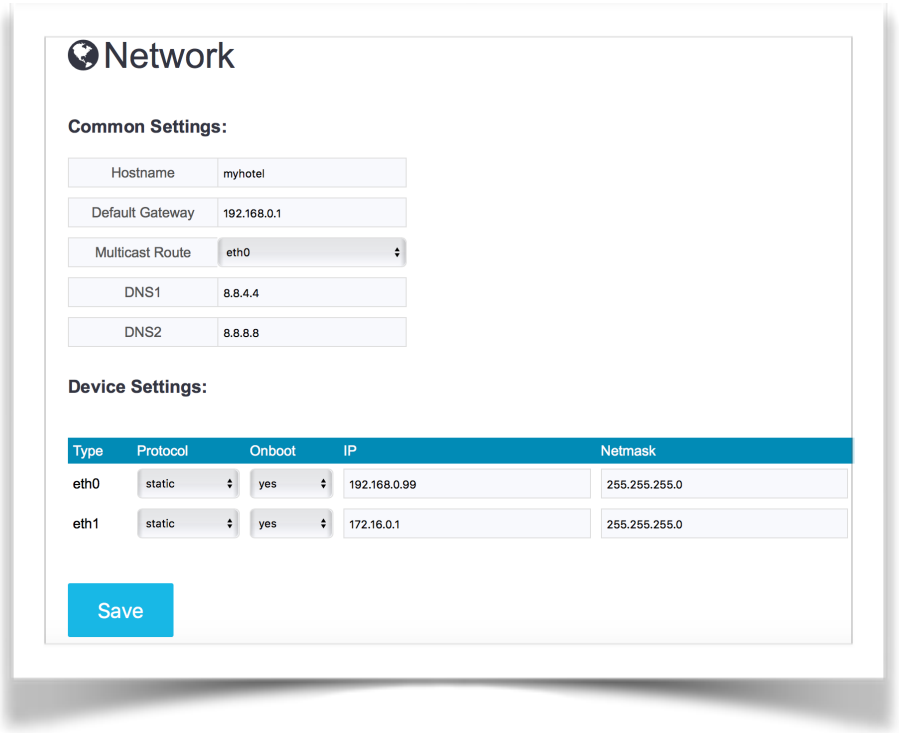
In this section the IP network parameters for the headend is set so it can be connected to the LAN.

#1 Select “Network” from the main menu.

#2 Enter the parameters for your network and then press the Save button.

The parameters used in this example is shown on the pictures below.
In the example below the server will be accessible on eth0 at address 192.168.0.99.

Note! For the changes to take effect the server must be rebooted. The reboot button is located under the “Commands” menu.



Step 2
Transmission Parameter Settings

In this section the network transmission parameters are set.

#1 Select “Settings” from the main menu.

#2 Enable DVB-C and/or IPTV output and set the parameters for your network and then press the Save button.

The parameters used in this example is shown on the pictures below.

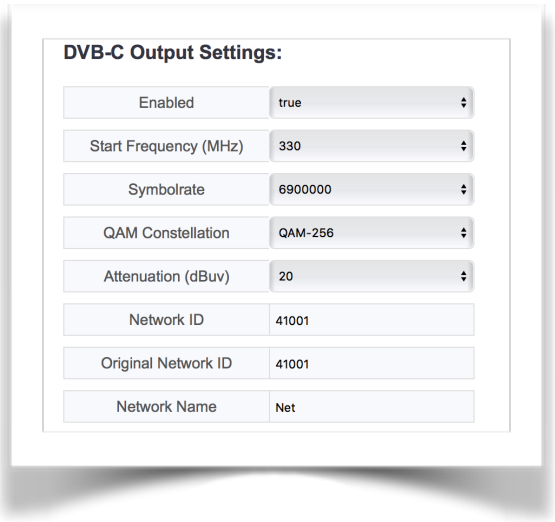
NOTE! For the changes to take effect the configuration needs to be pushed.

DVB-C Output Settings

This section holds the transmission parameters for DVB-C.

IP Output Settings

This section holds the transmission parameters for IPTV.



Descrambler Settings (used for layout usage calculation)

Max Services: Maximum number of services the CA module can handle.
Max Bitrate: Maximum bitrate the CA module can handle.

Bitrate Settings (used for layout usage calculation)

TV_SD: The bitrate for a normal SD service.
TV_HD: The bitrate for a normal HD service.
RADIO: The bitrate for a normal Radio service.

Step 3
Satellite Input Configuration

In this section the satellite input interface is setup to receive the required TV services.

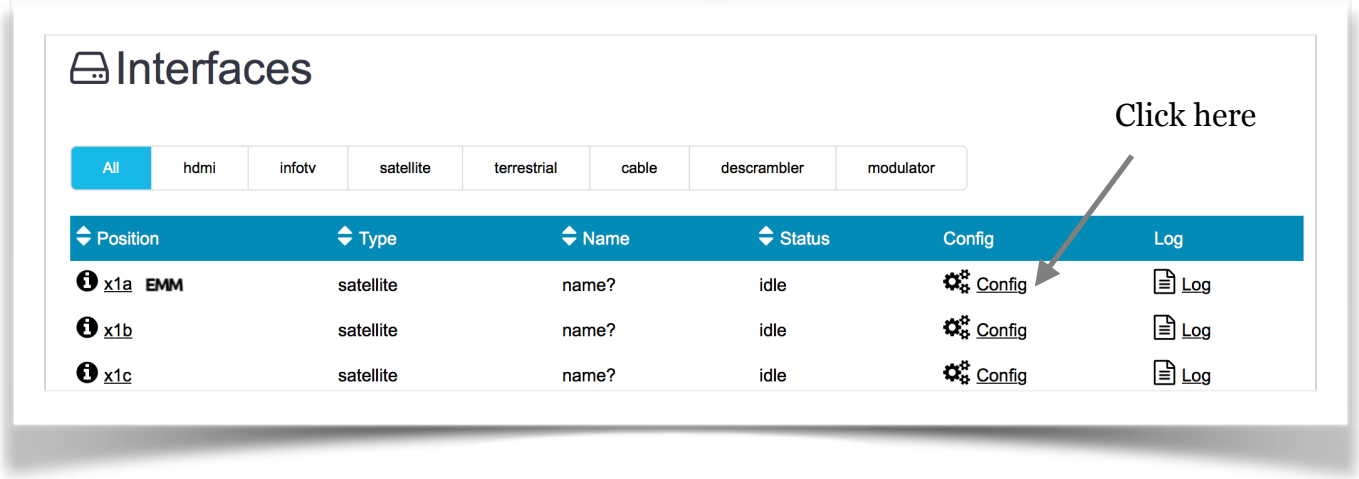
#1 Select “Interfaces” from the main menu.

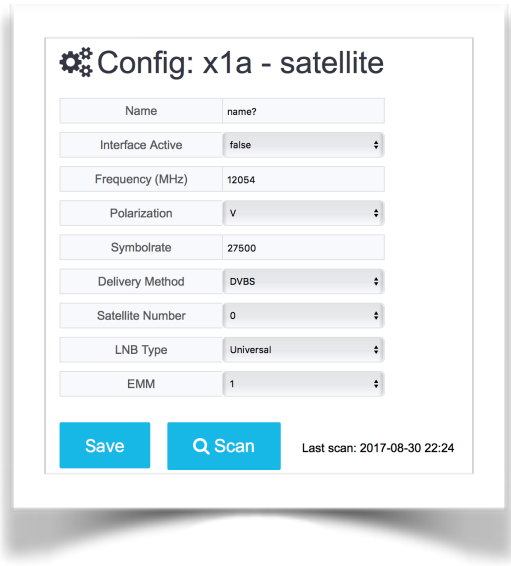
#2 Click on the “Config” link on the first free satellite interface (x2a in this example).

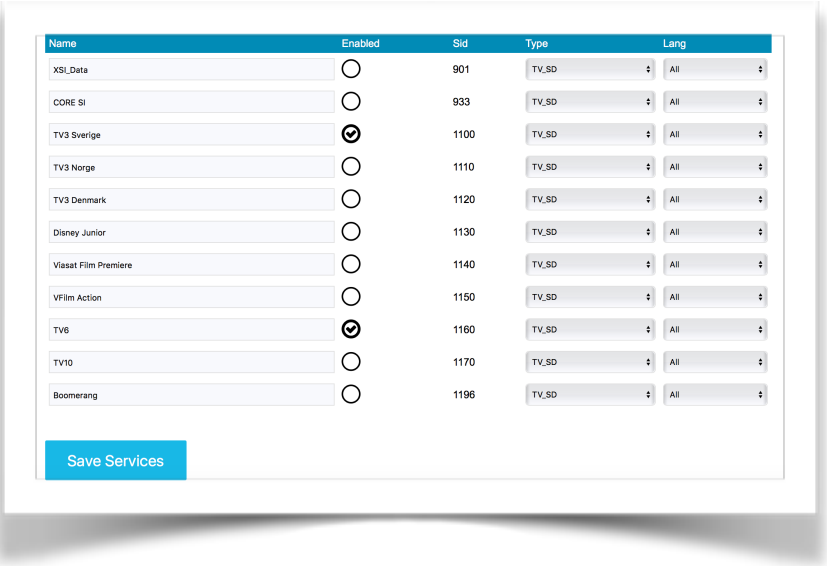
#3 Enter the tuner parameters for the transponder (see pictures below).

#4 Click the Scan button. The list of available services is displayed.

#5 Select the services to receive (tv 3 and tv 6 in this case) and then click on the “Save Services” button.
Note! In the Lang column a specific language can be selected for the service.







Step 4
Layout

This section describes how the TV services are routed/connected. Each service needs to be configured with a LCN number, the CI interface used for descrambling and the output modulator/mux it is transmitted on.

The bottom part of the page shows calculated usage for the descrambler and modulator resources.

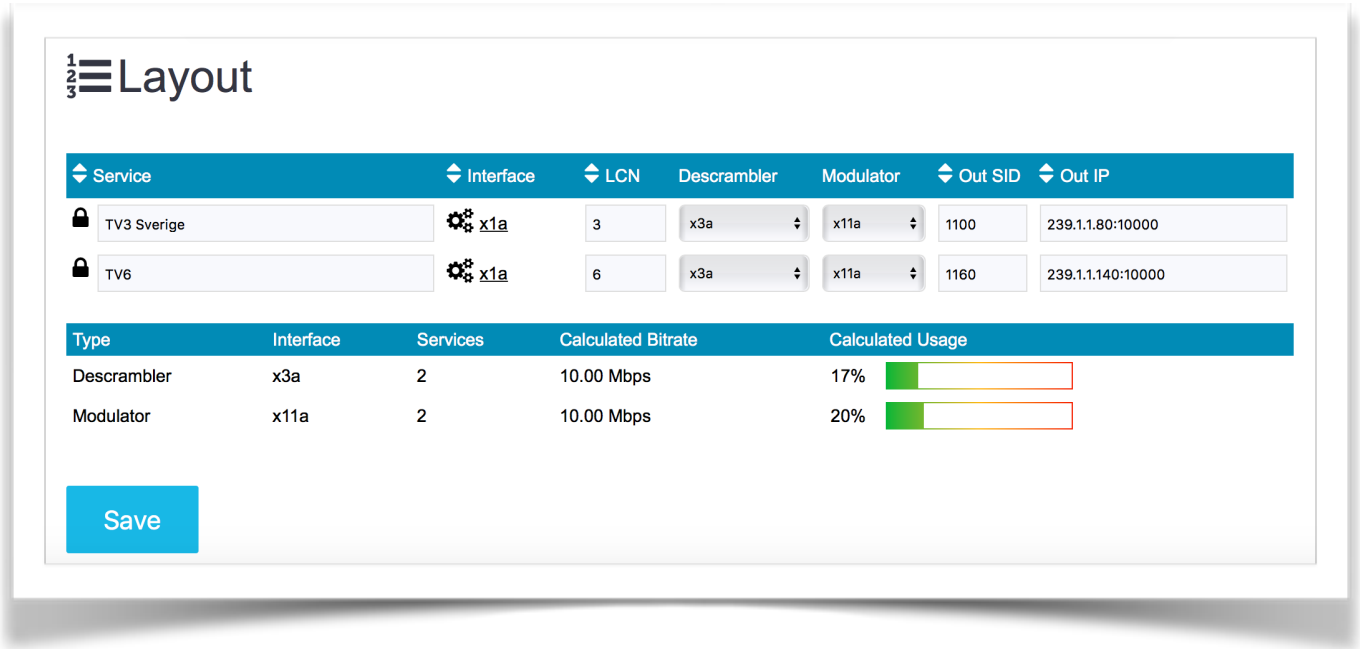
#1 Select “Layout” from the main menu.

#2 Set the LCN, Descrambler and Modulator/Mux for each of the services. The name of the service can also be changed.

#3 Press the Save button.

The parameters used in this example is shown on the pictures below.

NOTE! For the changes to take effect the configuration needs to be pushed.



Status and Control

Satellite interface

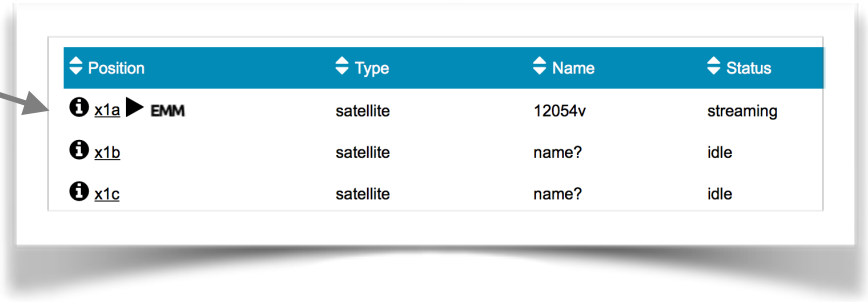
Each interface has a detailed view with status and control information.

To view detailed status on sat interface x1a:

#1 Select “Interfaces” from the main menu.

#2 Click on the “x1a” text next to the “Info” icon on the x1a satellite interface.

Click here

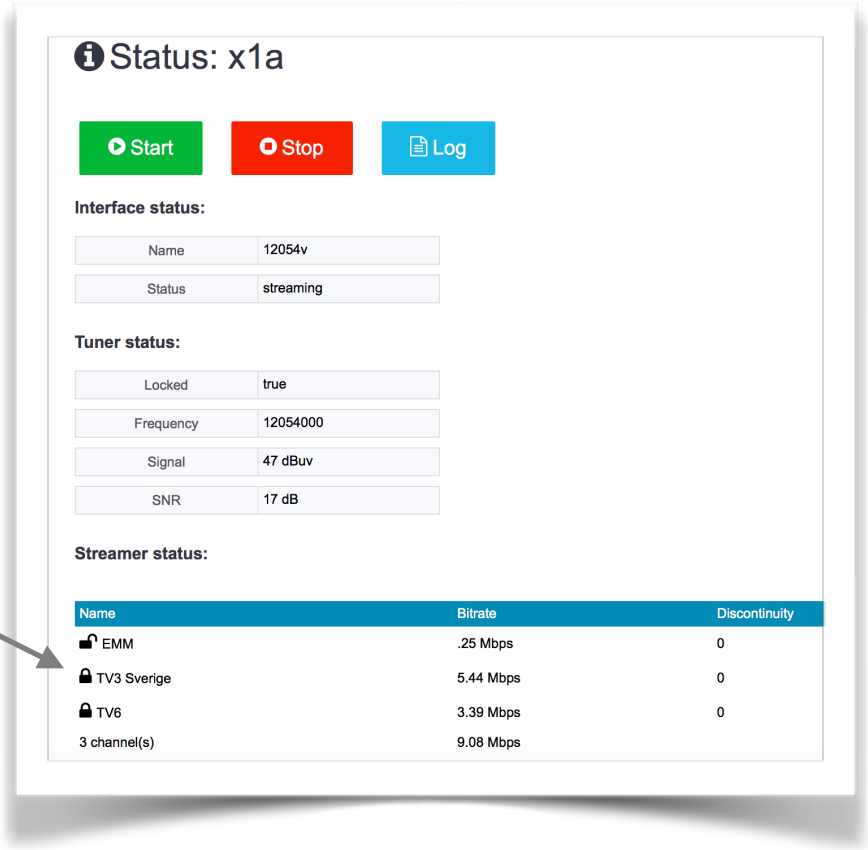


Start, Stop: Buttons to manually start/stop the interface.

Log: View detailed log’s

Padlock indicates whether the service is scrambled or clear.

Discontinuity: Number of missed TS packets (sequence number)



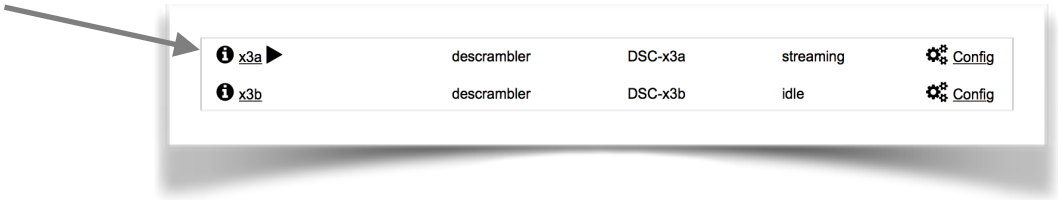
Descrambler interface

To view detailed status on descrambler interface x3a:

#1 Select “Interfaces” from the main menu.

#2 Click on the “x3a” text next to the “Info” icon on the x3a descrambler interface.

Click here



Ci status:
CAM: CA module detected
CA-PMT: Communication with the CA module is working
CI Text: Type of CA module
CI Message: Message from the CA module

Receiving EMM: true if the emm feed is received.

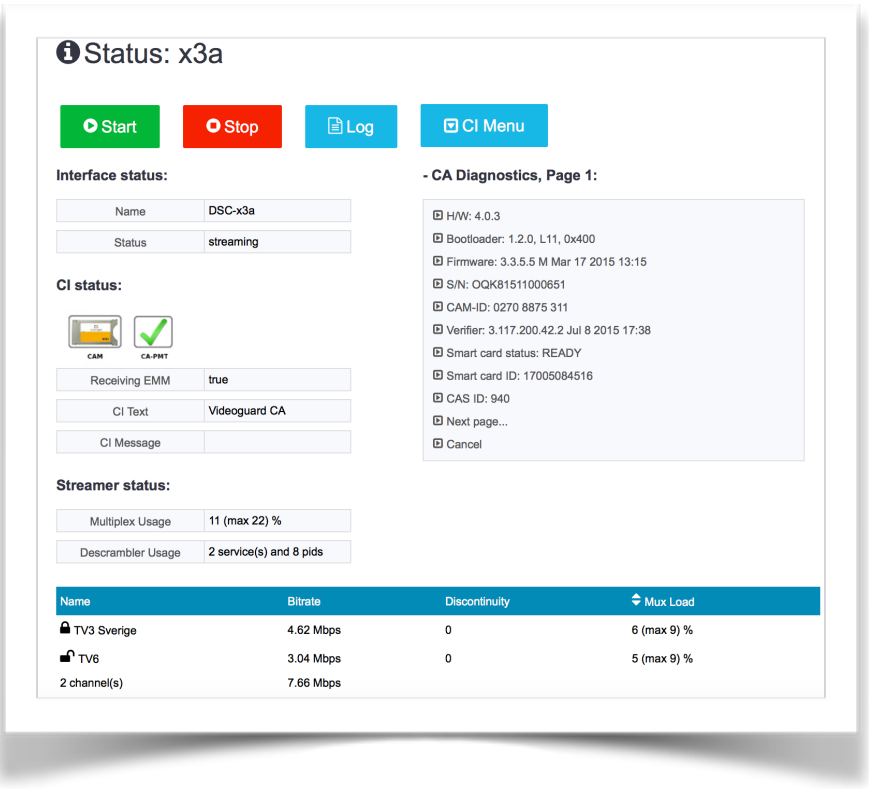
Multiplex Usage: Percentage of the usage. Current and max.

Descrambler Usage: Number of sid’s and pid’s

Padlock indicates whether the service is scrambled or clear.

Discontinuity: Number of missed TS packets (sequence number)

The CI Menu button opens up the menu to the CA module.



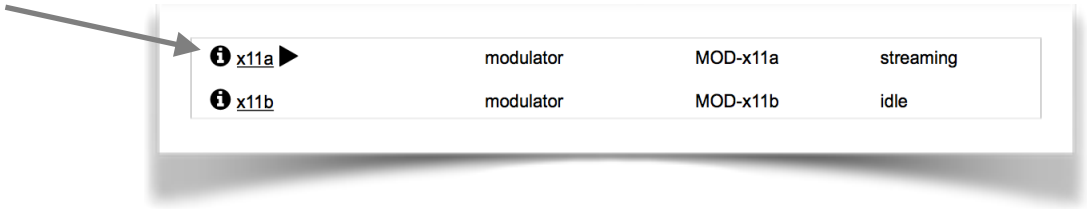
Modulator interface

To view detailed status on modulator interface x11a:

#1 Select “Interfaces” from the main menu.

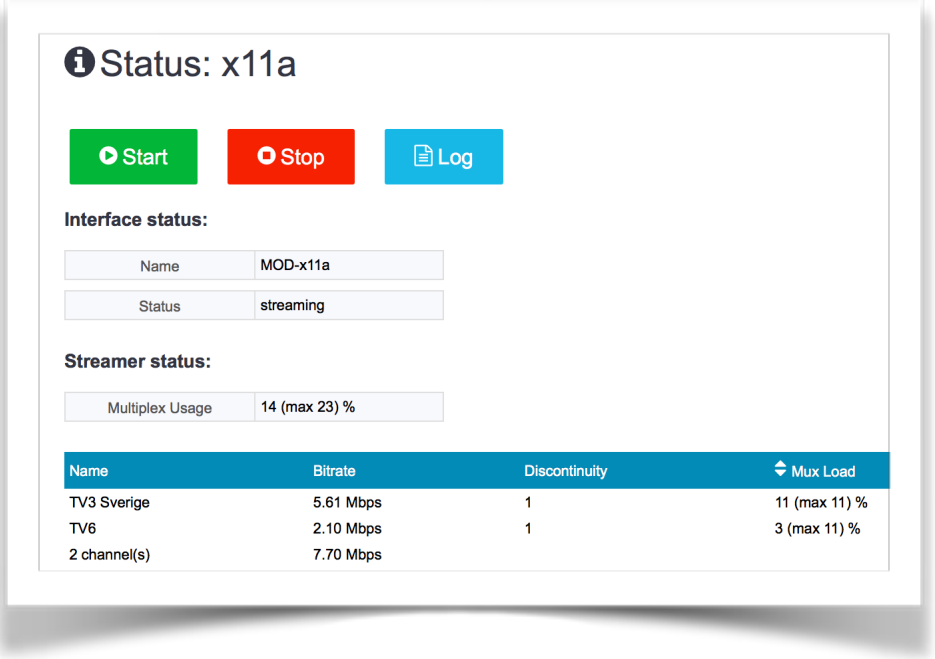
#2 Click on the “x11a” text next to the “Info” icon on the x11a descrambler interface.

Click here



Multiplex Usage: Percentage of the usage. Current and max.

Discontinuity: Number of missed TS packets (sequence number)



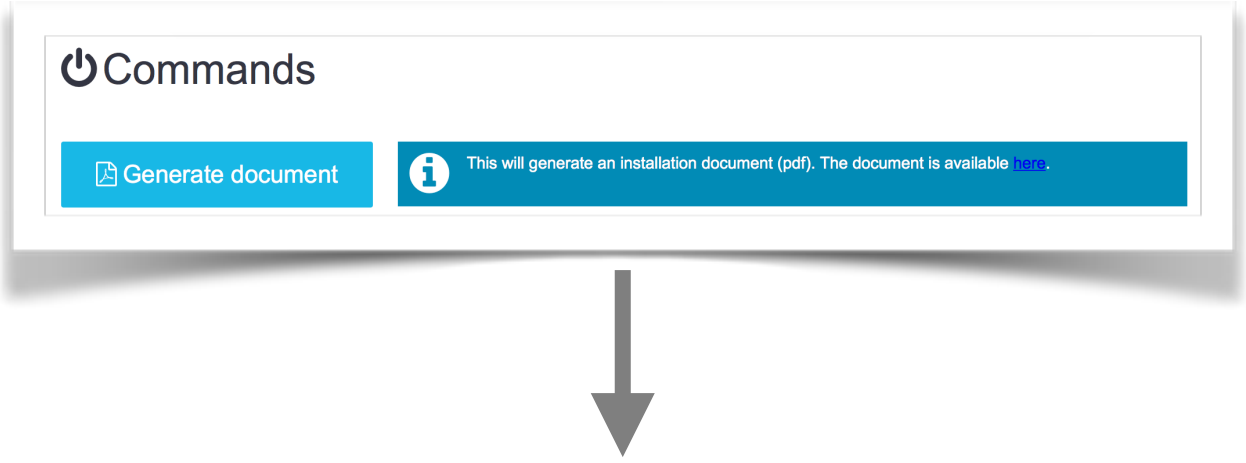
Installation Documentation

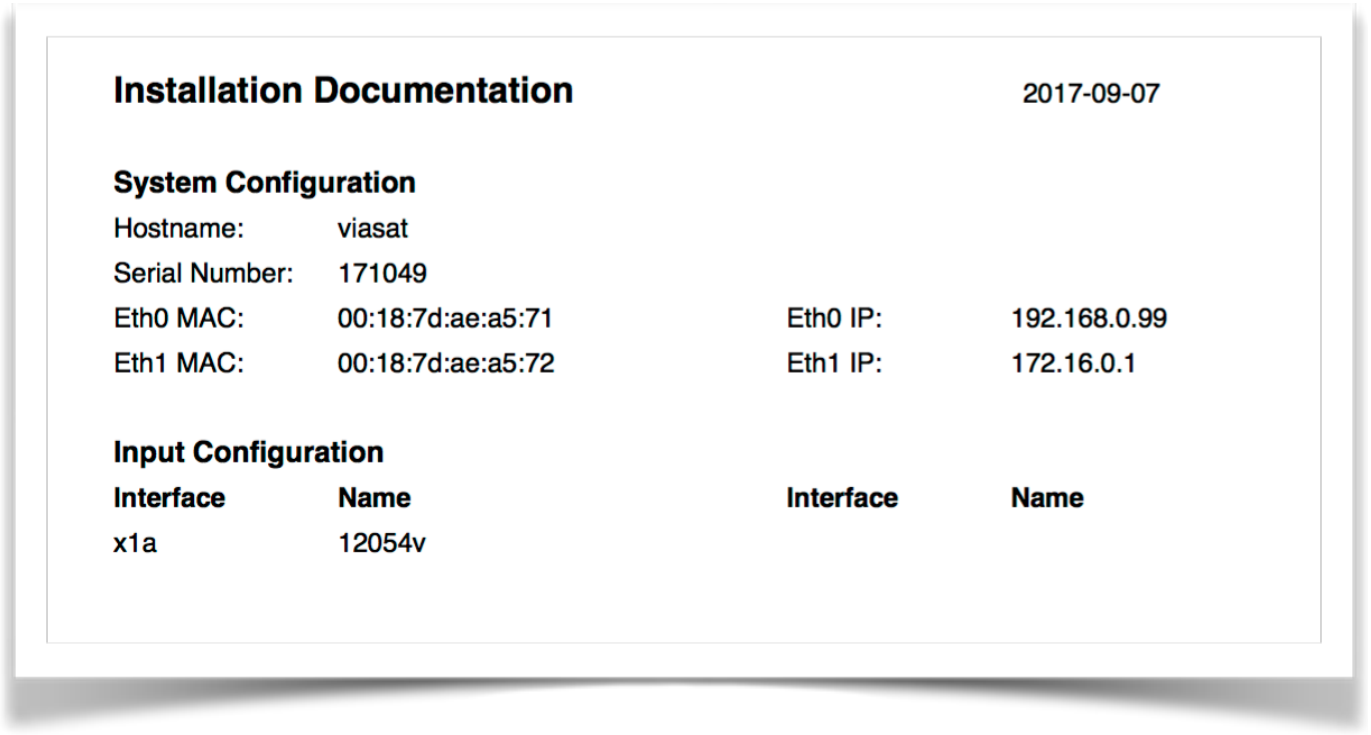
When the installation/configuration is ready a pdf document can be generated. The document contains information about the configuration and will serve as an installation document.

#1 Select “Commands” from the main menu.

#2 Click on the “Generate Document” button.

#3 Click on the link to the right of the button (The document is available here)





Installation Documentation 2017-09-07

System Configuration

Hostname:	viasat		
Serial Number:	171049		
Eth0 MAC:	00:18:7d:ae:a5:71	Eth0 IP:	192.168.0.99
Eth1 MAC:	00:18:7d:ae:a5:72	Eth1 IP:	172.16.0.1

Input Configuration

Interface	Name	Interface	Name
x1a	12054v		

Software Update

The head-end software is divided into packages and each package can be updated to a newer version using the software update function.

#1 Select “Updates” from the main menu.

#2 Click on the “OK” button to search for updates.

#3 Select the software packages (if any) to update then click the Update button to do the update.