UniSoft

XCaster Data Casting

Using ATSC 1.0

Broadcast

UniSoft Corporation

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1.   Overview

UniSoft offers the XCaster data casting system which can deliver content either via ATSC 1.0 or 3.0. Transmission to each standard may occur either simultaneously or individually.

In addition, UniSoft Corporation offers a variety of ATSC 3.0 delivery components, software and integration services.

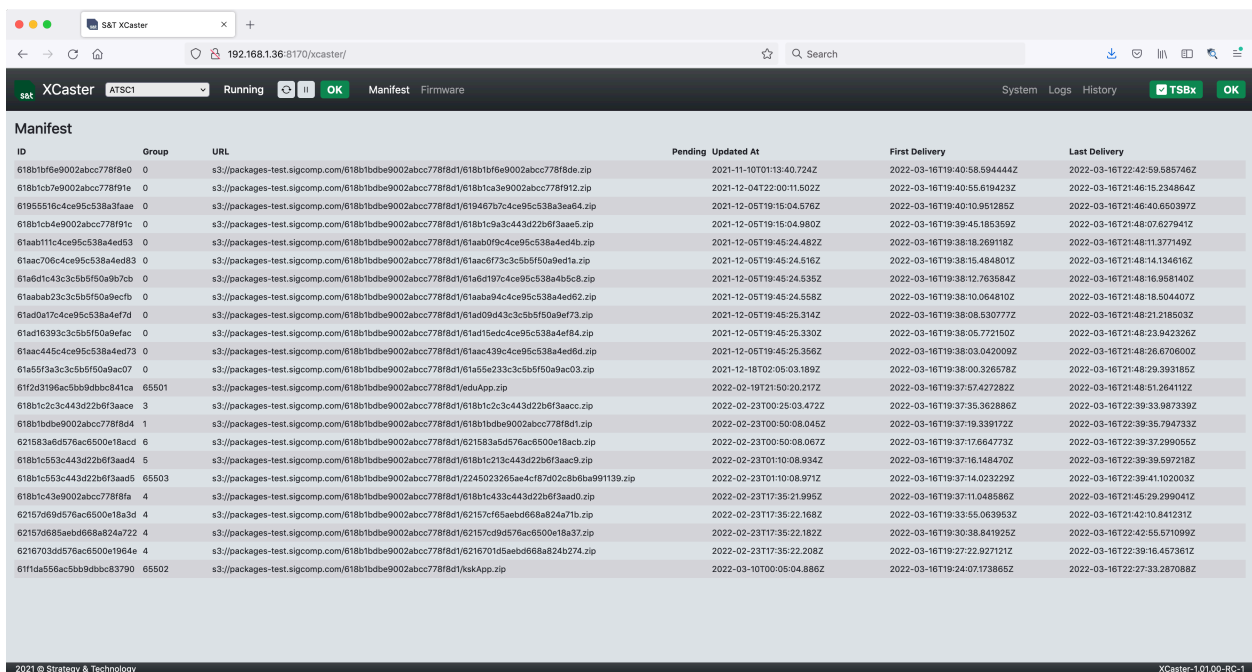## 1.1.   XCaster Configuration Summary

The diagram below shows a typical XCaster configuration, with dual delivery paths:
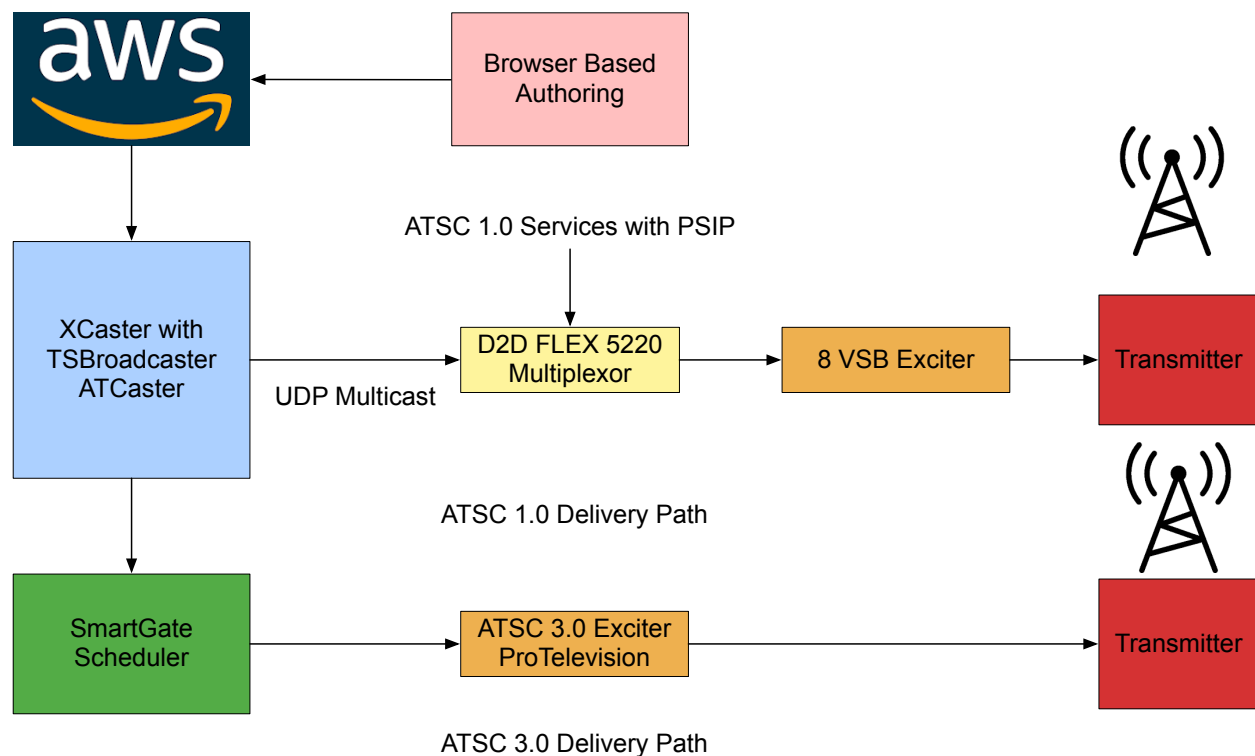
2.   XCaster

XCaster provides a mechanism to deliver data over both ATSC 1.0 and 3.0 broadcast networks. It is bundled with TSBroadcaster, for DSM-CC data carousel delivery and ATCaster which is a full ATSC3.0 ROUTE/MMT signal server.

XCaster is particularly suitable for transmission of educational material for remote learning applications. However XCaster can also be used to transmit firmware upgrades for a variety of devices. XCaster can also deliver standalone web sites to locations which do not have a broadband connection.

Manifest

ID	Group	URL	Pending	Updated At	First Delivery	Last Delivery
618b1bf6e9002abcc778f8e0	0	s3://packages-test.sigcomp.com/618b1bdbe9002abcc778f8d1/618b1bf6e9002abcc778f8de.zip		2021-11-10T01:13:40.724Z	2022-03-16T19:40:58.594444Z	2022-03-16T22:42:59.585746Z
618b1cb7e9002abcc778f91e	0	s3://packages-test.sigcomp.com/618b1bdbe9002abcc778f8d1/618b1ca3e9002abcc778f912.zip		2021-12-04T22:00:11.502Z	2022-03-16T19:40:55.619423Z	2022-03-16T21:46:15.234864Z
61955516c4ce95c538a3faae	0	s3://packages-test.sigcomp.com/618b1bdbe9002abcc778f8d1/619467b7c4ce95c538a3ea64.zip		2021-12-05T19:15:04.576Z	2022-03-16T19:40:10.951285Z	2022-03-16T21:46:40.650397Z
618b1cb4e9002abcc778f91c	0	s3://packages-test.sigcomp.com/618b1bdbe9002abcc778f8d1/618b1c9a3c443d22b6f3aae5.zip		2021-12-05T19:15:04.980Z	2022-03-16T19:39:45.185359Z	2022-03-16T21:48:07.627941Z
61aab111c4ce95c538a4ed53	0	s3://packages-test.sigcomp.com/618b1bdbe9002abcc778f8d1/61aab0f9c4ce95c538a4ed4b.zip		2021-12-05T19:45:24.482Z	2022-03-16T19:38:18.269118Z	2022-03-16T21:48:11.377149Z
61aac706c4ce95c538a4ed83	0	s3://packages-test.sigcomp.com/618b1bdbe9002abcc778f8d1/61aac6f73c3c5b5f50a9ed1a.zip		2021-12-05T19:45:24.516Z	2022-03-16T19:38:15.484801Z	2022-03-16T21:48:14.134616Z
61a6d1c43c3c5b5f50a9b7cb	0	s3://packages-test.sigcomp.com/618b1bdbe9002abcc778f8d1/61a6d197c4ce95c538a4b5c8.zip		2021-12-05T19:45:24.535Z	2022-03-16T19:38:12.763584Z	2022-03-16T21:48:16.958140Z
61aabab23c3c5b5f50a9ecfb	0	s3://packages-test.sigcomp.com/618b1bdbe9002abcc778f8d1/61aaba94c4ce95c538a4ed62.zip		2021-12-05T19:45:24.558Z	2022-03-16T19:38:10.064810Z	2022-03-16T21:48:18.504407Z
61ad0a17c4ce95c538a4ef7d	0	s3://packages-test.sigcomp.com/618b1bdbe9002abcc778f8d1/61ad09d43c3c5b5f50a9ef73.zip		2021-12-05T19:45:25.314Z	2022-03-16T19:38:08.530777Z	2022-03-16T21:48:21.218503Z
61ad16393c3c5b5f50a9efac	0	s3://packages-test.sigcomp.com/618b1bdbe9002abcc778f8d1/61ad15edc4ce95c538a4ef84.zip		2021-12-05T19:45:25.330Z	2022-03-16T19:38:05.772150Z	2022-03-16T21:48:23.942326Z
61aac445c4ce95c538a4ed73	0	s3://packages-test.sigcomp.com/618b1bdbe9002abcc778f8d1/61aac439c4ce95c538a4ed6d.zip		2021-12-05T19:45:25.356Z	2022-03-16T19:38:03.042009Z	2022-03-16T21:48:26.670600Z
61a55f3a3c3c5b5f50a9ac07	0	s3://packages-test.sigcomp.com/618b1bdbe9002abcc778f8d1/61a55e233c3c5b5f50a9ac03.zip		2021-12-18T02:05:03.189Z	2022-03-16T19:38:00.326578Z	2022-03-16T21:48:29.393185Z
61f2d3196ac5bb9dbbc841ca	65501	s3://packages-test.sigcomp.com/618b1bdbe9002abcc778f8d1/eduApp.zip		2022-02-19T21:50:20.217Z	2022-03-16T19:37:57.427282Z	2022-03-16T21:48:51.264112Z
618b1c2c3c443d22b6f3aace	3	s3://packages-test.sigcomp.com/618b1bdbe9002abcc778f8d1/618b1c2c3c443d22b6f3aacc.zip		2022-02-23T00:25:03.472Z	2022-03-16T19:37:35.362886Z	2022-03-16T22:39:33.987339Z
618b1bdbe9002abcc778f8d4	1	s3://packages-test.sigcomp.com/618b1bdbe9002abcc778f8d1/618b1bdbe9002abcc778f8d1.zip		2022-02-23T00:50:08.045Z	2022-03-16T19:37:19.339172Z	2022-03-16T22:39:35.794733Z
621583a6d576ac6500e18acd	6	s3://packages-test.sigcomp.com/618b1bdbe9002abcc778f8d1/621583a5d576ac6500e18acb.zip		2022-02-23T00:50:08.067Z	2022-03-16T19:37:17.664773Z	2022-03-16T22:39:37.299055Z
618b1c553c443d22b6f3aad4	5	s3://packages-test.sigcomp.com/618b1bdbe9002abcc778f8d1/618b1c213c443d22b6f3aac9.zip		2022-02-23T01:10:08.934Z	2022-03-16T19:37:16.148470Z	2022-03-16T22:39:39.597218Z
618b1c553c443d22b6f3aad5	65503	s3://packages-test.sigcomp.com/618b1bdbe9002abcc778f8d1/2245023265ae4cf87d02c8b6ba991139.zip		2022-02-23T01:10:08.971Z	2022-03-16T19:37:14.023229Z	2022-03-16T22:39:41.102003Z
618b1c43e9002abcc778f8fa	4	s3://packages-test.sigcomp.com/618b1bdbe9002abcc778f8d1/618b1c433c443d22b6f3aad0.zip		2022-02-23T17:35:21.995Z	2022-03-16T19:37:11.048586Z	2022-03-16T21:45:29.299041Z
62157d69d576ac6500e18a3d	4	s3://packages-test.sigcomp.com/618b1bdbe9002abcc778f8d1/62157cf65aebd668a824a71b.zip		2022-02-23T17:35:22.168Z	2022-03-16T19:33:55.063953Z	2022-03-16T21:42:10.841231Z
62157d685aebd668a824a722	4	s3://packages-test.sigcomp.com/618b1bdbe9002abcc778f8d1/62157cd9d576ac6500e18a37.zip		2022-02-23T17:35:22.182Z	2022-03-16T19:30:38.841925Z	2022-03-16T22:42:55.571099Z
6216703dd576ac6500e1964e	4	s3://packages-test.sigcomp.com/618b1bdbe9002abcc778f8d1/6216701d5aebd668a824b274.zip		2022-02-23T17:35:22.208Z	2022-03-16T19:27:22.927121Z	2022-03-16T22:39:16.457361Z
61f1da556ac5bb9dbbc83790	65502	s3://packages-test.sigcomp.com/618b1bdbe9002abcc778f8d1/kskApp.zip		2022-03-10T00:05:04.886Z	2022-03-16T19:24:07.173865Z	2022-03-16T22:27:33.287088Z

3.   TSBroadcaster

TSBroadcaster adds data to a MPEG transport stream. It creates a DSM-CC data carousel which will be attached to a service which will be recognized by the two receive types mentioned below. The output of TSBroadcaster will be UDP Multicast.
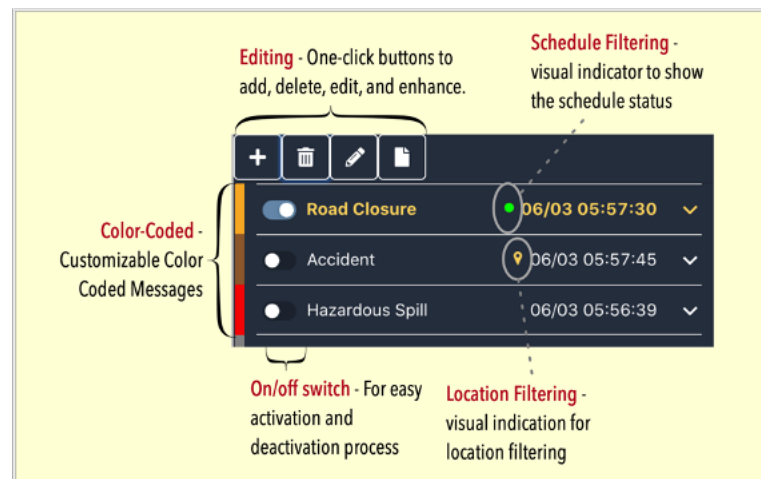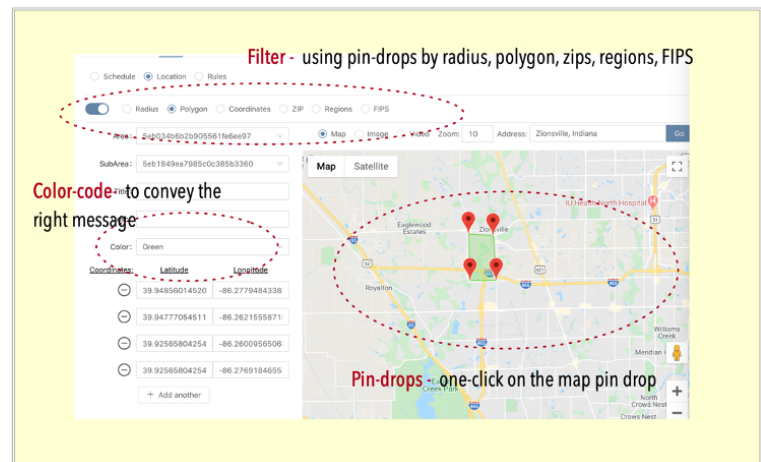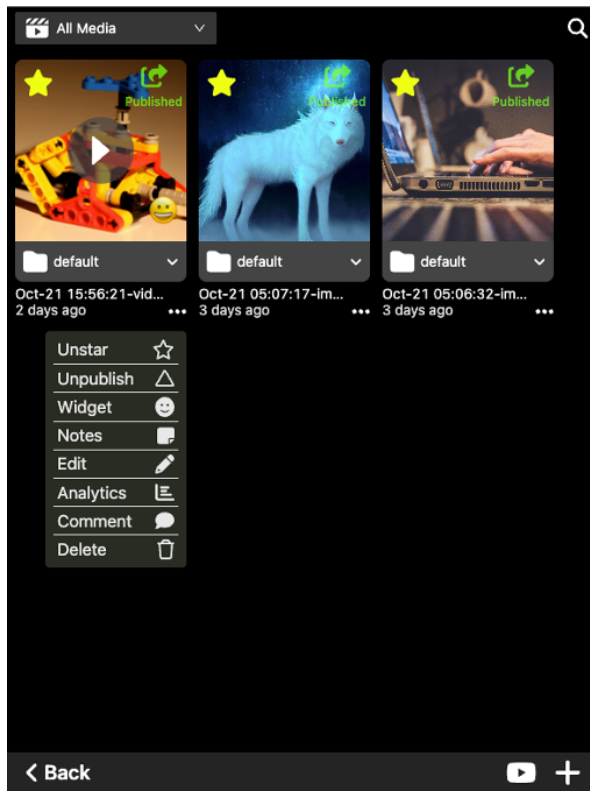
4.   D2D Multiplexor

The D2Flex5K device provides a cost effective method of adding a XCaster data service to your existing ATSC 1.0 services:
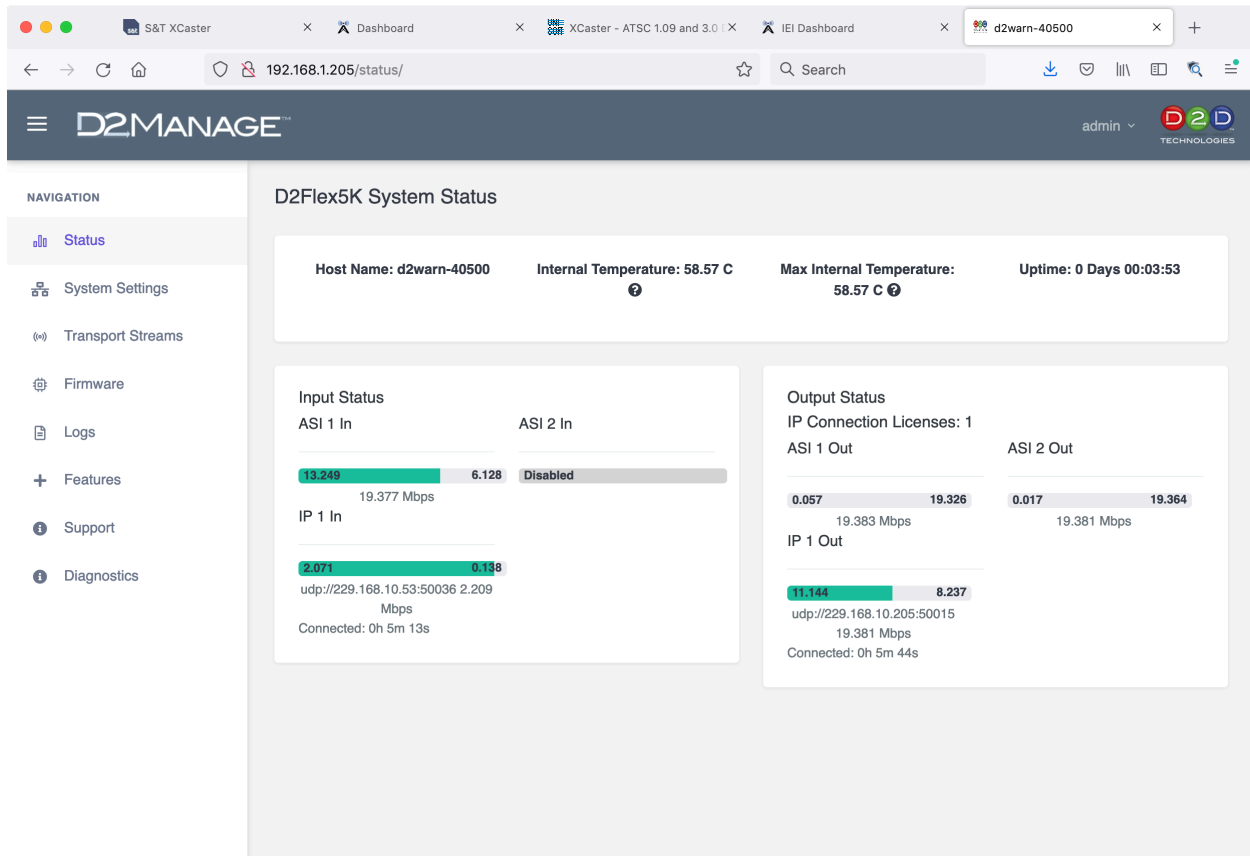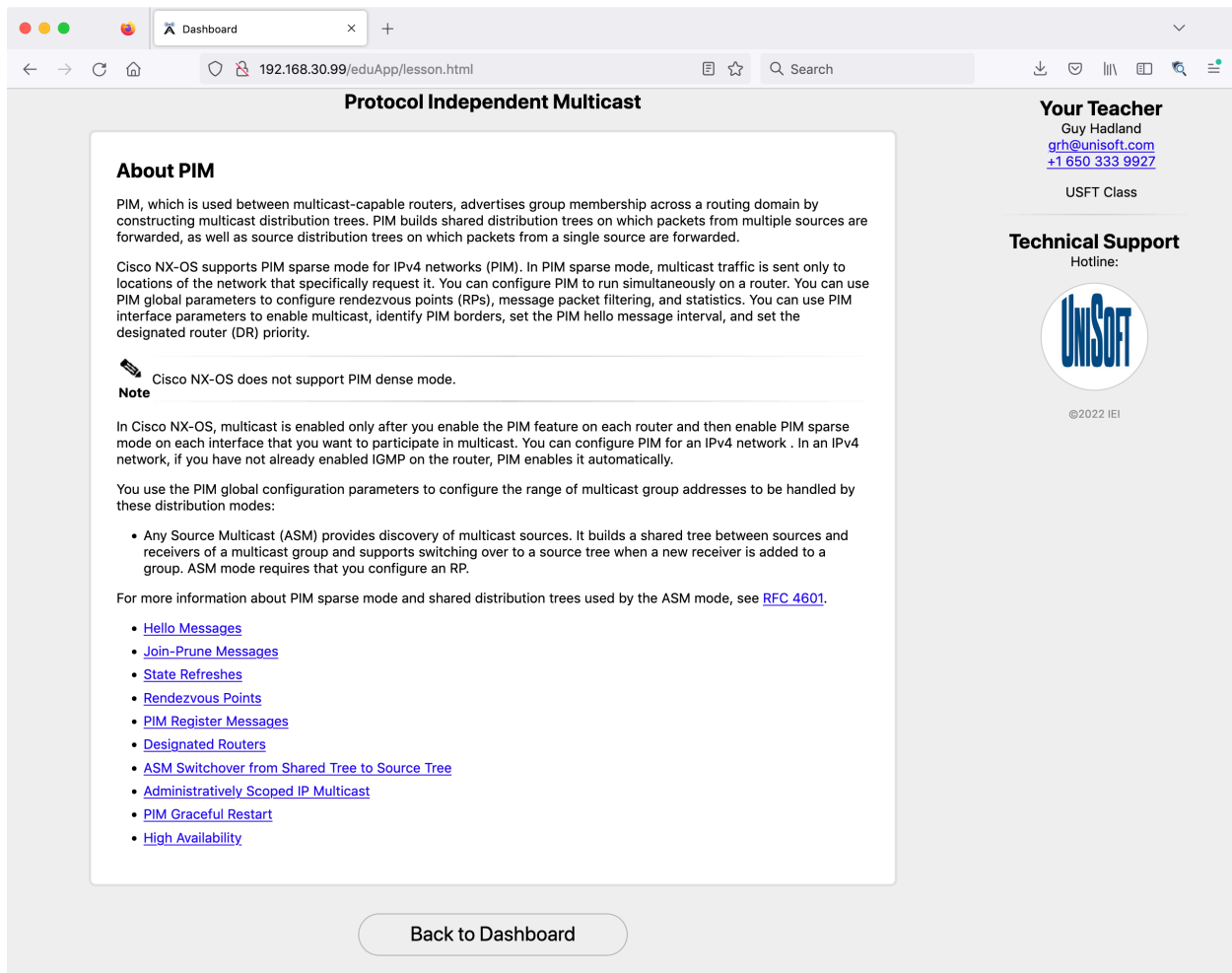
5.   Creating Content

Content is created using a web based authoring environment which pushes the data to AWS.

6.   Viewing Educational Content Delivered OTA

Protocol Independent Multicast

About PIM

PIM, which is used between multicast-capable routers, advertises group membership across a routing domain by constructing multicast distribution trees. PIM builds shared distribution trees on which packets from multiple sources are forwarded, as well as source distribution trees on which packets from a single source are forwarded.

Cisco NX-OS supports PIM sparse mode for IPv4 networks (PIM). In PIM sparse mode, multicast traffic is sent only to locations of the network that specifically request it. You can configure PIM to run simultaneously on a router. You can use PIM global parameters to configure rendezvous points (RPs), message packet filtering, and statistics. You can use PIM interface parameters to enable multicast, identify PIM borders, set the PIM hello message interval, and set the designated router (DR) priority.

✎
Note   Cisco NX-OS does not support PIM dense mode.

In Cisco NX-OS, multicast is enabled only after you enable the PIM feature on each router and then enable PIM sparse mode on each interface that you want to participate in multicast. You can configure PIM for an IPv4 network . In an IPv4 network, if you have not already enabled IGMP on the router, PIM enables it automatically.

You use the PIM global configuration parameters to configure the range of multicast group addresses to be handled by these distribution modes:

- Any Source Multicast (ASM) provides discovery of multicast sources. It builds a shared tree between sources and receivers of a multicast group and supports switching over to a source tree when a new receiver is added to a group. ASM mode requires that you configure an RP.

For more information about PIM sparse mode and shared distribution trees used by the ASM mode, see RFC 4601.

- Hello Messages
- Join-Prune Messages
- State Refreshes
- Rendezvous Points
- PIM Register Messages
- Designated Routers
- ASM Switchover from Shared Tree to Source Tree
- Administratively Scoped IP Multicast
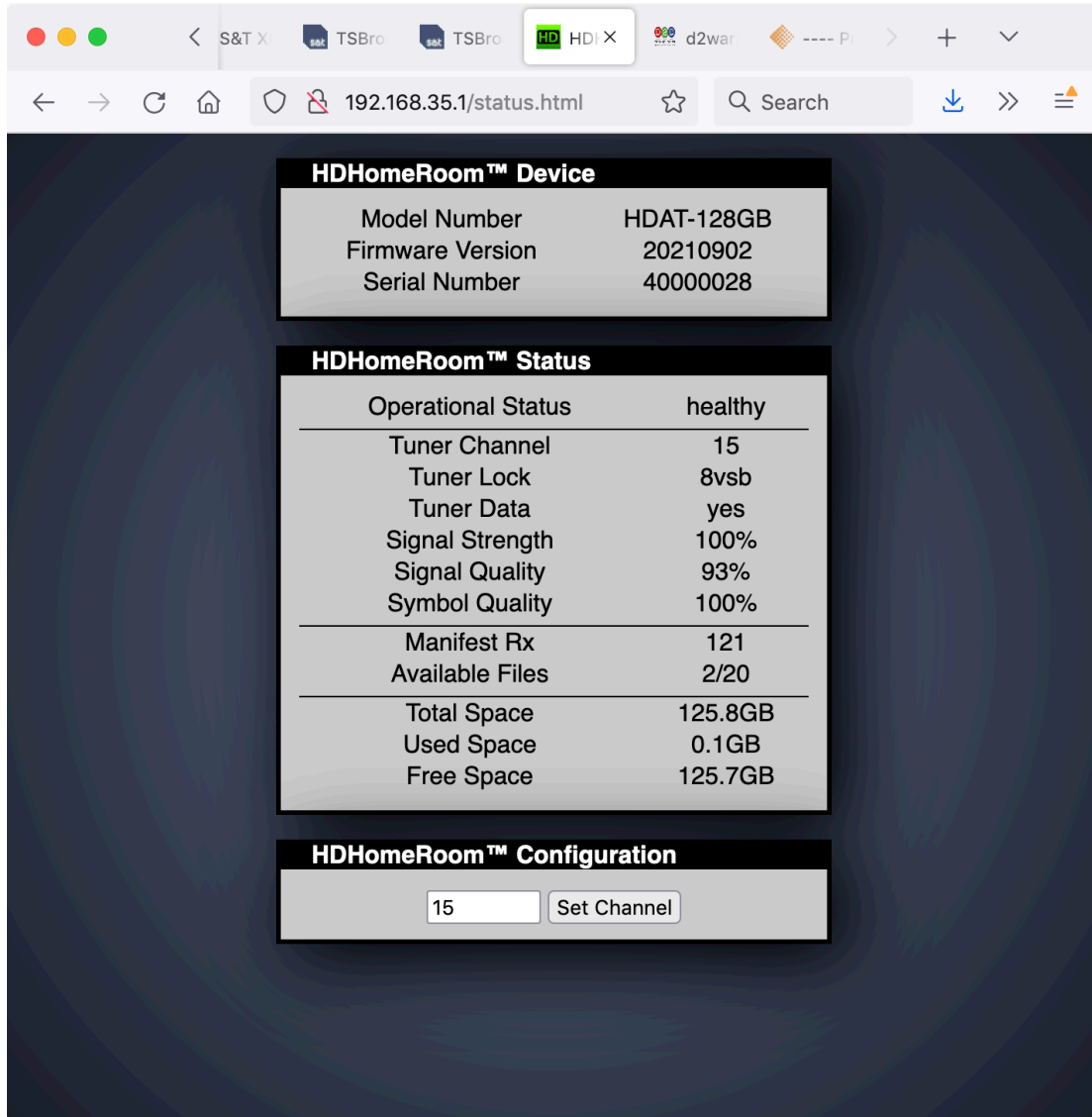- PIM Graceful Restart
- High Availability

Back to Dashboard

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7.   HDHomeRoom Receiver

The HDHomeRoom Receiver from SiliconDust includes a status page which allows users to set the channel for the data service.

8.
9.

10.   UniSoft Classroom Gateway

The Classroom Gateway is more suitable for being shared by multiple students who can connect via WiFi. The configuration includes:

- Intel NUC PC running Ubuntu Linux
  Airwavz Red Zone Receiver
- UniSoft sendmc multicast subsystem
- Omni-directional TV antenna

There is also a status page available for the Classroom Gateway: