Network Considerations

Intevi Digital Television

Intevi Digital Television

The IDT system is a managed IPTV platform that enables a number of sources, including DVB Gateways (DVB T/T2/S/S2/C), QAM / ATSC Gateways, HD Encoders and existing IPTV streams to be delivered to an unlimited number of display devices, including Set Top Boxes, NEC Pi enabled screens and desktops via a desktop player application.
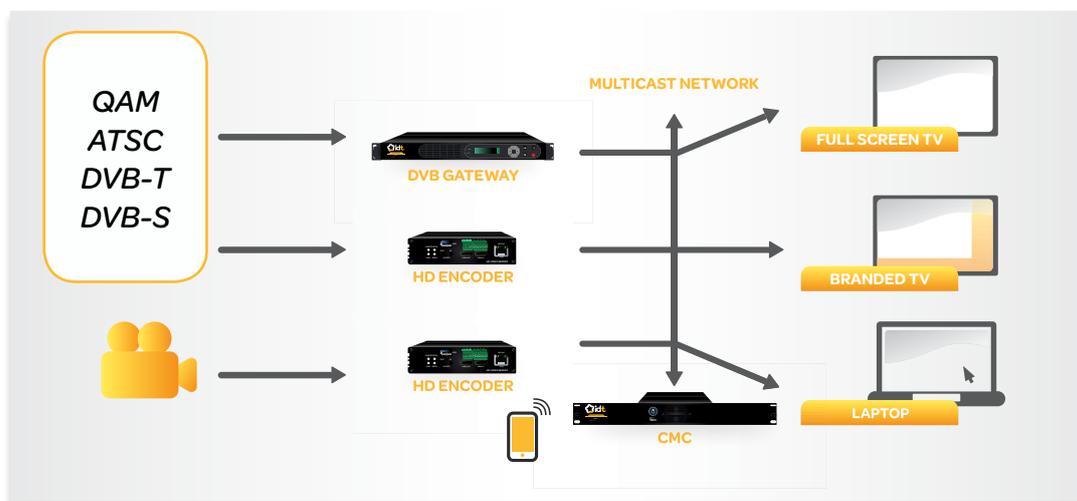
What components do I need?

SOURCE DEVICES

The Intevi engineering team can help you determine what source devices you require depending on the channels that need to be shown. For example DVB TV channels are broadcast as a multiplex, and depending on the bandwidth of the individual channels each multiplex can deliver anywhere between 6 and 20 channels.

An Enterprise DVB gateway can hold up to four DVB cards with each card having four independently controllable tuners, allowing 300+ channels to potentially be delivered via a 1U rack mount device.

The Intevi HD Encoders enable any HD (HDMI or SDI) source to be converted to an IPTV stream. Unmanaged channels can be added to the channel line up providing they are broadcast in a format supported by the playout devices. A list of supported streams tyopes is available from Intevi engineering.

SYSTEM CONTROL

Management and configuration of all the source devices is handled by the rack mounted Central Management Controller, which is a light weight web server and this handles the initial system set up, day to day management and user controls via an intuitive web interface.

The CMC system gathers all of the end points into groups regardless of type and allows individual channel line ups or templates to be applied to these groups.

Depending on payout device templates can also support the integration of data sources such as weather and travel information.

A messaging / alerting system allow custom messages to be be integrated with the video window or override this in the case of a fire alert etc.

Any user action can also be scheduled, and the system supports a full web API to support external third party control.

PLAYOUT DEVICES

The IPTV channels can be viewed on a wide range of playout devices depending on the functionality required.

Two set top boxes are currently supported the R140 and R150, both are capable of playing full HD IPTV channels with messaging and branded layouts. The R150 is required where active widgets are to be played alongside the video content.

The i-view desktop software is currently only supported on Windows and requires VLC to be installed on the host machine. The i-view software provides control over who can see what channel, but does not currently support any messaging or branding.

The latest generation of NEC screens with the embedded Compute 3 module installed can also be used to display IPTV channels complete with messaging and branding without the need for an external set top box.

Multicast explained

Our IPTV system will stream TV channels over your current network using Multicast technology. Multicast creates a "one-to-many" connection between a server and several users / end points.

This is ideal because it only transmits data to the users that are actually requesting it rather than flooding the network with unnecessary data traffic. Ports can be configured manually if required.

- ◆ Multicast address range = 224.0.0.0 - 239.255.255.250

Network configuration

The successful deployment of the IDT solution depends on a properly configured multicast enabled network. Intevi recommend the following considerations, although these will vary by network design.

◆ Fixed IP addresses shoulde be provided for:

   - Central Management Controller
   - DVB Gateways
   - Encoders
   - Set Top Boxes

   All network switch ports should be set to auto negotiate speed and duplex

◆ Ensure no other devices on the switch/network/VLAN are trying to operate on the same multicast addresses

◆ IGMP V2 snooping should be enabled across the network

◆ Only one IGMP querier service should be enabled across the network

◆ IGMP max query response time may need increasing (default is typically 10 seconds)

◆ Fast leave should be turned off

◆ Where Mac address filtering is deployed ensure all of the multicast sources are added to the approved list

◆ Where available PIM sparse mode should be used and multicast groups added to the sparse mode list

Bandwidth used on your network

Broadcasters will alter the bandwidth that they output depending on the type of program and time of day. The Ministreamers will receive that signal and convert it to a Multicast media stream with no transcoding. Therefore the bandwidth of the Multicast stream will fluctuate along side the received broadcast.

◆ Standard Definition (SD) Multicast stream = 1-4Mbps

◆ High Definition (HD) Multicast stream = 6-12Mbps

Port list

Here is a list of ports used by the IDT system.

Service Name	Port Name	Incoming Ports	External to the Internet	Comment
HTTP	80	YES	NO	IDT Server UI
HTTP	8085	YES	NO	Idt Gateway Control
HTTP	8450-8481	YES	NO	IDT Tuner Control
UDP	65001	YES	NO	HDHomeRun Auto Discovery
UDP	22222	YES	NO	Amino Control
UDP	8088	YES	NO	NEC Soc CM3 Control
UDP	1234-12245	YES	NO	Live TV Multicast Default 5500 (Port configurable on setup)
SSL	22	YES	NO	IDT Gateway Support Access
HTTPS/SSL	443	YES	YES	Remote monitoring and support
HTTP/HTTPS		YES	YES	Internet Access for Data Feeds (Widgets)

INTEVI
INTELLIGENT VIDEO SOLUTIONS

Get In Touch

Online:
www.intevi.co.uk
www.idx.uk.com

By Phone:
0203 005 3755

Address:
Unit 5, Meridian Office Park, Hook, Hampshire, RG27 9HY, UK
1250 Broadway, 36th Floor, New York, NY, 10001, USA