

LG Pro:Centric® Catena®

A MANAGEMENT SOLUTION FOR PUBLIC SPACE TELEVISIONS

Helps Businesses Manage and Control Multiple Televisions Efficiently

LG's Pro:Centric® Catena system is designed for businesses, such as bars, restaurants, and gyms, to help staff manage and control multiple televisions efficiently. Comprised of a server and TV application, the system utilizes a simple web-based user interface to control all of the televisions and provide TV channel listings. TV's can be grouped based on location and managed as a group or individually. Pro:Centric Catena operates on LG's Pro:Centric Smart IPTV commercial displays and supports HD and 4K UHD resolutions.

Supports Cable, Satellite and Other Channel Content Sources And Provides Pro: Idiom® Content Protection

Pro:Idiom unlocks access to premium content and has been designed specifically for users of premium HDTV content from cable, satellite, or video on demand (VOD) services. It also incorporates a leading DRM system that provides end-to-end content protection. With LG's Pro:Centric Catena solution, there's no need to tune each TV or multiple set-top boxes manually.

LG's Pro:Centric Catena Can Reduce System Complexity and Deliver Cost Savings

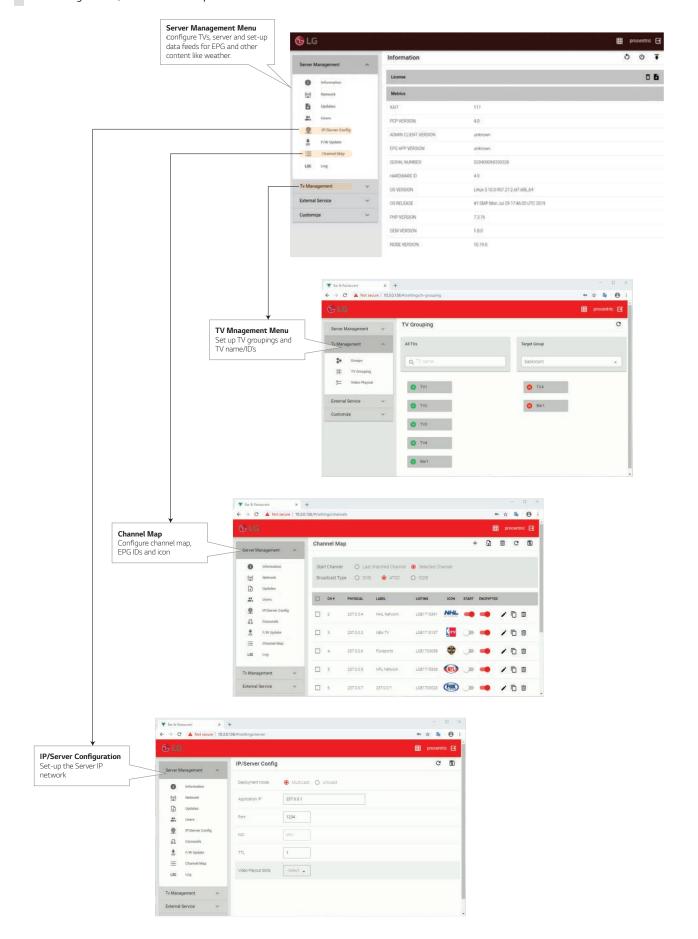
LG's Pro:Centric Catena system can reduce deployment costs through IP networking, utilizing Ethernet Cat 6 wiring distribution to every TV, and by reducing the need for multiple set-top boxes or satellite receivers. No video matrix switches or HDMI splitters are needed, simplifying the entire installation.

Integrated Mobile Audio Streaming Provides Personalized Listening Options

LG's Pro:Centric Catena system allows patrons to select and receive television audio on their mobile device using a simple web-based user interface, *no app is needed*. Using real-time streaming audio, they have the ability to listen to any muted TV channel directly to their personal device via a Wi-Fi access point. The access point redirects to the audio streaming page or URL which can be located on the facilities website. Catena identifies the live video stream which manages timing and syncing of the sound with a user's mobile device. As an added benefit, Cantena uses on-site audio processing which reduces facility external bandwidth usage and provides precise audio lip-sync.

The Administrative Client

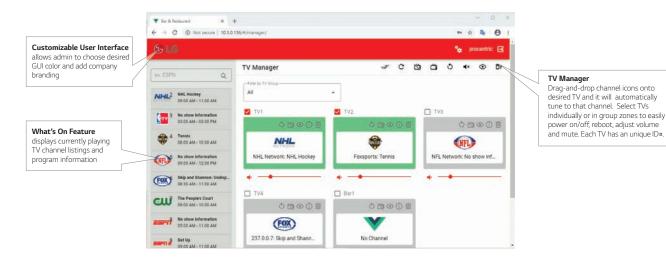
The Administrative Client is securely accessed through VPN either on-site or remotely. Through this secure connection it is easy to configure TVs, server and set-up data feeds for EPG and other content like weather.





Simple-to-Use Staff Interface

Simple-to-use web page UI for TV control and channel listings
Works on most web browser devices using Wi-Fi connection
TV's can be grouped based on location and controlled as a group or individually
UI branding – basic skin can be recolored and company logo added



URL Access

Channel

Guest clicks on the URL and audio is Synched to selected TV

Mobile End User Web Page Interface

Web page user interface works on Android® and iOS® web browsers provides easy access to the TVs channel audio



What's On

Displays programs currently running on TV's, simply select desired channel and audio for that channel is automatically tuned.

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System Architecture Requirements Commercial Satellite/Cable IP Channel Feed STAFF TABLET TV CONTROL GUESTS MOBILE AUDIO STREAMING IP Network with Wi-Fi Access Point Catena - PC with PCle Card Option For Audio Synch Internet Connection Staff Devices (tablet/mobile/desktop) LG Pro:Centric Smart TVs (0 0000) Equipment Closet (Head End) • EPG Data Service • Remote VPN Server Pro:Centric PC (PCP) Audio Cast ك مممم Cable or Satellite Transcoder System IP Switch IP Switch Multicast Stream for Audio Separation/Synch Group 2 (Upstairs) Video Multicast CAT6 to TVs <u>...</u> MPEG-2/4 Transport Stream IP: MPEG-4 Multicast Transport Stream Satellite/Cable Channel Delivery