TOTALCHANNEL

High Performance
Digital Signage
A Product Guide and Company Overview

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ABOUT TOTALCHANNEL

High Performance Digital Signage

What is High Performance Digital Signage? High Performance Digital Signage is signage that does everything you think it should do right now and in the in the future, and does it every time you need it. High performance is over any network, on any device, controlled from anywhere, with unlimited users, departments, interactive development tools, touch screen, on screen video-on-demand from mobile, unlimited schedules, playlists, day parts, and layouts. High performance is playback of any media file type, interface to data feeds, and a built in content library with over 60 content apps.   High Performance is a complete end to end problem-solving line up of products and display solutions that allows for the easy integration of great software into a variety of environments, from 4K players to video wall players, from room signs to menu boards, and has right-sized hardware solutions for every application. High Performance is content management that is not just easy to use because it is has a cool interface, but more importantly its easy to use because it actually has every content management tool already built in today. High performance is a system that works just as well behind a firewall as it does over the public internet and just as well with Windows as it does with Linux. High Performance checks every capability box, every display application box and provides the most flexibility in configuration possible. High Performance is easy to understand, easy to configure, and easy to use and own. High Performance is buying, selling and owning the system instead of simply renting it through recurring fees and charges.

TotalChannel was founded in 2013. Our goal was to design a complete product line that not only offered solutions that were easy to use, they also had to be easy to manage without all the costly yearly license renewal fees or service and support contracts that many of the other brands require. This meant the systems had to be easy to configure and come packed full of cutting edge features.
TotalChannel's two founders have more than 50 years of combined experience in broadcast equipment sales and integration, Pro/AV systems integration and nearly 15 years of combined experience in Digital Signage. Including the installation of tens of thousands of digital signage points, working with a variety of products along the way and managing the installation of one of the largest signage networks in North America.   This experience was invaluable in being able to bring to market a product line that applies to real world market needs and real world digital signage challenges.

We think of TotalChannel as a no-nonsense, '*where the rubber meets the* road' kind of company. We simply invest heavily in great products, sold through only the best integrators, and we invest almost nothing in 'flash'. There are no poodles jumping through hoops of fire, no giant trade show booths and no artists on staff to try and fool anyone that our products are better than they really are.   The product is good all by itself. TotalChannel is not a software company or a hardware company, but rather a solutions company with a great lineup of hardware and software solutions built exclusively for digital signage applications.

TotalChannel deliberately stayed away from the confusing "ala carte" model of configuration that is the mainstay of most signage companies. We stayed away from recurring fees and licenses, and as a result, our product simply gives our clients a simple to configure "turn-key" digital signage solution for almost any application. Buy the server based on the system size, buy the amount of media players

needed, and that's it! If you think your digital signage company has been ripping you off for recurring annual fees and charges, or for turning on software feature modules, or making it really difficult to know what it really costs - you are probably right.

TOTALCHANNEL'S KEY HIGH PERFORMANCE FEATURES

Nearly every cutting edge feature simply comes standard with TotalChannel, at no additional cost. The main features listed in this section are either a significant step up from what is normally offered in the industry, or it is a feature exclusive to TotalChannel. This is what "High Performance" digital signage should look like.

A Server and Player Configuration that will work over any network, private or public

The system works over a VPN, LAN, or the public internet or a mixed network of private and public and a new player can be brought online anywhere in the world with a simple internet connection. TotalChannel is a simple <u>single</u> server/player set up with few options, that is scalable and without the need for repeater servers. Backup servers can be placed in the system for fail-over or the software only option can run in a VMware environment such as a data center.

Multiple OS Options

TotalChannel Players and Servers have the option to run on **Windows OS or Linux OS** and Windows and Linux OS players can be used in the same server environment without any operational compromises between players. An Active Directory option (LDAP) is available for both server OS versions as an option.

Content Creation Tools and 70 Built in Content Apps

TotalChannel includes an easy to use Screen Layout Tool, Simple Drag and Drop Content Tools, Slide Creation Tools, Menu Board Tools, and an Extensive Content Library. EVERY digital signage company claims there signage is easy to use. But there are two parts of easy to use and most companies are only talking about the first part, which is how easy it is to get around their interface. The second part, the most important part, is does the system DO everything you want a digital signage product to do? This is the part many companies like to gloss over. The "ease" of navigating the Interface is almost inconsequential if the system does not let you work the way you want to work and it does not give you the tools you need to be successful. TotalChannel gives you both, and easy to understand GUI that interfaces with an unmatched feature set.

Player Hardware for Every Need

TotalChannel has player hardware options for 4K, 1080p, and 720p resolutions as well as Multiple Output Players, Single Output Players, Multi Screen Players for Video Walls, Room Signs with built in players, Micro Stick Players as well as software only options. This scalable hardware side of TotalChannel means we are always providing real solutions for real display challenges within any organization. This is a much more complicated product model than simply providing one or two players that have to fit in to every display scenario, but it is the one that provides the best value to our clients.

Sophisticated and Scalable System Management

The TotalChannel System Management tool is in a class by itself. Our most excited new clients are always clients who have used another product. From global view (see real time snapshot of every screen) , reporting and analytics of every function, system monitoring and alarms, content triggering, number of file formats accepted, data interfaces to POS and other systems, playlist management, unlimited departments, users and permissions, to the video walls, dual outputs, built in interactive, and User Content View(Video on Demand) , and all with drag and drop ease of use, we blow the competition away on this feature alone. All management of the system is via a web browser, so managers can update or control the system from any location with nearly any device that has a browser and connectivity to the web. VIA a SmartPhone, tablet, laptop, etc.

Built in Interactive Tools

Used for touch screens or way finding, this Drag and Drop Interactive tool kit lets clients build their own interactive content instead of paying their digital signage provider tens of thousands of dollars for it. Actually, charging a whole lot of money for interactive is such a big part of some signage company's business model, we would characterize several of our competitors as "Interactive Content Developers" that sell signage just to drive their very profitable interactive development business. This one feature alone, even if it is not used today at deployment, can be worth hundreds of thousands of dollars over the life of the system if interactive is ever needed. And it will be because it the future and you are ready for it with TotalChannel! We know of no other signage company that has this High Performance tool built-in at any price, much less included at no charge.

The User Content Viewer - Video on Demand

TotalChannel's UCV (Video On Demand) feature gives viewers of signage the ability to interact with the screen and to choose content they want to view. This dramatically increases the effectiveness of signage by allowing the user or viewer of the display to control what they want to see, and when they want to see it. Each individual Player can be given its own list of "On Demand" content a viewer can choose from. With a simple mobile phone QR code reader, a viewer can select and see video content, brochures, specifications, maps, event calendars, etc. OR they can download forms to take home, be directed to e-commerce sites, get a coupon, pre-order food, buy tickets, call a cab, speak to an operator, and virtually anything. Plenty of signage companies have the ability to display a QR code, but we are unique in that the QR code redirects the viewer's own cell phone to a list of content that THEY can choose to see on THAT one screen only. We know of no other signage company that has this tool.

Multi Format File Import

EVERY common file format is accepted by TotalChannel. Most other signage has one or two formats they can accept at most. Operationally, this is a big deal because it makes more content available to the system. This makes the system more relevant and useful to the viewers and therefore more

relevant to the organization that deployed it. This "open architecture" model also allows us the ability to bring in XML data from other sources such as scheduling systems, POS systems, data feeds, etc.

Content Creation Tools

Although our unique software platform allows us the ability to bring in any standard file formats, our systems also come with content creation tools so operators can design layouts, templates and content inside the system if desired.

Over 60 App Links of Content

Including 10 Weather Apps, 10 News Apps, Multiple Social Media APPs, 4 Finance Apps, 9 Informational Apps, 20+ Live News and Network feeds and streams, 6 Calendar and Clock Widgets and Multiple pre-configured layout templates… With Software Updates, new Apps are being added all the time. How many free apps are in your APP Store?

Ad Tracking and Reporting

(Included at no charge) Not just an As-Run log, but a real content tracking and reporting tool that is completely customizable. Even track what content was triggered by the UCV video on demand app or touch screen interfaces. The few signage companies that have basic reporting sell it ala carte if they even offer it at all.

Video Wall Players and Management

Put a video wall right in the system and treat is as one screen, or many screens and even use the Video on Demand app so customers can interact with the Video Wall. Why manage your video walls separately, on a separate system, when you can have simplified signage management all from one place? Use the same content, the same playlists, the same reporting features and the same apps. What could be easier?

Screen-by-Screen Thumbnail Monitoring

From one to a thousand screens, see a live snapshot of any screen in your entire network at the touch of a button. Our systems give you a thumbnail or an overlay on Google maps to see a comprehensive, diagnostic system health report on a map. See the health of specific media players, including CPU usage, storage information, memory usage, software status, connectivity, last content downloads, and more. See the real "health" of your system anytime at your convenience. The system can also contact you via e-mail if a player goes off line or if a screen is unplugged. All of our playout devices can also be restarted right from the content management software if need be.

Dual Outputs

The TotalChannel Dual Output feature alone means you get "two players in one", meaning two channels of unique visual content can be displayed from one individual player. Each output is treated

like a separate player in the management system and can be assigned its own playlists. (Note: There are special requirements for dual audio outputs so check with your TotalChannel Rep if this is needed).

Unlimited Number of Users, Departments, and Permission Levels

This is not a common everyday feature to begin with, and many signage companies charge for user licenses and very few even come close to matching TC's levels of permissions, unlimited departments, and supervisor approval features. This gives an operator the ability to let other users take on some of the management responsibility of their systems, yet it still gives the control to see what is actually created and give approval for it BEFORE it goes live.

Full System Scheduling

Our systems come with full scheduling tools which allows for specific playlists or even specific pieces of content to start or end the minute or day you want them to. This includes the ability to schedule content downloads or system maintenance to be done when you want as well. This can be set up to happen at night or on a weekend when the systems are not in use, or when network traffic is slower… all scheduling is completely customizable to meet your specific needs.

Emergency Alerting

Our systems come with the ability to quickly and easily push out global alerts. Because our management system is web based, you can easily trigger an alert anywhere you have an Internet connection (phone tablet, laptop, etc). Also, you can send these alerts to every player or just a select group of players, at a moment's notice. Because we interface with the Common Alerting Protocol, we can also take a trigger from an existing emergency alerting system such as a fire alarms, amber alerts, or any other systems that use CAP.

TOTALCHANNEL'S FEATURES SET CHECKS ALL THE BOXES

- ☑ BUY IT and OWN IT…NO RECURRING FEES FOR THE USE OF THE SYSTEM EVER*
- ☑ Browser Based System Management from any browser.
- ☑ Works over any IP environment.
- ☑ Real-Time Thumbnail status on a single screen of all Media Players in the system.
- ☑ Google Maps Overlay of all Media Players in the system.
- ☑ Live Player Statistics of CPU usage, storage, content last played, last time the unit checked in.
- ☑ Customizable Reporting and Analytics.
- ☑ Ad Tracking and Reporting.
- ☑ General Content Tracking and Reporting.
- ☑ Interactive Use Tracking and Reporting.
- ☑ Audit Trail feature that tracks and reports on all user activity in the system.
- ☑ Real -Time System Monitoring and Alarms for player performance.
- ☑ Restart Players remotely from the Management System Software.
- ☑ Remote in and Run Diagnostics on Individual Players from the system management software.
- ☑ Automatic player Set Up and Installation Wizard.
- ☑ The ability to run Multiple OS on Players, Windows \ and Linux seamlessly in the same system.
- ☑ Linux or Windows System Servers available.
- ☑ Active Directory as an option*
- ☑ System Management Software in VMware, Hyper-V, Citrix Data Center environments.
- ☑ System Software can be Load Balanced.
- ☑ Can Generate QR Codes within the software for on demand on content playback.
- ☑ Streaming Output software encoder.
- ☑ Trigger Content by time of day, looped, linked content in the playlist, or mobile device.
- ☑ Trigger Content with GPS triggers, data triggers, outside alarm triggers, or file based triggers.
- ☑ Single-Touch or Multi-Touch screen interfaces.
- ☑ Playlist Returns to Interrupted Point after triggered content is complete.
- ☑ Able to Upload Media Files in Any Common Media File Format.*
- ☑ Unlimited Departments.

☑ Unlimited Users.

☑ Multi- Layered "Permissions" feature customizable to every user.

☑ Automatic Email Approvals feature assignable to every user.

☑ Supports Video Wall Players within the management software.

☑ Media Players with Dual Unique Content outputs. *

☑ A built in Interactive "Tool Kit" that allows for the creation of interactive content.

☑ Create content within the system with a Content Creation Tool.

☑ Slide Creation Tool for quick announcement creation.

☑ Video on Demand from a viewer's mobile device to display content.

☑ 9 Built in Weather App Links.

☑ 10 Built In News App Links.

☑ 10 Built in Informational App Links.

☑ 13 built in Preconfigured Screen Layouts.

☑ 20 Live News and Network Feeds and Stream Links.

☑ 9 Built in Social Media App Links.

Features Notes:

- Dual unique outputs applies to video information only. Audio is single channel. TotalChannel recommends a player for each screen where discrete audio is needed for each screen.
- Native PowerPoint/Excel/Word Files require Windows OS and Microsoft Office combination is installed on Players . All OS players can playback PowerPoint files saved as JPEG or .MOV Files, which is the recommended solution.
- Active Directory for Enterprise Users is Option.
- Software updates for the 1st year are included, and can be purchased annually after year 1.   Without software updates, some apps in the app store will become incompatible with newer versions of the software and be turned off after year one to avoid interfering with the function of the system. TotalChannel recommends software updates.
- Applications in the App Store provided by third parties such as news feeds, or weather feeds may be discontinued by the third party and such interruptions are beyond Total Channel's control and Total Channel makes no warranties about their continued use or availability.
- Television or video input from a cable box or other device directly in to a player requires Windows OS on that player.

THINGS FREQUENTLY ASKED & THINGS THAT SHOULD BE ASKED

Does TotalChannel allow for content approval workflow that is dynamic based on display groups and can the system identify signage content charges based on the group that submitted the signage and how long it played?

Yes, the system has a sophisticated reporting system that tracks all activity in the system and can create custom reports. The system also has an "Audit Trail Feature" which tracks every user's access to the system and can be organized into a report. In addition to reporting and auditing, the approval system allows each individual users access to the system and changes made by that user to be pre-approved by a designated approver to approve any changes prior to going live in the system. The approver automatically receives an email from the system that contains two links. The first link is to view the changes, and the second link is to approve or disapprove the changes. With this system, no unapproved content can make it on to a display. The audit trail will record any data that was entered and activities that have been affected during any user operation. The Audit Trail can help a digital signage network administrator keep track of what users accessed and changes made to data. For security purposes administrators can view who had access to the system, what actions were performed, and the date and time it occurred. Audit trail runs in a privileged mode, meaning that it can access and supervise all actions performed by users. TotalChannel Audit Trail provides optimal security protection and control, for safe and trouble-free operation.

Does TotalChannel help me launch my network with training and launch services.

Along with training, TotalChannel has a range of launch services to help clients get their networks up and running smoothly, design layouts, build playlists, set up schedules, import files and almost any function needed to get a network operational. From Web training, on-site training, on-site commissioning , to web or on site launch services, TotalChannel is committed to providing you with every resource to launch the network.

Does TotalChannel have the ability to create schedules to override existing scheduled content on specified players for a set time frame and then revert back to the original schedule?

Yes, in several ways. There are a number of ways to interrupt the schedule remotely, replace it with a new schedule, or trigger a different schedule via a manual or automated trigger (i.e. Common Alerting Protocol or Contact Closures). Individual screens can be interrupted by actual viewer input when using the Video on Demand application feature. In all cases, the interrupted programming will return to the point in which it had been interrupted, and continue playing from that point. Our scheduling system allows for several quick and easy methods to plan ahead and organize content to appear at your convenience. This feature allows for an accurate and consistent flow of content, which can effortlessly be prepared by adjusting the time and date. Other options include loop number (decide how often a piece of content should appear within a playlist), transitions, durations, an option to sync individual pieces of content to appear simultaneously, and more. Adjust the content playlist so that it will run

either normally, On Demand, via Touchscreen Interactivity, Intermittent, or even by location with our GPS Content Triggers.

Describe the ability to remotely control the monitor functions via the media player and software. (Example - schedule monitors to turn on/off at certain times)

The system includes interfaces for the most common RS-232 monitor control protocols. All features provided by the particular monitor manufacturer protocol are available.   Additionally, and perhaps preferably, the player itself can be scheduled to turn on and off at any time, simply putting modern monitors to sleep (standby-mode) so that continually powering up and down of monitors is not necessary, potentially reducing power supply failures and service issues with monitors. Non Standard RS-232 Protocols are generally easy to add.

Can TotalChannel show what is playing on each monitor through the software without going to the monitor?

Yes, in several ways. Every single monitor, and its last reported snapshot can be viewed on the global view. Not only can the operator see what is playing on any monitor, but can look at other information for the player including player status, CPU usage, memory usage, the last time the player checked in, and other parameters. This view can be organized on the screen in any grouping or can be laid over Google maps. If a player goes offline for any reason and does not check in at its required intervals, the system will provide an on-screen alarm and can be set up to send email notifications to designated recipients informing them of a player offline.

Does TotalChannel offer way finding and how do you control it?

Interactive Development Tools, using single touch or multi-touch technologies are built right in to the system. Users can import their own maps, button, arrows, and design and implement their own way finding without expensive outside development. This simple and easy to use tool is included with the system. Most, if not all other digital signage companies treat interactive content as a separate development item that occurs outside of the software, as an HTML usually, requires significant dollars, and can only be changed by the company's in house developers. TotalChannel puts interactive in the hands of the system administrator.

Does TotalChannel allow for viewer interaction directly with the screen without touch panels?

Yes. The User Content Viewer (Video on Demand) allows administrators to assign specific '*On Demand*' content to each player. A viewer can access the content available to the screen he/she is in front of by scanning the QR code on the screen with their mobile device. A list of content (video, audio, graphics, documents, maps, brochures, and virtually anything that can be accessed with a URL) available to that specific screen will appear on their mobile device. They simply select the information they wish to see from the list on their mobile device and the player they are in front of will interrupt its schedule to show the content they have selected. After the content has finished or times out, the playlist will return to the point of interruption and continue on its schedule.

Does TotalChannel allow for custom templates that can be shared internally?

Yes. There is no limit to the number of custom templates that can be created within the system, and each custom template can be shared by administrators internally. Non-administrative users can also access, create and share templates based on the level of permissions that they have been delegated. Layouts can also be programmed to change in the middle of a playlist, or at different times of the day. Content can also be displayed as in the layout, or can go to full screen at any time. The system also allows for overlays, which can be used for logos or bugs on any layout.

Describe the content flow of how TotalChannel pushes and receives content.

The system works on a pull technology. Players are given specific instruction on how to schedule content, what content to use, how to get the content, how to store the content and how often to check back with the server for new content or new instructions. Stored content files are downloaded from the server to the player, and other live content is sourced by the player itself per instructions it received from the server. Such as a weather or traffic report, RSS feed, News feed, or any other live content which the individual player will obtain on its own depending on its location (zip code).

Describe TotalChannel's ability to split the screen to display multiple inputs at once.

The ability to create content zones on a screen is unlimited. Each zone can be assigned its own schedule and display any type of content within that schedule. Layouts are easily designed within the system and can be built with a drag-and-drop tool or zones can be sized precisely by pixels. Each layout is named and stored in the system and can be used at any time.

How does TotalChannel handle dynamic feeds including: RSS, Television, Date/Time, Calendar, and Weather?

The App Library in the system includes 67 content apps that can be used in the system in a drag and drop fashion. As outlined above, the server puts instructions in the playlist for each player concerning dynamic feeds. The player knows at what time to go get the feed itself and to which zone it should be placed. The player itself goes out to the web and gets the feed per the schedule.   The server does not process the dynamic content, only the instruction for it, thus minimizing LAN traffic and bandwidth requirements. The system can display any H.264 stream. Each individual player can also be equipped with a TV input option to receive a TV input from a local cable box, or any HDMI video feed. This is useful where a TV input is perhaps needed for just a single or a few locations. The System App Store also includes an app for the subscription service Ustream.tv which allows for live online h.264 streams to be created and used across the system from any location.

What media types are supported to be played with TotalChannel?

All players can handle up-loadable files, including the following: JPEG, PNG, BITMAP, GIF non-animated, FLV, SWF, PPT, PDF, AVI, MOV, MPEG 1, 2, and 4, WMV, and H264, DivX, H-263, and QuickTime. Streaming videos can also be utilized in webpage, HTML, Live TV, RSS feeds, USB, and webcam. Our players also support all audio formats, including MPEG-3.

How does TotalChannel allow for Social Media integration (Twitter, Facebook, and Instagram)?

The TotalChannel software comes with an app store containing over 60 free built-in applications that can be added within any playlist created by the end user; including various social media applications that can be customized to display information feeds from specific accounts, and also include the ability to modify the overall appearance to further tailor the design to fit your playlist. (NOTE: As the system master control software is updated, third party apps will also be upgraded for newer versions and will lose some functionality with older versions of the system software. Therefore, if the customer has not purchased software updates, portions of the APP store will be turned off after the first year to avoid interfering with the system performance. A core group of News and Weather apps will remain in the system indefinitely.)

How does TotalChannel integrate with touchscreen applications?

TotalChannel players and software support single touch or multi-touch interfaces. Drop down menus allow customization with no programming required. Applications can be installed or removed or changed at any time. Create menus and sub menus, using drag and drop functionality. Remote management tools. Real-time reporting on touch screen interaction and functionality, supports multiple languages.

Describe how TotalChannel can auto push presentations after content has changed or pieces have been deleted/added to ensure the monitors are showing the most current information.

The server can be instructed to push new content and update the playlist on demand, or the player can be set up to check back in for update with the server at any interval from every 2 seconds, to 2 minutes to 2 weeks. This is flexible and completely customizable and is set up as instructions for each individual player. The user can manually push changes to the playlist or the player will pick up the changes on its next scheduled check-in with the server.

What types of security features are built into your products?

The TotalChannel server software was created with an open architecture, meaning that can be integrated within any smaller local network up to larger more sophisticated enterprise infrastructures. A document can be provided upon request detailing the data flow and security features of the system for additional clarification. Layers of security include access control, permissions and approvals for users, player security through player ID, network security, reporting, audits, and the ability to run in VPN environments.

What parts of TotalChannel need regular maintenance, and what is the maintenance schedule? (Ex: quarterly software/firmware patches, monthly player patches, etc.)

Software updates are not required, but recommended when available. There is no standard schedule. Under Location and Displays, network operators can perform player maintenance tasks remotely, such as reboot, upgrades, and rollbacks. Network operators can also schedule a task to be carried out at the time that is requested. With the scheduling feature and software updates, operators can upgrade to any future version that is made available.

Does TotalChannel allow for Active Directory authentication?

Yes, with the MC Enterprise Module option selected. This is one of the few optional features on our system.

Please describe TotalChannel's ability to produce reports.

Inside of Analysis, there are two sections consisting of Dashboard and Reports. Network operators can immediately receive a customized report in just seconds. The Dashboard section provides the operator with an overlook of a network status, player status, content affiliate, storage, and running ads. The Reports section allows for the operator to export or print a performance report, which includes the impression of any ads played on the network. The operator can create criteria which will populate the report, which is ready to be sent to advertisers or customers. The report fields are customizable and custom reports can be created down to a particular piece of content on a particular screen. The system will create a PDF or QSV file of any report.

Describe the automatic notification capability for display problems.

Yes, in several ways. Every single monitor, and its last reported snapshot can be viewed on the global view. Not only can the operator see what is playing on any monitor, at the last check in, but can look at other information for the player including player status, CPU usage, memory usage, the last time the player checked in, and other parameters. This view can be organized on the screen in any grouping or can be laid over Google maps. If a player goes offline for any reason and does not check in at its required intervals, the system can be set up to send email notifications to designated recipients informing them of a player offline. The player can check in with the server every few seconds, few hours or few days. The check-in requires very little bandwidth and most operators set the check in interval to 5 seconds or less, making notification and visual verification of player status nearly real time. If the player fails to check in, the system will alert in the global view that the player is offline and send email notifications.

Describe your annual software support structure and all costs associated with support.

24/7 software support is free for three years. Software updates are included for the first year and can be purchased for additional years. Software Updates are optional but are strongly recommended as the software is updated with new features regularly and some features in the third party APP store will end of life without the most current updated version of the software. Additional software and hardware warranties are available for up to five years if required.

Do you provide 24/7 support and what is your response time?

Total Channel does provide 24/7 support and the response time is 15-20 minutes typically. The responding technician is required to notify management within 20 minutes of the call that he has the report and has responded. If this has not occurred for some reason, managers will respond and guide the call to the appropriate resources.

Describe how calls are handled and how items are escalated when not easily resolved by first responders.

Every team member of service and support, as well as senior managers are notified of service calls within one minute of the initial call. Verification is made that the on-call technician has control and can resolve the issue. Calls are escalated to factory technicians if field technicians cannot resolve the issue within the hour. With remote access, TotalChannel technicians can dial remotely in to players or servers, to troubleshoot, reload software, reconfigure settings, and perform updates or any other function remotely. 95% of calls to support are operational and completely resolved within 30 minutes (See Service and Support Statement).

How will your company handle training and initial set up of the system?

TotalChannel provides on-site or remote web training. This is the choice of the end user. A stated goal of training is to have the customer system up and running and operational at the end of training period. In other words, the training is specific to the customer's use of the system rather than generic. Additional web training can be purchased at any time. TotalChannel also offers a package of Launch Services (20 Hour Increments), which goes beyond training to set up and configure any aspects of the system necessary for a successful launch on a customer's network. Network issues, security issue, designing layouts, building initial playlists, onsite commissioning of the system, coordinating with the integrator and other vendors on integration, or any other aspect of system launch that may be important to the customer.

How does TotalChannel system handle displaying event information and POS integration?

TotalChannel can display third party event information from an XML and display the data contained in that XML file in any custom design, on any schedule. Text files can be created though the EZBoard feature and triggered by external means, or a custom application can be developed for particular interface need. TotalChannel can display third party POS information from an XML file and display the data contained in that XML file in any custom design and on any schedule. Live updates to the POS can be updated in the system as soon as the XML file is updated by the POS. A custom application can be developed for particular interface needs not covered.

Can TotalChannel display by day part?

Yes, in as many day parts as needed. There is not a limit. The software will run playlists on each player in any time or day part configuration. The layout can change within the schedule as well, letting the unit go from a morning layout to a mid-morning layout at a set time for example.

What other systems can your system interface with?

TotalChannel can interface with data from most systems that can provide the data in a common XML file format with minimal custom development. Because of the open architecture design of the software, other interfaces are available with reasonably priced custom script development. Generally, TotalChannel can easily interface with other programs that will run in the Windows environment due to the unique open architecture of the system. Some interfaces, like native PowerPoint require that the unit be running Windows OS instead of Linux Ubuntu and that PP be installed on the player. Also, taking a video feed from an external source into a specific player will require Windows on the player where this feature is needed as well as the TV input option.

Native PowerPoint file integration is very specific, rarely used, and not generally recommended. PowerPoint files can only be used natively by adding Windows and Office/PowerPoint to each player where it is needed. However, any player running Windows or Linux can display PowerPoint files if the PowerPoint presentations are simply saved as JPEG or MOV files. Generally speaking, PowerPoint is not a recommended method of creating content when compared to the built in slide creator in the system.

The TotalChannel Digital Media Players

The TotalChannel line of digital signage players is scalable from simple menu sign basic players all the way up to specialty video wall players.   Our hardware philosophy is built around the idea that the best way to scale various uses within the system and provide the best value is to scale the hardware instead of the software. All of the different player types operate in the same network and are controlled by the same controller.   So room signs and menu boards are operating in the same network environment as 4K players and video walls. Each has access to the same layouts and the same content and is managed by the same team or even different teams on the same server if desired. Import content once and manage it on every screen type in the facility with the same management tools.

The player can support all types of standard video formats, Flash, images, RSS feeds, live TV feeds, and more. TotalChannel digital signage players can be connected directly to the Internet through a cable or DSL modem, customer's LAN, Wi-Fi, or Cellular 3G and 4G, with any static or dynamic host configuration.

What about Streaming-Media Support?

The streaming-media protocols supported by TotalChannel's software includes Real-Time Streaming Protocol (RTP/RTSP); Microsoft Windows Media Technologies over RTSP; Microsoft Media Server Protocol; Apple QuickTime for standard-based MPEG streaming; HTTP streaming delivery of MPEG, Advanced Streaming Format (ASF), and QuickTime Movie (MOV) format files. RTP/RTSP-based Cisco streaming engines are used for VoD integration with the TotalChannel software. TotalChannel players currently are compatible with the ability to deliver MPEG content over their HTTP streaming system. Nearly every Total Channel customer makes use of the Total Channel stream decoding feature in their day to day operations. Instead of developing proprietary decoder and trying to keep up with changes in the industry, Total Channel incorporates the common and prolific VLC plugin for decoding streams.

The VLC media player has been downloaded more than **176 million times**. By using VLC, our clients can be assured that as encoding technologies and methods evolve, our decoding capacity will remain as current and upgradeable as VLC.

VLC is a portable multimedia player, encoder, and streamer supporting many audio and video codecs and file formats as well as DVDs, VCDs, and various streaming protocols. It is able to stream over networks and to transcode multimedia files and save them into various formats.   The default distribution of VLC includes a large number of free decoding and encoding libraries; on the Windows platform, this greatly reduces the need for finding/calibrating proprietary plugins.

The Advantages of Using VLC:

VLC supports all audio and video formats and all file formats supported by libavcodec and libavformat. This means that VLC can play back H.264 or MPEG-4 video as well as support FLV or MXF file formats "out of the box" using FFmpeg's libraries. Alternatively, VLC has modules for codecs that are not based on FFmpeg's libraries. This feature is not unique to VLC, as any player using the FFmpeg libraries, including MPlayer and xine-lib-based players, should be able to play those formats without the need for external codecs.

On Microsoft Windows, VLC also supports the Direct Media Object (DMO) framework and can therefore make use of some third-party DLLs. On most platforms, VLC can tune in to and view DVB-C, DVB-T and DVB-S channels. On Mac OS X the separate EyeTV plugin is required, on Windows it requires the card's BDA Drivers.

VLC can play videos in the AVCHD format, a highly compressed format used in recent HD camcorders.   VLC is continuously upgrading and currently supports the following input formats: Cinepak, Dirac, DV, H.263, H.264/MPEG-4 AVC, H.265/MPEG HEVC, HuffYUV, Indeo 3,[MJPEG, MPEG-1, MPEG-2, MPEG-4 Part 2, RealVideo 3&4, Sorenson, Theora, VC-1, VP5, VP6, VP8, VP9, DNxHD, ProRes and some WMV.

How do we deliver content to a location overnight or during non-business hours?

With the TotalChannel digital signage solution, network administrators can define the time of day-based content distribution, allowing for them to control how media is distributed across players. They can apply these configuration settings at the location level. Network administrators can strictly define the maximum bandwidth each player can use when downloading or streaming the content. The value of this service is most evident with larger sized content. When content managers create and distribute multiple gigabytes of signage content, the scheduled bandwidth settings allow the IT administrator to control the flow of this traffic to the players, and protect the organization's mission-critical applications during normal business hours

How much content should I store in the player?

It important to understand the unique architecture of the system. The server only sends files and instructions to the player. The player only needs to store the instructions and the files that are needed for its playlist. Any online content the player needs for its playlist, such as weather reports, RSS feeds, News, etc, will be retrieved by the individual player as needed through the internet. This significantly improves the amount of media that can be stored on the player, and reduces the amount of WAN traffic created when multiple players exist at a single location. The hard disk drive capacity needed for your player depends on the format, duration, and number of media files you have in the player's playlist. Player hard drives can be upgraded at the time of order if needed. Most standard priced TotalChannel players include 32GB or 64GB Solid State Drives but can upsized all the way up to 1TB on some models.

If using Ubuntu Server instead of Windows Server, are you able to bypass the need for the LDAP integration piece?

No, not if you want to use Active Directory. The Active Directory integration module is attached to the TC server software regardless of the OS.

What are the differences for Active directory when using the Ubuntu vs. Windows OS? Is one better than another?

None , they are the same.

Is there an open API for XML integration.

There is no customer facing open API available at this time. However; there is a development guide for XML integration and we could provide training on XML Integrations. Our APP store is primarily stocked with XML based apps developed by third parties.

Do we have any specific determining parameters regarding the features included in future updates?

Most new features are customer driven and go through a typical evaluation/development/beta test/review/repeat cycle.

For the virtual software integration, what Hyper V. do we use?

In Windows it is Hyper V 2012 R2, Umbutu installations will work with any virtualization or any Hyper V that can support Ubuntu as a guest operating system. Such as OVA/OVF – ESXI / VMware/ VirtualBox

Does TotalChannel support HTTPS when connecting to the server?

Yes

TOTALCHANNEL

The Company & The Product

Can TotalChannel support and/or point at a programmed IPTV server itself as opposed to individual streams? I.E. A server puts out multiple channels over IP, can we grab/'tune' those streams?

Yes, depending on the stream protocols or formats, however if the streams are compatible with VLC then TC can bring in the Stream use it .

SECURITY and DATA REQUIREMENT BASICS

Pull Technology Creates a Secure Environment

The Server and the Players work off of pull technology in day-to-day operations. The players are programmed by the user as to how often to check in with the server for new updates and new content. It is during this check in process that the player also uploads to the server its health status statistics. The server is not in constant contact with the players, and it is not streaming content or information to the players. The players have a 16- digit identification code that is entered into the server and the server will only recognize the 16 digit identification codes of players in its player list. The server is not public facing in any way.

Users have a user name and password and the system will not recognize log-ins from unauthorized users. Individual users can be granted limited or modified areas of access within the system so that individual users may have access within the system to specific player, groups of player or even specific zones on players.

OS Flexibility and Security

The system's ability to use Windows OS or Linux Ubuntu OS on players and servers gives users an added flexibility in security. A client who has a heavily defended Windows environment can have compatibility comfort that our Windows devices fits in to their system just like an additional laptop or desktop, and our servers operate neatly behind their firewall. Same with Linux Ubuntu, which for the Microsoft reluctant crowd allows digital signage that fits into their Linux defended environment. Additionally, across a large deployment with different facilities, Linux and Windows OS devices can operate seamlessly from the same server in the different network environments or though the public internet.

Port Assignments

The server and players communicate over a designated TCP/IP port. The default port is 80 and can be changed to any other port besides SSL/443. Changing the communication port needs to be assigned for the server and each player.

VPN Option

If there is a need to encrypt the entire communication between the TC player and the TC server, clients can utilize the VPN option to set up communication between the server and player through OpenVPN.

Player/Server Communication Bandwidth Requirements

The TC player has 2 bandwidth stages when communicating with the TC server, first stage is when the player is downloading content after playlist changes. In this stage, the player accesses the server to download all of the media content. The player will then store them locally and play them based on the

schedule assigned to each media file. The second stage occurs while the player is displaying the media file from the playlist. In this stage, the player will perform 3 tasks.

1. The TC player will check with the server for new playlist updates based on the user defined interval assigned on the TotalChannel server setup for that player. (Default value is 30 sec estimate less than 1K) This means that every 30 seconds, the player will query the server for playlist updates and the bandwidth for this function is less than 1K.   This is a user defined interval which can be set from anywhere from a few seconds, to once a day, to several times a month.

2. When the TC player checks in for updates, it will automatically upload diagnostic information in regards to the player health status, as well as the media that has been played report at every set interval assigned on the TotalChannel server. (Default value is 30 sec estimate below 5K of data). This is the data that is used to create reports about which content has run, what time, etc.

3. The TC player will also upload a player health snapshot to the server every set interval assign on the server. (Default value is 3 minutes estimate 50Kb Bandwidth Usage).

SERVICE AND SUPPORT

How we treat support of our products anywhere in the world is multi-layered effort to provide the best support experience possible. The founders of TotalChannel come from this industry (Broadcast and Pro A/V), and have been supporting products and systems globally for over 30 years. That is a lot of accumulated knowledge, which was leveraged into to how we designed the systems to be able to take care of our clients in any location. Support is not an after-thought with TotalChannel, because our systems were designed from the ground up, making them easy for us to support.

Warranty

The warranty on TC Server and Player hardware is 3 years. Warranty covers defects in materials or workmanship and is for depot service. Software Warranty is for 1 year unless software updates are purchased and then the Software Warranty occurs with the Software Update period that has been purchased.

Software Updates

The first 12 months of software updates are also included in the system and additional years of software updates can be purchased on an annual basis. Software updates are strongly recommended for sustained best performance of the system but are not mandatory. As the management software evolves, so do the apps and the interface to the apps. Some Apps in the "App Store" will degrade or not be available after the first year without the software upgrade as apps and the system software are constantly evolving. Without software upgrades, a group of apps that tend change with the updated version of the software will be automatically turned off at the end of the first year so that they have no impact on system performance.

Support

All systems come standard with 3 years of 24/7/365 phone and Internet support, at NO additional cost. Additional Service and support for years 4 and 5 can be purchased, but again this is in no way mandatory.

Most equipment manufacturers look at worldwide support in a very parochial fashion as being related to their own employee, their own facilities or their dealer footprint as the measure of reach and quality of support success. We took a different approach to support and decided to use real time results as our metric by looking at how we would actually set up the product to solve real problems in the quickest and most efficient way without on-site intervention. We see support as four unique layers that provide actual results right now, rather than a number to call from a remote location to schedule an on-site time for hand holding.

Layer One / Remote Servicing

If there is a problem with a player, our support specialists can "dial" into the player remotely, and restart it, reload the software on to it, re-establish its settings, or update the software remotely. As long as the unit is connected, it does not matter where on the planet the player is located. Since the system is set up for easy remote servicing, there is no difference in our support feature between a player in Iowa and player in Katmandu. Over 99% of the few service tickets we get are resolved this way, in less than one hour. As a matter of fact, the end users system administrator can perform any of these same functions, if they are so inclined to do so from their own management software on their own server. No other systems that we know of is designed to provide anywhere near this level on "no-touch" remote servicing. We also provide all clients with after-hours contacts to resolve problems. Remote servicing requires the customer grant access to TotalChannel if the products are behind a firewall.

Layer Two / Professional Grade Hardware:

TotalChannel's hardware is carefully selected to minimize hardware failures and provide excellent support in the rare case it is needed. All of our Players are either fanless or employ "smart fan" technology, so that the fans do not run constantly and on an "only-as-needed" basis. All of our players have Solid State hard drives instead of spinning disk hard drives. Because spinning hard drives are the number one cause of hardware failures in any system over time , we minimized that by putting in SSD technology. The hardware can be custom configured to meet any number of specific requirements. From 4K content playback to full redundancy on the server side if needed. Additionally, our 3 year hardware parts and labor warranty is provided to us by our hardware manufacturing partners, so we can avail ourselves of any of their worldwide support and service operations at any time as well.

In the rare case of a hardware failure

*   In the US, units are returned to Depot for depot repair or replacement. Basic service is performed either in Austin, Texas or Los Angeles, California.
*   In Europe, we would have the unit sent to our hardware manufacturing partner's service facility in Elmshorn, Germany for warranty service *(Overseas hardware service is only available on specific TotalChannel Players).*
*   In Asia, an offending unit could be sent to Tokyo, Taipei City, Beijing, Shenzhen or Shanghai.
*   On a large enough deployment, advanced replacement units can be staged out of country to be more readily accessible if needed.

Layer Three/ Installation and Set Up

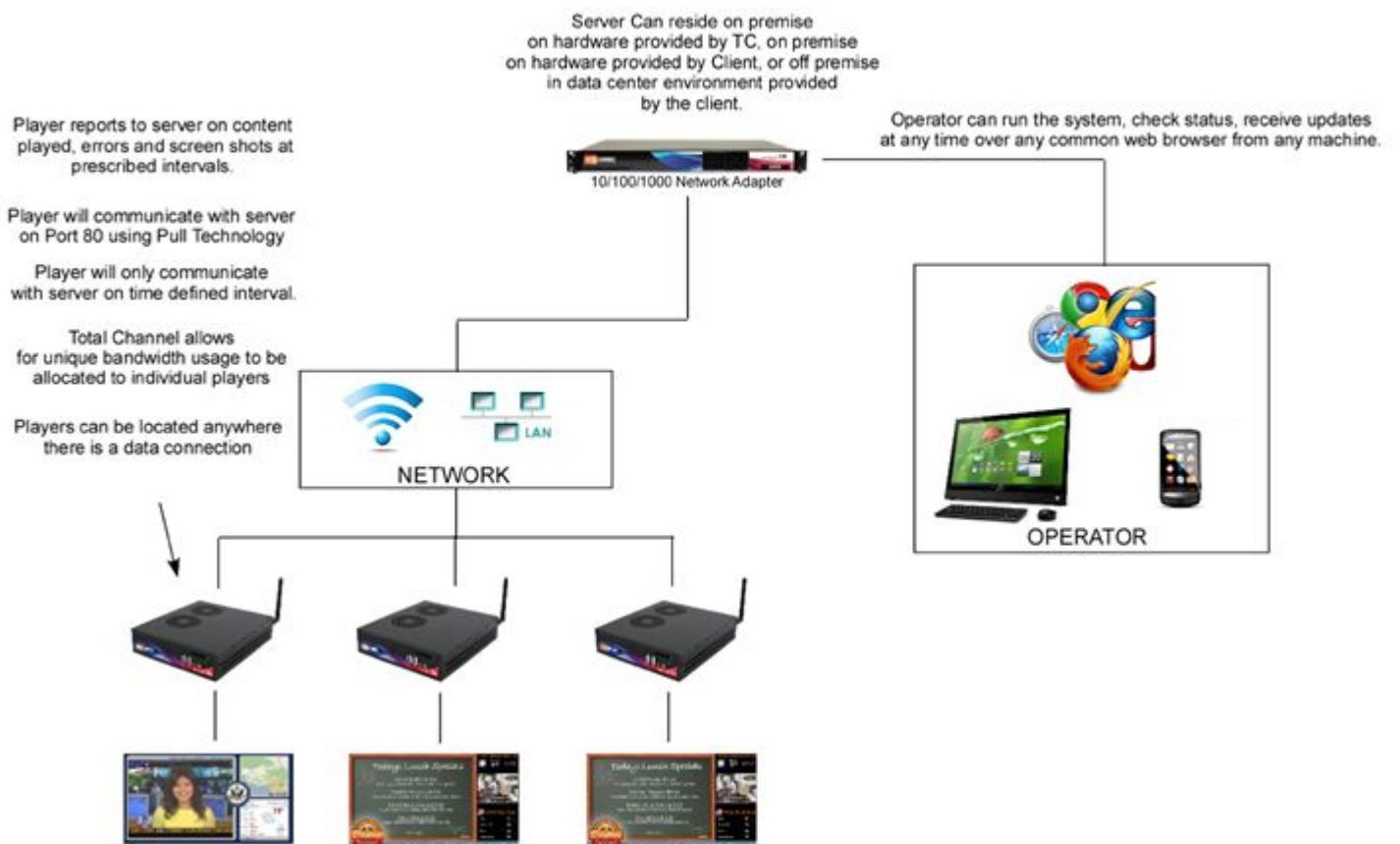The system is designed with an "Installation Wizard" that makes setting up a new unit anywhere in the world a snap. The technician who installs the screen simply needs to connect the Playout unit to a network, (wired or wireless), restart it and communicate the number that comes up on the screen to the system administrator at the server level. The administrator enters the number into the management

software and that unit begins receiving its playlist and becomes functional without any other action needed at the remote location. Depending on the size of the playlist and the Internet speed at that location, the unit could be operational in a few minutes, and up to no more than an hour in a normal scenario. Meaning, hundreds of remote locations could be made operational in a day. With the proper access to the server management software, the technician could actually bring the unit online from any remote device.

Layer Four/ Management

Our system management software is second to none when it comes to managing a worldwide system. Our most excited new clients are always clients who have struggled with another system's content management shortcomings. The system health-monitoring feature of our systems allows the administrator who may be residing anywhere in the world, to simply "hover" a mouse over any spot on a map of the earth and instantly see the health of one to thousands of screens in their worldwide network. They can easily see player health, CPU usage, storage, memory usage, software status, connectivity, last download, and more. Using the vast tool set that comes standard with each TotalChannel system such as our global view mentioned above, reporting & analytics, system monitoring & alarms, content triggering, multiple accepted file formats, data interfaces, playlist management, departments, users & permissions, to the video walls, dual outputs, built in interactive, User Content Viewer, and all with drag and drop ease of use, we are vastly unique in many ways, not just in system management.

BASIC DATA FLOW DIAGRAM

Server Can reside on premise on hardware provided by TC, on premise on hardware provided by Client, or off premise in data center environment provided by the client.

Operator can run the system, check status, receive updates at any time over any common web browser from any machine.

10/100/1000 Network Adapter

Player reports to server on content played, errors and screen shots at prescribed intervals.

Player will communicate with server on Port 80 using Pull Technology

Player will only communicate with server on time defined interval.

Total Channel allows for unique bandwidth usage to be allocated to individual players

Players can be located anywhere there is a data connection

NETWORK

OPERATOR

TOTALCHANNEL

TotalChannel LLC
Standard Limited Warranty

Standard limited warranty is three (3) years for both the hardware and software from the time of purchase. Further warranty information is determined by the product and additional details for each products warranty if required is set forth in the service manual for that product. Warranty may be voided due to improper installation by unauthorized personnel or if the hardware or software has been tampered with, has been modified in any way without prior written TotalChannel approval, has new software installed, anti-virus software installed, existing software uninstalled or reinstalled by anyone other than TotalChannel personnel or without TotalChannel's express written permission. The Limited Warranty covers defects in materials and workmanship only and does not cover misuse, environmental damage such as that caused by poor ventilation, improper mounting, dust, moisture, or excessive heat, cold, shipping damage, or improper modifications to the hardware or software configurations. Hardware Warranty is for depot service only, and TotalChannel may repair or replace the unit at its sole discretion. Reseller is responsible for shipping charges for service unless otherwise agreed to by TotalChannel in advance. In the event of discontinued product, TotalChannel at is sole discretion may replace the hardware with different, however; comparable and functional equivalent hardware similar to the original. The warranties do not extend to any defect, failure or damage caused by (i) use of the Products in violation of the license granted by TotalChannel or in a manner inconsistent with the Product instructions; (ii) use of non-TotalChannel furnished equipment, software, or facilities with Products; (iii) failure to follow installation, operation, maintenance or care instructions; (iv) failure to permit TotalChannel's timely access, remote or otherwise, to Products; (v) failure to implement all new Updates to Software to the extent such Updates are made available to Customer; or (vi) virus or malware that comes into contact with the Product after the date of shipment. TotalChannel shall not be obligated, in any event, to reimburse Customer for service provided by personnel other than TotalChannel representatives or to furnish service under the applicable warranty: (a) to repair damage resulting from attempts by personnel other than TotalChannel representatives to install, repair or service the Product; (b) to repair damage resulting from improper use or connection to incompatible equipment; or (c) to service a Product that has been modified or integrated with other products without TotalChannel's written approval. It is expressly understood and agreed that the Products will be maintained at operational condition, taking into account its age and normal wear and tear and nothing herein obligates TotalChannel to maintain the Products in new or like new condition. TotalChannel does not guarantee backwards compatibility of Updates and/or Upgrades with respect to all prior Product versions. Continued access to or the continued functions of third party applications provided in the "App Store" are not covered by the warranty. Third party applications may change from time to time, be discontinued by the application provider, or for reasons beyond TotalChannel's control no longer be compatible with new versions the TotalChannel Software. If the customer has not purchased software updates, some third party applications will be disabled or removed after the first 12 months to prevent updated applications from interfering with the performance of legacy server software. All features listed in the TotalChannel marketing materials or website may not be available on the Linux OS versions of the players. TotalChannel's limited warranty does not cover defects in third party software applications such as Linux Ubuntu OS or Microsoft Windows OS. The TotalChannel Limited Warranty only applies to TotalChannel provided devices. Software only purchases, to be installed on customer furnished equipment, are subject to a modified warranty exclusion at the time of purchase as may be required for the particular hardware. In order for the Limited Warranty to be in effect on software to be installed on customer furnished equipment, the customer furnished equipment must

conform to TotalChannel's minimum equipment specifications for the application. The TotalChannel limited Warranty does NOT extend to customer provided hardware and TotalChannel makes no representations, expressed or implied about the suitability, functionality, dependability, or service of customer furnished hardware.

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