



Lighthouse

Transform your Marina User Experience



Lighthouse extends Marina's functionality to business users, operational staff and engineers both inside and outside your broadcast facility. It delivers control, monitoring, content management and channel design and launch tools via an array of Widgets on configurable web-based dashboards, with the latest encryption for complete security. User-based permissions ensure that your mission-critical information is protected within the web environment.

Lighthouse can span multiple Marina systems which may be running different software versions and be operating at different frame rates. Users can configure their own layouts according to their roles, and switch between multiple dashboards at the click of a mouse.

Powerful remote management and monitoring for your Marina automation environment

KEY BENEFITS

- Delivers operational efficiencies to service providers and multi-channel installations, by offering consolidated views of multiple Marina systems which can:
 - be geographically separate
 - have mixed frame rates
 - run different software versions
- Adds value for service providers' customers, giving them visibility and optionally control of their own channels.
- Leverages the latest web technologies to deliver market-leading user-focused innovation around a mature Marina core.
- Enables secure operational and engineering interaction with Marina from remote access points
- Offers up mission-critical information beyond the secure automation LAN, enabling fast response from users in the office environment.

WIDGETS

Lighthouse functionality is offered through user-configured widgets which are selected from a widget directory and grouped together on dashboards. Any dashboard can be shared between users and groups of users, and can also be displayed as a 'wallboard' which removes unnecessary browser real estate for optimised delivery to a multiviewer.



Monitoring by Exception

Channel Exception Monitor

Provides a consolidated view of all playlist errors which are detected across all or selected channels, across multiple Marina systems. Displays event errors in configurable order of priority, with the ability to dismiss or snooze alarms. Examples include: *missing media, timing errors, invalid metadata*

Channel Exception Monitor									
Playlist Validation Summary									
Owner	Status Summary	Error Count	New Error	EDA Needs	EDA Time	On Air	On Air # ITI	Remaining On Air	
DemoList1		14		EDA Event	00:01:46	T002093108	16:05:16	00:01:46	
Demolist2		115		Missing Media	00:01:48	A07101244	15:30:39	00:01:09	
ProDemoList1		1		Unable To Connect	12:25:52	00:00:00	00:00:01		
MusicCast		1		Unable To Connect	12:25:50	00:00:00	00:00:01		
Orchestra1		1		Unable To Connect	12:25:52	00:00:00	00:00:01		
Type									
Detail									
	Invalid Media Segment		clip017	has Invalid Media Segment error on Backup!	16:05:16	00:01:46	clip017	Bumper End	
	Invalid Media Segment		clip017	has Invalid Media Segment error on Main!	16:05:16	00:01:46	clip017	Bumper End	
	EOM Extent		TOPFWHWR0202	has EOM! error on Backup!	16:17:46	00:00:16	TOPFWHWR0202	Discover Run	
	EOM Extent		TOPFWHWR0202	has EOM! error on Main!	16:17:46	00:00:16	TOPFWHWR0202	Discover Run	
	Invalid Media Segment		TOPFWHWR0202	has Invalid Media Segment! error on Backup!	16:17:46	00:00:16	TOPFWHWR0202	Discover Run	
	Invalid Media Segment		TOPFWHWR0202	has Invalid Media Segment! error on Main!	16:17:46	00:00:16	TOPFWHWR0202	Discover Run	
	Missing Media		TOPFWHWR0202	has Missing Media error on Backup!	16:17:46	00:00:16	TOPFWHWR0202	Bumper Warning	
	Missing Media		TOPFWHWR0202	has Missing Media error on Main!	16:17:46	00:00:16	TOPFWHWR0202	Bumper Warning	
	EOM Extent		TOPFWHWR0202	has EOM! error on Backup! Event disabled	16:17:46	00:00:16	TOPFWHWR0202	Discover Run	
	EOM Extent		TOPFWHWR0202	has EOM! error on Main! Event disabled	16:17:46	00:00:16	TOPFWHWR0202	Discover Run	
	Invalid Media Segment		TOPFWHWR0202	has Invalid Media Segment! error on Backup! Event disabled	16:17:46	00:00:16	TOPFWHWR0202	Bumper Quiet Stop	
	Invalid Media Segment		TOPFWHWR0202	has Invalid Media Segment! error on Main! Event disabled	16:17:46	00:00:16	TOPFWHWR0202	Bumper Quiet Stop	
	Invalid Media Segment		TOPFWHWR0202	has Invalid Media Segment error on Backup!	16:17:46	00:00:16	TOPFWHWR0202	Bumper Quiet Stop	
	Invalid Media Segment		TOPFWHWR0202	has Invalid Media Segment error on Main!	16:17:46	00:00:16	TOPFWHWR0202	Bumper Quiet Stop	
	Missing Media		TOPFWHWR0202	has Missing Media error on Backup!	16:17:46	00:00:16	TOPFWHWR0202	Bumper Quiet Stop	
	Missing Media		TOPFWHWR0202	has Missing Media error on Main!	16:17:46	00:00:16	TOPFWHWR0202	Bumper Quiet Stop	

System Exception Monitor

Gives a consolidated view of system errors which are detected across all or selected Marina systems, such as: *node health, host RAM, database health, changeover status, server capacity, transfer queue size*

Playlist Validation Summary

Delivers an interactive live view of all errors from all channels – or only those channels which have errors – within a single Marina system.



Playout
Management

Channel Viewer

Gives the user a monitoring read-only grid view of a Marina playlist, without edit or control privileges. The Lighthouse view is independent from the Marina view, even though they can look simultaneously at the same playlist.

Automation Stats

Each stat provides a specific counter or timer, with the ability to look across multiple channels and systems. Examples include: *Missing Media Count*, *Next Missing*, *Next Live*, *Next Live Duration*

Channel Controller												
	Branch Summary	Properties Summary		Status Sum.	Child Summary	Estimated E.	Start of Med.	Duration	Title	Transition	Rate	State
1	TX0023103 scale 00:00:00	clip01	soak 00:00:00	00:00:00:00	13:18:44	00:00:00:00	00:05:04:15	Bumper End	Terminator 2 - Judgement Day P1	T Cut	Fast	Running
2	Page01	clip01	soak 00:00:00	00:00:00:00	13:40:44	00:00:00:00	00:00:30:00	Boots Out Smokingtie	Boots Vitamins	T Cut	Fast	Done
3	TCPSPPE000300 scale 00:00:00	TCPFWH-B2020	soak 00:00:00	00:00:00:00	13:41:14	00:00:00:00	00:12:30:00	Morning magazine part 1	COKE Special	T Cut	Fast	Validation failed
4	Live	clip01	soak 00:00:00	00:12:26:00	13:41:14	00:00:00:00	00:00:20:00	Downstream trigger 7	Discount Furniture Store	T Cut	Fast	Cued
5	PageXX	clip01	soak 00:00:00	00:12:26:00	13:53:44	00:00:00:00	00:00:30:00	Marks and Spencer	COKE Special	T Cut	Fast	Allocating Device
6	TCPSPPE000300 scale 00:00:00	TCPFWH-B40910	soak 00:00:00	00:00:00:00	13:54:14	00:00:00:00	00:00:10:00	COKE Special	Discount Furniture Store	T Cut	Fast	Allocating Stream
7	TCPFWH-B2020	soak 00:00:00	00:00:00:00	00:00:05:00	13:54:14	00:00:00:00	00:00:20:00	Morning magazine part 2	Downstream trigger 7	T Cut	Fast	Allocating Stream
8	Comment: Don't forget to check the segment durations on this break, thanks	clip01	soak 00:00:00	00:00:00:00	13:54:26	00:00:00:00	00:00:24:00	Bumper start	Downstream trigger 7	T Cut	Fast	Allocating Stream
9	Live	clip01	soak 00:00:00	00:00:00:00	13:54:26	00:00:00:00	00:08:45:00	Morning magazine part 2	Downstream trigger 7	T Cut	Medium	Cued
10	studio 1	clip01	soak 00:00:00	00:00:00:00	13:54:26	00:00:00:00	00:00:00:00	Downstream trigger 7	Downstream trigger 7	T Cut	Fast	Allocating Stream
11	4:3 logo	clip01	soak 00:00:00	00:00:00:00	13:54:26	00:00:00:00	00:08:45:00	Downstream trigger 7	Downstream trigger 7	T Cut	Fast	Validation failed

Channel Controller

Channel Controller
Offers simple editing tasks and playlist manipulation for a specified channel. When a playlist is being controlled through Lighthouse, an indication is shown in the Marina client playlist UI. Exclusive edit mode privileges in Marina are honored by Lighthouse. Examples of control functions include: *load / append / save a schedule, cue / play / skip events, metadata edit*

Channel Timeline

Channel Timeline
Provides a view of one or multiple playout timelines across multiple channels, and spanning multiple systems. Event metadata and validation status is displayed in a dynamic scrolling bar view, which shows primary and secondary events.



Stream Viewer

Stream Viewer
Displays a configurable selection of IP streaming outputs from Dolphin integrated channel devices under Marina control. These may be geographically separate, and each stream can be labelled by the user for ease of identification.



Content Management

Automation Job Viewer

Gives a read-only view of Marina automation jobs, displaying transfers and deletions in a dynamic-update grid with sort and filter controls.

Browse Markup

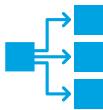
Enables the operator to stream video from storage. Player features simple transport controls, allowing them to review a clip and create or edit segment data.

Marina Media View

Offers a read only view of all the media within a selected Marina system, including Dolphin media. Multiple Widgets can be used to look at the databases across multiple systems.

Playlist Cache Viewer

Delivers a view of DB-cached playlists across multiple systems, highlighting missing media to help users manage advanced media transfers.



Resource Management

Ingest Timeline

Gives a compact timeline view of planned ingest jobs across one or many Marina systems, offering the ability to edit ingest start times and durations with an intuitive drag and drop interface. Shows dynamic allocation of ingest resources to each ingest job and displays any conflicts.

Encoder Timeline

Displays an encoder-centric timeline view across one or many Marina systems,

indicating the dynamic allocation of ingest jobs to specific encoder resources.

Conflict Viewer

Highlights ingest resource scheduling conflicts, where more ingests are scheduled than can be achieved with the encoder resources available. Enables the operator to identify and deal with conflicts as early as possible by displaying each issue in a prioritised list.



Channel Orchestration

Lighthouse offers a series of interfaces which deliver configuration and deployment functionality for Dolphin and Orca integrated channels, including:

Channel Designer

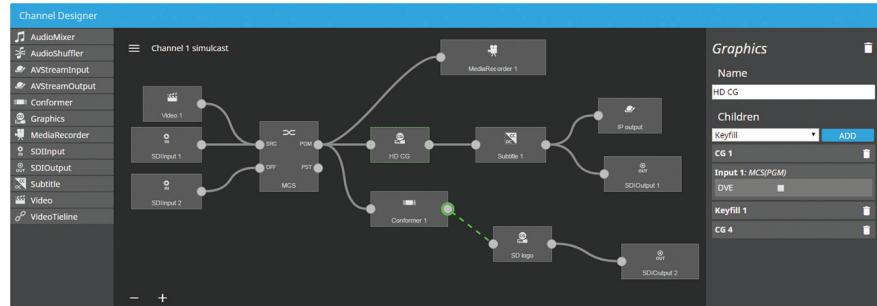
Offers offline editing of Dolphin and Orca pipelines, and enables the end user to

create and edit templates for different types of software-defined channels using drag and drop graphical tools. The Channel Designer is aware of what components are available on your system and will prevent you making invalid selections.

Channel Launcher

Channels are simply and quickly launched by first selecting a channel template. The operator then selects the Marina system to control the channel, chooses the host

(Bare Metal or Virtual Machine), and specifies whether to launch the channel immediately or defer the launch to a later time. It also handles removal of channels to free up resources.



Channel Launcher

Channels are simply and quickly launched by first selecting a channel template. The operator then selects the Marina system to control the channel, chooses the host

Channel	Marina System	Marina Node	Host	Host IP	Stream	State	Actions	Delete
ABC44	Marina (SYSTEM1)	13	WIN-PC9ABMNGSQ	10.1.31.206	Stream Unhealthy	Stopped		
test	Marina (SYSTEM2)	10	WIN-PC9ABMNGSQ	10.1.18.63	Stream Unhealthy	Unhealthy		
Channel 1	Marina (SYSTEM2)	11	WIN-PC9ABMNGSQ	10.1.18.69	OK	Started		



Security

Lighthouse delivers secure remote access outside the automation LAN:

- Full HTTPS support with TLS encryption, both Marina to web server and web server to browser.
- Protection against brute-force password and username attacks.
- Secure password hashing.
- All communication between Marina and Lighthouse uses a proprietary API so

that all actions are validated – there is no communication between Lighthouse and the Marina database.

- Marina can be configured to refuse all actions over the Lighthouse API Interface, so that only monitoring is possible.
- Granular administrative permission control for users and groups, including separate view and edit rights for each Widget.



Deployment

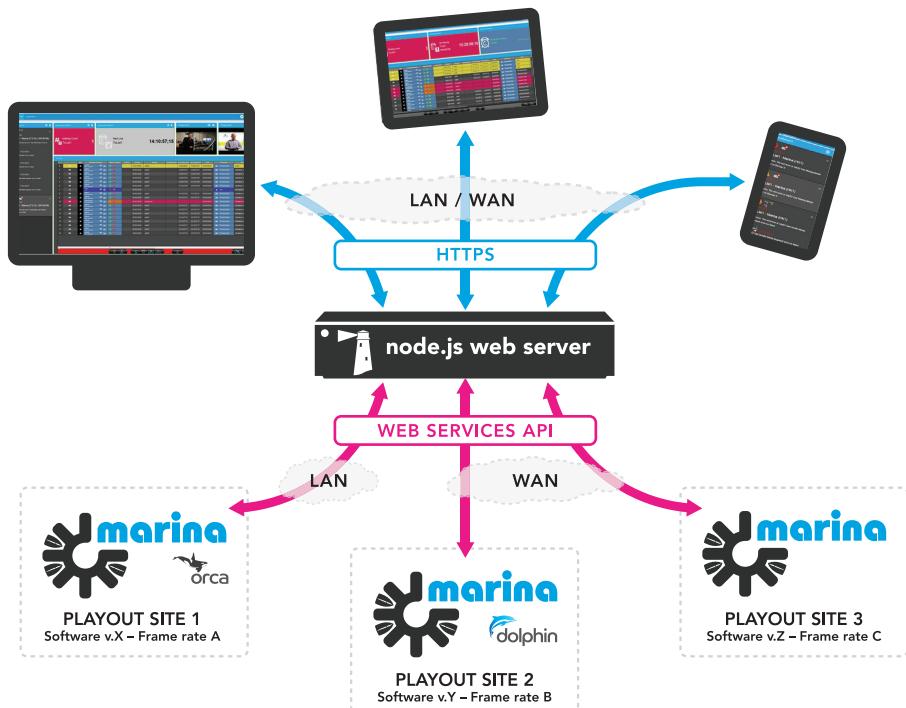
Lighthouse is deployed as a node.js webserver on a Linux operating system. Using Docker software containers and Rancher container orchestration, n+m redundancy and load balancing is offered in a highly scalable and easy-to-manage architecture. Pebble can provide host

hardware, however many users prefer to deploy COTS server hardware, or implement Lighthouse as part of a virtualised infrastructure.

Lighthouse complements the functionality of the Marina client, adding:

- Remote access both inside and outside the broadcast facility.

- Aggregated monitoring tools.
- Channel visibility across multiple platforms.



For more information contact sales@pebble.tv
or visit www.pebble.tv

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