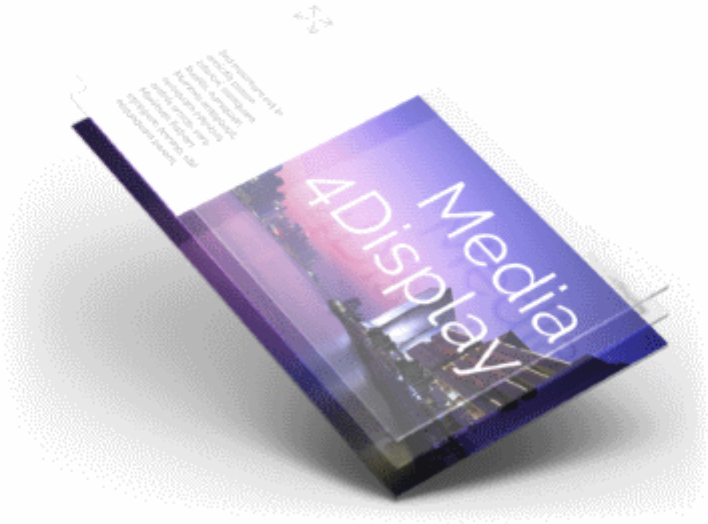
Media4Display

DIGITAL SIGNAGE SOFTWARE



Installation Prerequisites

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Chapter 1. Technical infrastructure

1.1. Prerequisites and sizing

1.1.1. Assessment of the fleet and constraints

- How many players must the platform manage?
- How many connections per day and per player?
- What time slots are designated for these communications (24hr/day, 8:00 pm/6:00 am, etc.)?
- What is the average volume of data transferred during each communication?
- What available bandwidth is used to connect the server and the players?

1.1.2. Assessment of the database size

Definitions and settings take up a minimal amount of space in the database. Logs and search results require a large amount of space.

- Execution of a player process = 20 KB
- Assessment of the maximum database size for a process per day and per player:
    - For 4,000 players and 30-day history log:

      Size = 20 KB * 4,000 * 30 * 1 process = 2.4 GB

1.1.3. Assessment of the required bandwidth or number of simultaneous connections

The number of simultaneous connections between the server and the players can be adjusted in Media4Display. This number must be set between 1 and 1,024, based on the available bandwidth. The number of simultaneous connections and the bandwidth are affected by the average volume of data to be transferred during a communication and the time slot for device connections.

Example: One 50 Mb data transfer from the server to a client with a download transfer rate of 512 Kb/s (ADSL). Communication time required to synchronize all players:

Central transfer rate (headquarters)	50 players	100 players	500 players	1,000 players	5,000 players
10 Mbit/s (20 simultaneous connections)	0:45	1:15	5:45	11:15	55:45
100 Mbit/s (200 simultaneous connections)	0:15	0:15	0:45	1:15	5:45

1.1.4. Prerequisites for the Media4Display Server

Media4Display relies on a Telelogos component called MediaContact. This is the core of the system that controls process executions and manages communication dispatching between the communication servers. This is the core of the system that controls process executions and manages communication dispatching between the communication servers. It executes processes and instantiates communication

servers. It receives incoming communication calls and, based on the workload of the communication servers, selects which one will be connected to the calling player.

MediaContact requirements:

- An Intel-compatible dual core 2.0 GHz processor (minimum)
- Microsoft Windows Server 2016, Microsoft Windows Server 2012, Microsoft Windows Server 2008 SP2, Microsoft Windows Server 2008 R2 SP1, 32-bit or 64-bit
- 4 GB RAM minimum
- 5 GB of free disk space to install the software and database files
- The number of players that connect to the server will determine the SQL Server version:
    - You can use an SQL Server 2017 Express Edition license for up to 500 players. This license is included in MediaContact at no additional charge.
    - We recommend an SQL Server 2008 Standard Edition or higher for more than 500 players. We recommend core-based licenses.

Media4Display requirements:

- MediaContact Server V 6.5.0 or higher
- If the players communicate in HTTP mode, MediaContact Web Services 6.5.0 or higher (as well as MediaContact Web Console 6.5.0 for Tizen players or players with a version lower than 4.4.0)
- Microsoft .Net Framework 4.5.2 for Windows Server 2008, by default installed with Windows Server 2012 and 2016)
- IIS 10, IIS 8 or IIS 7
- Windows Media Player
- Microsoft Internet Explorer 9 or higher
- Adobe Flash Player add-on version 9.0 or higher for Internet Explorer (on Windows Server 2012, Adobe Flash Player is installed by a dedicated function)
- Microsoft PowerPoint 2010 or higher with the shared "Visual Basic for Applications" Office component (if broadcasting PowerPoint presentations)
- connection to the Internet to be able to use the player mapping function
- connection to the Internet to be able to activate the license for iSpring for converting PowerPoint presentations into Flash (if PowerPoint presentations are broadcast in Flash mode)

If connection to the Media4Display console is managed using Active Directory for authentication, a domain account must be entered for the purpose of configuring the service and components of the MediaContact Server when it is installed.

If connection to the Media4Display console is managed using LDAP for authentication, an account that has access to the LDAP server must be entered for the purpose of configuring the service and components of the MediaContact Server when it is installed.

1.1.5. Prerequisites for the MediaContact communication server

The MediaContact communication server will manage communications with remote devices. It can manage anywhere from 1 to 256 simultaneous communications. The maximum number of communication servers is 4. By default, a communication server is installed on the MediaContact server.

MediaContact communication server requirements:

- An Intel-compatible dual core 2.0 GHz processor (minimum)
- if the server will be managing more than 128 simultaneous connections: an Intel-compatible quad core processor 2.0 GHz minimum
- Microsoft Windows Server 2016, Microsoft Windows Server 2012, Microsoft Windows Server 2008 SP2, Microsoft Windows Server 2008 R2 SP1, 32-bit or 64-bit
- 2 GB of RAM
- 20 MB of disk space to install the software files

1.1.6. Prerequisites for the MediaContact communication gateway

The MediaContact communication server will manage communications with remote devices. It can manage anywhere from 1 to 1,024 simultaneous communications. The gateway is typically installed in a DMZ.

MediaContact gateway requirements:

- An Intel-compatible dual core 2.0 GHz processor (minimum)
- if the server will be managing more than 256 simultaneous connections: an Intel-compatible quad core processor 2.0 GHz minimum
- Microsoft Windows Server 2016, Microsoft Windows Server 2012, Microsoft Windows Server 2008 SP2, Microsoft Windows Server 2008 R2 SP1, 32-bit or 64-bit
- 2 GB of RAM
- 20 MB of disk space to install the software files

1.1.7. Prerequisites for the Media4Display console

The Media4Display Web console works with the following browsers:

- Microsoft Internet Explorer 9 or higher (MS Windows)
- Microsoft Edge
- Mozilla Firefox (MS Windows)
- Google Chrome (MS Windows)

JavaScript must be activated.

To be able to use the player mapping function, the console must have a connection to the Internet.

1.1.8. Prerequisites for the Media4Display Windows player

The Media4Display Windows player can manage up to 4 displays with different feeds. The following minimum configurations are required. They may vary depending on the media being broadcast.

Media4Display Windows player requirements:

- Windows 10, Windows 10 IoT Enterprise LTSB, Windows 8.x (except RT version), Microsoft Windows 8.x Embedded, Microsoft Windows 7 SP1, Microsoft Windows 7 SP1 Embedded, 32-bit or 64-bit

- RAM: 2 GB minimum
- Disk space: 150 Mb minimum for installing software files, as well as necessary disk space to store media
- Internet Explorer 9 or higher
- Windows Media Player 10 or higher
- ActiveX Adobe Flash Player 9 or higher (if broadcasting Flash or PowerPoint presentations in Flash mode)
- Video codecs (if broadcasting videos)
- "32-bit Elecard MPEG-2 PlugIn for WMP" (if broadcasting streamed IP using the unicast or multicast UDP protocol)
- DVB-T (TNT) with AVerMedia AVerTV Volar HD 2 USB flash drive (if broadcast using DVB-T protocol)
- Microsoft .Net Framework 2.0 (if using M4DExchange2010API.exe connector)
- MediaContact Client V 6.5.0 or higher
- DirectX 9.0c compatible graphics card, dedicated or integrated
- Intel-compatible dual core 2.0 GHz processor (minimum)
- Bios option: automatic restart should a power loss occur

Each version of Windows Embedded is different. Certain components can be added to the Windows Embedded version that make the digital signage software completely compatible with the operating system. Users should establish a probative period to verify that all media are being broadcast correctly with the Media4Display software.

Recommended PassMark PerformanceTest scores for Full HD 2K 1080p broadcasting:

- CPU Performance: 2000
- 3D Performance: 400

1.1.9. Prerequisites for the Media4Display Android player

The Media4Display Android player accepts a single feed. It requires:

- Android 4.4 (Kit Kat) to 8.1 (Oreo)
- RAM: 2 GB minimum
- ARM Processor
- Updated "Android System Webview" plugin for using widgets
- MediaContact Client V 6.5.0 or higher
- To use the standby function the hardware must be compatible

Recommended PassMark PerformanceTest scores for Full HD 2K 1080p broadcasting:

- CPU Performance: 6000
- 3D Performance: 800

1.1.10. Prerequisites for the Media4Display Tizen player

The Media4Display Tizen player accepts a single feed and communicates in HTTP mode only. It requires:

- Samsung display model: PMF
    - Samsung Smart Signage Platform (SSSP) 4.0 Tizen 2.4
    - Validated Firmware: 2070
- Samsung display model: DBJ
    - Samsung Smart Signage Platform (SSSP) 5.0 Tizen 3.0
    - Validated Firmware: 2010

1.1.11. Prerequisites for the Media4Display Windows previewer

The previewer allows you to preview slides and sequences directly on the user's station executing Media4Display console. It is installed on the user's station. Prerequisites are the same as for a Windows player except that MediaContact Client is not required.

1.1.12. Installing Media4Display server in a virtual environment

The Media4Display server runs on VMware and Microsoft Hyper V virtual environments. VMware and Hyper V are regularly used to facilitate support and testing operations. All Media4Display features are supported.

The player does not run on VMware, Microsoft Virtual Server and Microsoft Hyper V virtual environments.

1.1.13. Feed matrix

The MediaContact server must be accessible over the network to which the players will connect. The players communicate with the server through either a public or a private IP address.

The Media4Display console must be accessible over the network to which the users will connect. The user workstations communicate with the server through either a public or a private IP address.

One or more firewall configurations are necessary to enable different traffic:

Source	Port	Destination	Port	Protocol	Transport
TCP Synchronization on the server's initiative					
Server	1024-65535	Player	1210	Proprietary	TCP
TCP Synchronization on the player's initiative					
Player	1024-65535	Server	1300, 1310	Proprietary	TCP
TCP Synchronization on the player's initiative (TLS/SSL)					
Player	1024-65535	Server	1301, 1311	Proprietary	TCP
HTTP Synchronization on the player's initiative					
Player	1024-65535	Server	80	HTTP	TCP
HTTPS Synchronization on the player's initiative					

Source	Port	Destination	Port	Protocol	Transport
Player	1024-65535	Server	443	HTTPS	TCP
MediaContact Administration Console					
User workstation	1024-65535	Server	1315, 1325	Proprietary	TCP
Media4Display Console in HTTP					
User workstation	1024-65535	Server	80	HTTP	TCP
Media4Display Console in HTTPS					
User workstation	1024-65535	Server	443	HTTPS	TCP
Media4Display Console - Calculating GPS coordinates from a postal address					
User workstation	1024-65535	nominatim.openstreetmap.org	443	HTTPS	TCP
Media4Display Console - Displaying the map					
User workstation	1024-65535	a.tile.openstreetmap.org b.tile.openstreetmap.org c.tile.openstreetmap.org	443	HTTPS	TCP

To use widgets, you need to make an additional configuration:

Source	Port	Destination	Port	Protocol	Transport
Meeting4Display Widget					
Player and User workstation	1024-65535	Meeting4Display Server	443	HTTPS	TCP
Twitter widget					
Player and User workstation	1024-65535	*.twitter.com *.twimg.com	443	HTTPS	TCP
YouTube widget					
Player and User workstation	1024-65535	www.youtube.com *.googlevideo.com	443	HTTPS	TCP
Facebook Widget					
Player and User workstation	1024-65535	www.facebook.com	443	HTTPS	TCP
Weather widget					
Player and User workstation	1024-65535	api.openweathermap.org	443	HTTPS	TCP

1.1.14. Example configurations

Recommended configurations:

Components	Central transfer rate (headquarters)	100 players	500 players	1,000 players	5,000 players
MediaContact Server	Processor	Intel-compatible dual core 2.0 GHz	Intel-compatible dual core 2.0 GHz	Intel-compatible quad core 3.0 GHz	Intel-compatible octo core 3.0 GHz
	Memory	4 GB	4 GB	8 GB	8 GB
	No. of connections	10	50	100	250

Components	Central transfer rate (headquarters)	100 players	500 players	1,000 players	5,000 players
MediaContact communication server	Processor				Intel-compatible quad core 3.0 GHz
	Memory				4 GB
	No. of connections				250
MediaContact gateway	Processor	Intel-compatible dual core 2.0 GHz	Intel-compatible dual core 2.0 GHz	Intel-compatible quad core 3.0 GHz	Intel-compatible quad core 3.0 GHz
	Memory	2 GB	2 GB	4 GB	4 GB
	No. of connections	10	50	100	500