ALIVE DISPLAYS

BRINGING YOUR DATA TO LIFE

Technical Overview
of
Smart Digital Displays

Revision 2.0

March 2015

In partnership with

NET DISPLAY
SYSTEMS

Alive Displays enables you to display your choice of information in real-time, on any screen, to any part of your organisation. Our Smart Digital Display technology makes your information visible and actionable to the right people, in the right location, at the right time. Whether the data comes from the production line, the warehouse, the call centre or the HR department, Alive Displays helps you to communicate efficiently and effectively across your business.

Read data directly from SQL, Oracle® and MS Access® databases, display content from MS Excel® or PowerPoint®, extract content from websites and social media – our Smart Digital Display technology manages it all... and in real-time. Our systems are secure and will integrate seamlessly into your current network.

Communicate efficiently across your business:
- Connect to your production data and show key performance indicators in real-time
- Present KPI dashboards to motivate staff and drive productivity
- Visualise your data in any location, from the boardroom to the production line, from the café to the concourse
- Display your quality results and pro-actively inform your staff
- Promote safety awareness and emphasise corporate objectives, in multiple languages

Visualise your data:

A fundamental principle of lean manufacturing is the concept of continuous product and process improvement and the elimination of waste. Highlighting losses in real-time has been proven to change behaviours, improving throughput, quality and overall profitability.

About us:

Alive Displays is an engineering-led company with over 25 years of experience in manufacturing. We have a deep understanding of production processes and the right range of skills and expertise to ensure that clients' needs are successfully met.
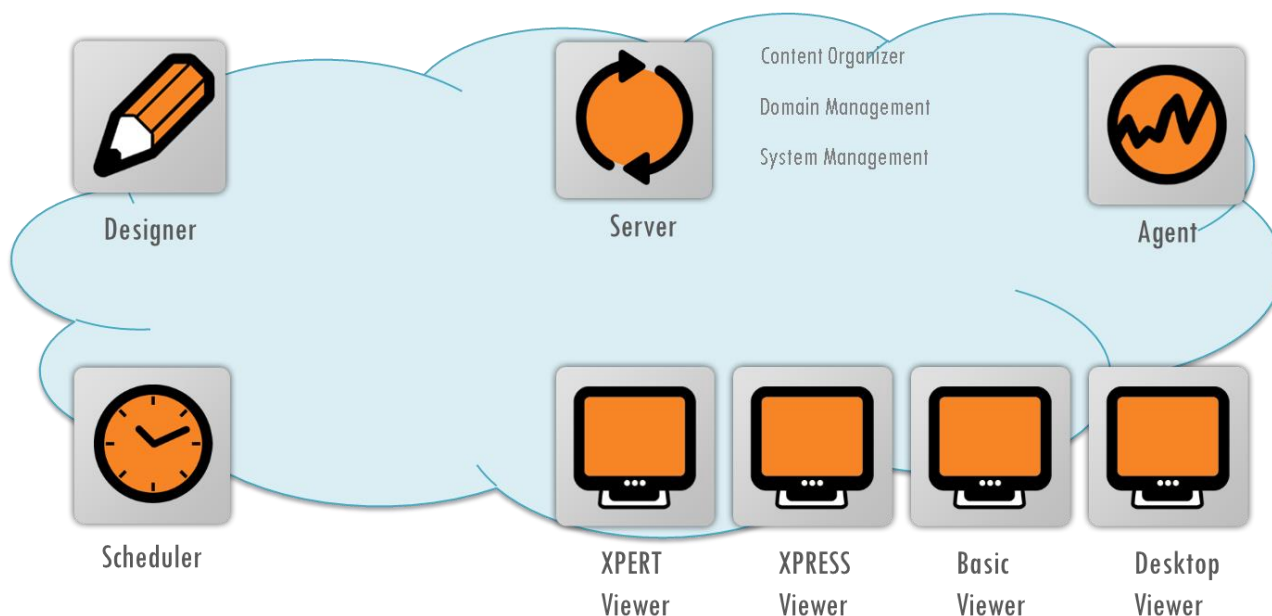
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1   PADS - Introduction

PADS is a high-end digital signage software package. Based on more than 20 years of experience in the field, it has become known worldwide as one of the most complete solutions for targeted display communication.

Whether you require a simple welcome message on a single screen or real-time production information on hundreds of displays, PADS can do it all, easily and reliably.

The PADS (Public Area Display System) software covers all aspects of a digital signage:

- Design
- Schedule
- Distribution
- Display (with interactivity if required)

Designer: Is used to make screen templates, similar to PowerPoint, but much more advanced. The Designer requires one license per user account.

Scheduler: Is used to schedule the screen templates to a screen or group of screens

Agent: Is used to monitor and control the system. It can generate automatic e-mails upon failure, record system logs, manage fonts etc.

Both Scheduler and Agent can be installed on an unlimited number of PC's and be simultaneously used by the amount of (concurrent) user licenses.

Viewer: Application that collects the content and shows it on the display. The client needs to run on every controller/pc connected to a screen. PADS has several types of Viewers allowing the end-user to purchase a license that fulfils the communication demand only and not pay for features that are not of interest. Upgrading to a more feature rich Viewer is always possible.
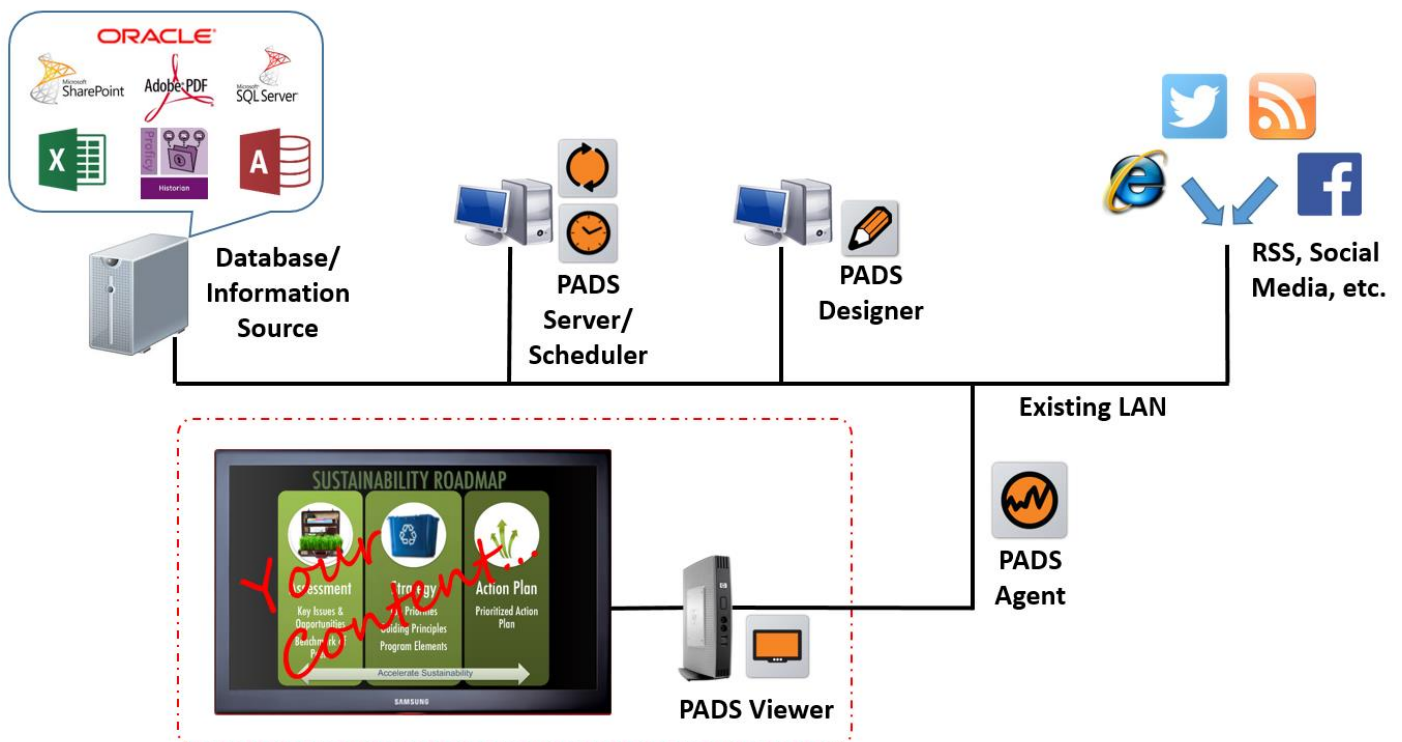
Server: Handles all scheduling, content distribution, etc.

Content Organizer: Used to manage the content, set filters and manage access per user.
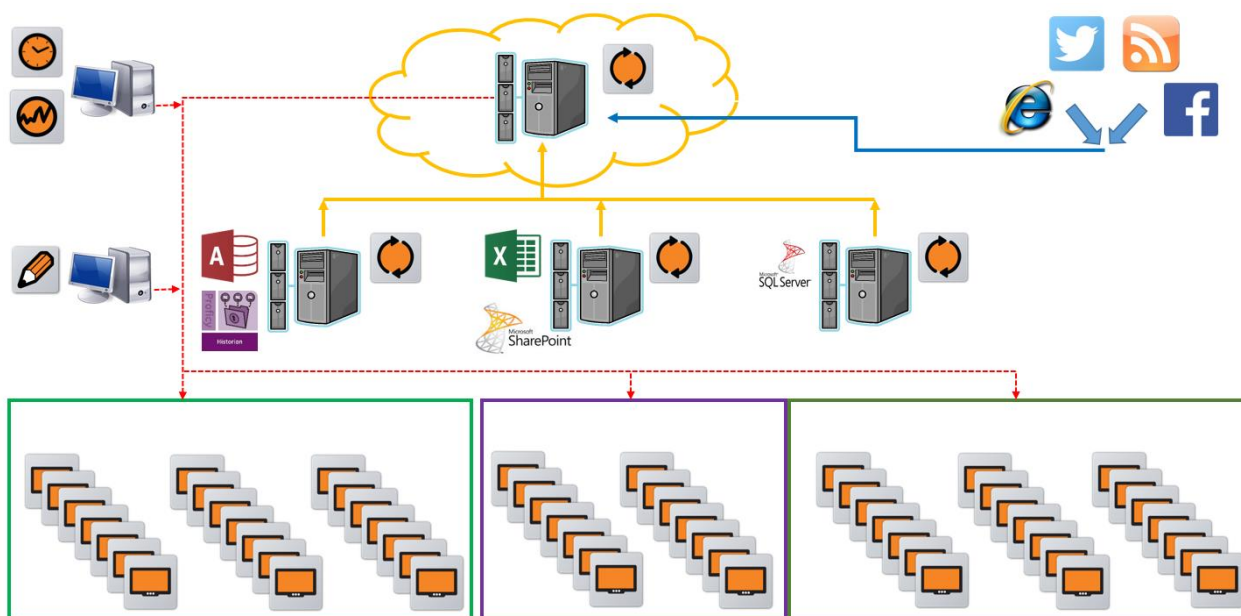
Domain Management: Used to manage several PADS servers for the different clients on the same piece of hardware, creating fully separated environments.

System Management: Used to set the Priorities of Scheduling, Program Access per user, manages the licenses.

A typical installation may look like this:

Across multiple locations, the network architecture may look like this:
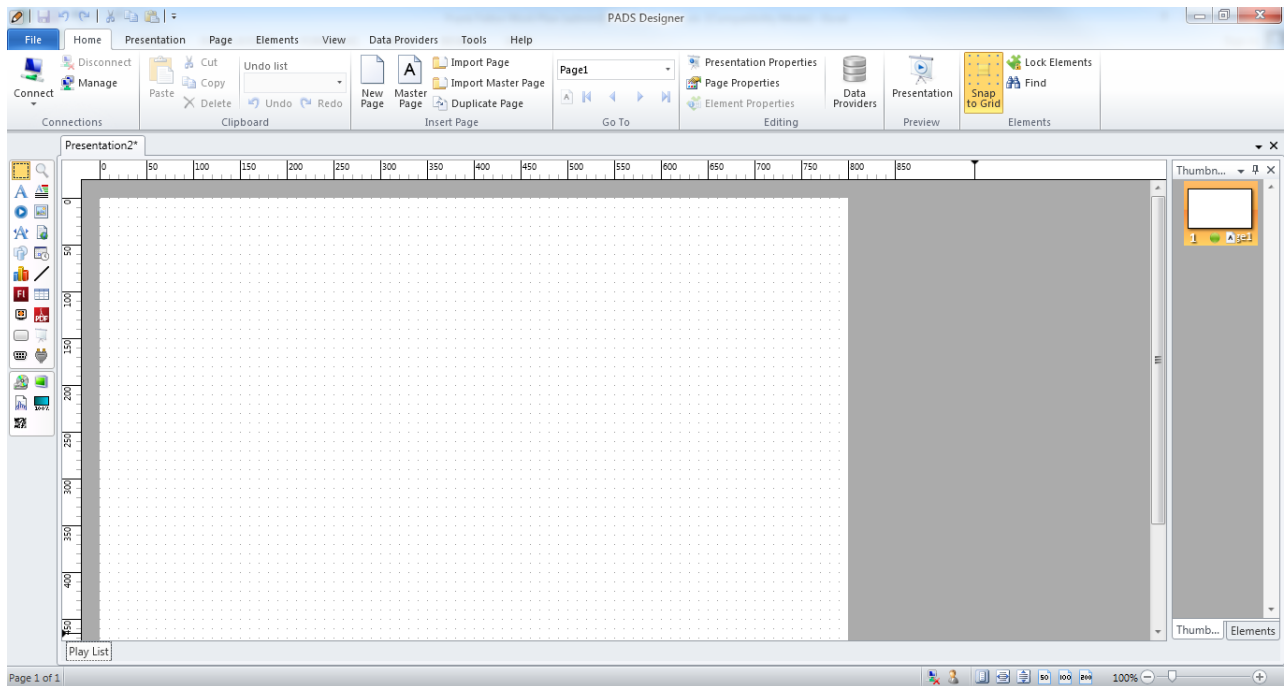

1.1 Design

The PADS software enables you to create presentations with any type of content. From PowerPoint presentations, YouTube videos, to the very latest Macromedia Flash content, live TV, ticker tapes linked to RSS feeds and internet pages. These are just a small selection of the large amount of content that PADS supports. If your desired element is not present, you can even add it as an Add-on.

One of the most powerful aspects of PADS is that you can include real-time data in your presentations, from almost any data source. With some simple mouse clicks, you can bind your presentation to your corporate database and automatically the PADS system will always display up-to-date information. This database connection can be simply enhanced using rules, to determine what content should be displayed and how it should look.

With the built-in database connectivity features you can easily link real-time data from Microsoft Excel, Microsoft Exchange, your own CMS or any other database, to your presentation. Through dynamic rules, you can determine exactly what content should be shown and under what conditions. The PADS Content Library with automatic synchronisation ensures that all users share the same pictures, videos and any other content.

Key features

- Designing presentations with almost ANY content
- Large collection of page elements
- Master pages for a consistent layout
- Database connections for displaying real-time data
- Dynamic rules for condition-based displaying
- Support of interactive presentations

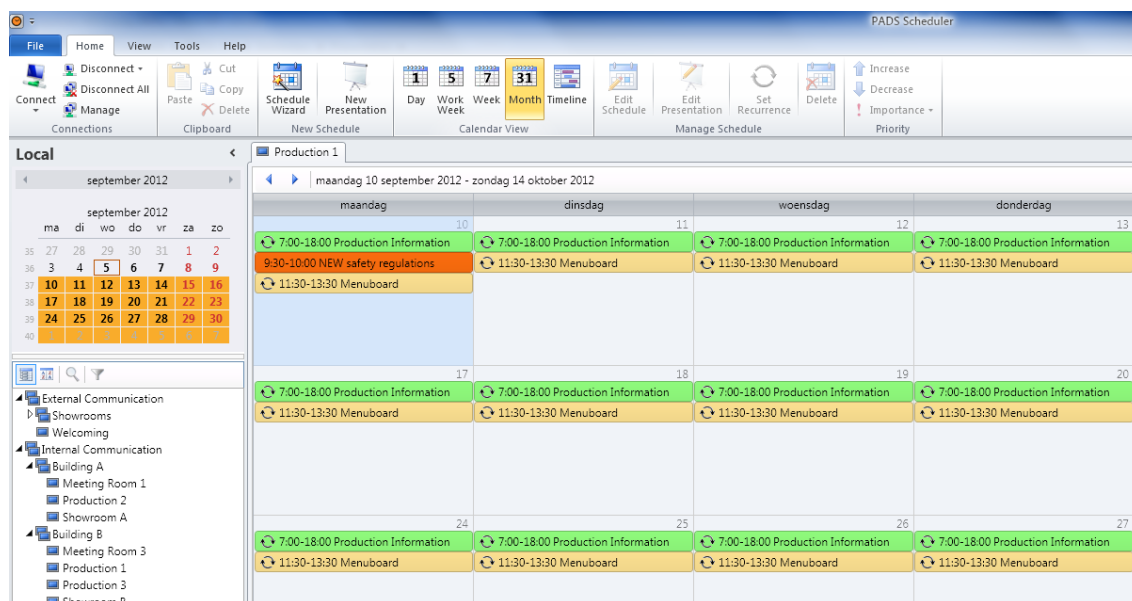*PADS Designer interface with MS Office look and feel*

1.2 Schedule

With PADS you are free to decide where and when you want your data to be displayed. Presentations can be scheduled once or with a particular recurrence for individual displays. Presentations can also be scheduled at once, for an entire group of displays. Presentations can be arranged to play, based on their priority level (e.g. fire alarm message). At any time you can adjust the schedule or content of your presentation within a few seconds, even if it is currently playing. With PADS Scheduler you will always retain full control of your scheduled presentation.

Through role-based permissions PADS Scheduler allows you to grant groups of user's access to a subset of displays or a zone on the screen. The main user will always maintain full control.

Key features

- Easy scheduling of presentations
- Comprehensive features for recurring schedules
- Unlimited grouping of displays
- Priority based scheduling
- Make live changes to schedules or content
- Role-based access to displays or zones

Example of PADS scheduler

1.3 Distribution

The PADS system automatically handles the distribution of the scheduled presentations to the displays, without limitations. Presentations can be distributed over your LAN, WAN, Intranet or the Internet. Wireless connections are also supported. Aside from the presentation itself, the system can also automatically distribute the content files that are related to the presentation (like pictures, videos, etc.).

When the presentation needs to display real-time information, the PADS system will also take care of collecting the actual data from the specified data source and distribute it automatically to the displays.

1.4 Viewer and multiple form factor displays

The PADS Viewer application is available for multiple platforms and in different variants. This allows you to choose the most suitable viewer type in terms of functionality and pricing for your digital signage network. For maximum functionality choose the Microsoft Windows based PADS Viewer or choose the PADS HTML5 Viewer for a cost-effective solution that runs on multiple platforms. Bring digital signage to desktop PCs, with the PADS Desktop Viewer.

Choose the PADS Viewer license that offers the features you need. Licenses can be updated at a later date, without having to reinstall the PADS software. Depending on the type of content you want to play, you can choose between a BASIC, XPRESS or XPERT Viewer licenses.

Professional displays such as the LG with WebOS and Samsung with SSP2 are supported by the PADS software. Consumer (TV) screens can be used, but it is not recommended to use their browser function as they don't have the ability to automatically start-up in the browser. However, these basic screens cannot be part of the LDAP or cannot be integrated with Management Platforms (without having a PC connected).

PADS supports 4K resolution for Ultra HD displays, video walls and even a LED wall with a custom resolution. The presentations can be designed for a specific resolution to get the best quality or automatic scaling can be selected, for optimal flexibility. The zoom features of PADS Designer ensure that you can design for any resolution with ease.

Windows Tablets are fully supported. The HTML5 Viewer can run within Chrome on IOS or Android tablets but with limited functionality.

The PADS HTML5 Viewer is a platform-independent player and can be a cost-effective signage solution, for specific applications. The intelligent Viewer software uses local caching, instead of streaming, to ensure your presentation will continue to play, even when the network connection is lost.

PADS Viewer Key features:

- Any display, any resolution: PADS Viewer supports displays of any size or resolution. Use a standard display in landscape or portrait mode, an Ultra HD display with a 4K resolution or even a video wall to play your content. Optionally, add interactivity to your presentation to run it on touch screens.

- PADS HTML5 Viewer: PADS HTML5 Viewer offers a unique, platform-independent player for a cost-effective signage solution. Ideal for Android or Linux based player devices.
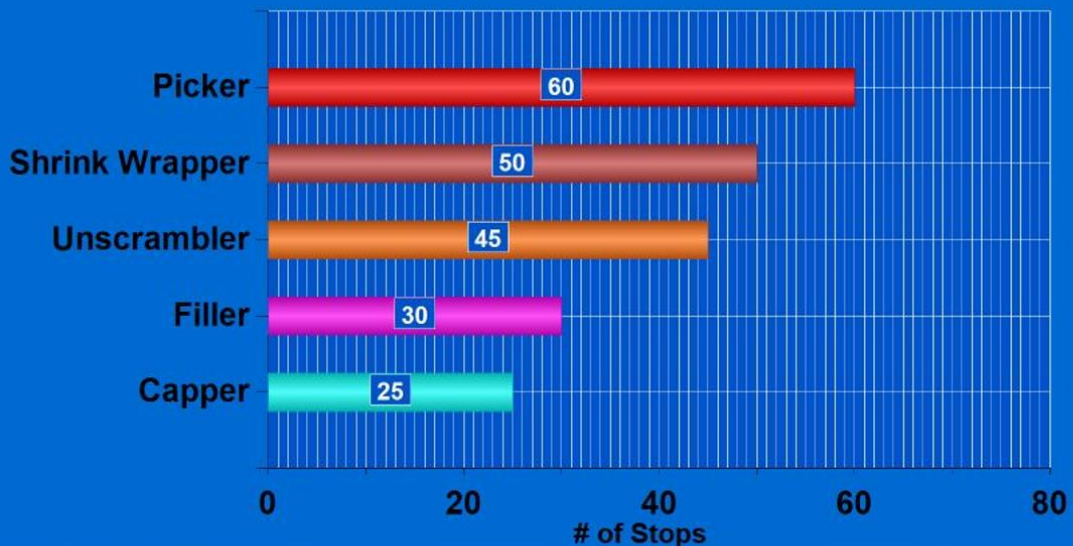
Key features

- Playback of scheduled presentations
- View at real size or resolution independent
- Real-time insertion of dynamic content
- Local caching as fall-back to network failures
- Compatible with interactive touch screens
- Suitable for video walls
- Ability to dynamically connect to a different server, based on availability, providing a network with a 99% up-time.

We have included below some examples of real-time content being displayed on factory floors, using the Expert Viewer:

Example of live (within 5 sec) data from a historian database

Example of statistical data from a SQL database, displayed automatically for 10min at the start of each hour, as part of the Lean Manufacturing process

Example of presentation with live RSS feeds

Example of safety message

1.5 Desktop Viewers

With PADS Desktop Viewer you can extend your digital signage solution to the desktop PCs within your organisation. Whether its safety training, your corporate electronic newsletter or real-time information the PADS Desktop Viewer can streamline the entire internal communication within your organisation, passively through the PADS screensaver or actively with desktop alerts that instantly appear on the screen of your employees.

The PADS Desktop Viewer links up seamlessly with the other PADS applications so that the same content can be used for both PADS Viewers and Desktop Viewers.

Key features

- Provision of tailored content on your desktop
- Ideal tool for internal communication
- Informing employees by screen saver
- Alert function for instant messages
- Targeted information by group or per individual
- Seamlessly links up with other PADS applications

Viewer playback support:

Page element	Viewer types					
	XPERT	XPRESS	HTML5 XPRESS	BASIC	HTML5 BASIC	Desktop[2]
Text	✓	✓	✓	✓	✓	✓
Picture	✓	✓	✓	✓	✓	✓
Line	✓	✓	✓	✓	✓	✓
Shape	✓	✓	✓	✓	✓	✓
Formatted Text	✓	✓	✓	✓	✓	✓
Video/Sound	✓	✓	✓	✓	✓	✓
Interactive Button	✓	✓	✓	✓	✓[1]	✓
Web Page	✓	✓	✓	✗	✗	✓
Scrolling Text	✓	✓	✓	✗	✗	✓
Flash	✓	✓	✓[1]	✗	✗	✓
Table	✓	✓	✗	✗	✗	✓
PowerPoint	✓	✓	✗	✗	✗	✓
Rich Text	✓	✗	✗	✗	✗	✓
Presentation in page	✓	✗	✗	✗	✗	✓
Chart	✓	✗	✗	✗	✗	✓
PDF	✓	✗	✗	✗	✗	✓
RS-232	✓	✗	✗	✗	✗	✓
External Application	✓	✗	✗	✗	✗	✓
Zone Viewer	✓	✗	✗	✗	✗	✓
Television	✓	✗	✗	✗	✗	✗
Add-Ons	✓	✗	✗	✗	✗	✓

[1] The support of this element varies per device

[2] When PADS Desktop Viewer is used as screen saver it will run for a maximum of 4 hours after activation.
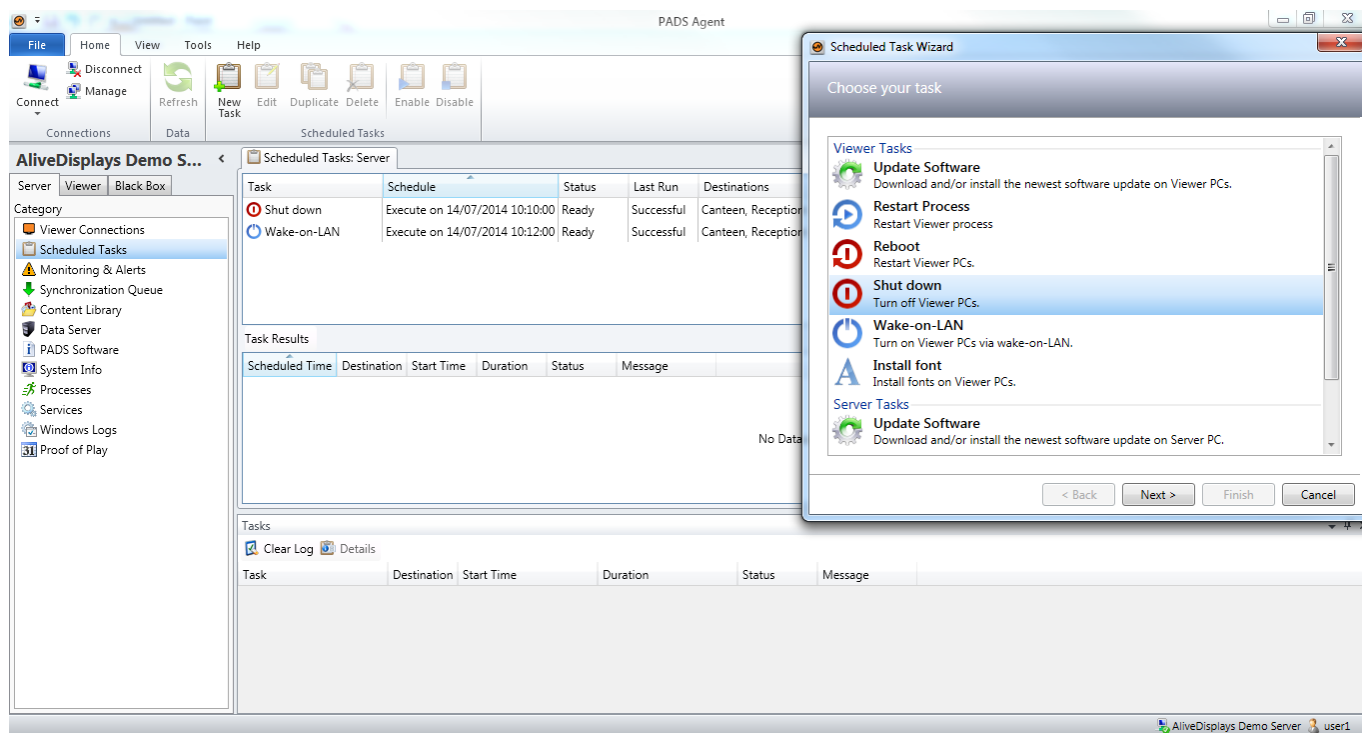
1.6 Agent

PADS Agent is an extremely powerful tool to remotely monitor and manage all the PADS Servers and PADS Viewers in your eco-system. The PADS Agent has many built-in features for real-time performance and system control. You can check the status of viewer connections, retrieve screenshots of individual viewers and have a live status overview of your PADS system. The PADS Agent offers fully automated software version control, ensuring you always run the latest software while significantly reducing your total cost of ownership.

Net Display Systems has embedded a unique black box feature in PADS Agent. By logging configuration and performance details, you have maximum traceability for auditing purposes and technical support, similar to black boxes in the aviation industry. The PADS Agent application is an essential tool if you want to stay informed about the operation of your digital signage system. In case of network failures you can be automatically notified by e-mail with full escalation processes. You can also remotely execute or schedule important tasks like the installation of new software updates or a reboot of a PC. PADS Agent saves system administrators valuable time in the provision of maintenance and support.

Key features

- Remote monitoring and management of your server and displays
- Unique black box feature for logging configuration and performance details
- Retrieval of valuable system information
- Automatic notification in case of failures
- Scheduling tasks for performing operations
- Central installation of software updates
- Billing of Display time

Example of PADS Agent

1.7 Server(s)

PADS Server ensures that your scheduled presentations are directed to the correct displays, regardless of where in the world they are. Using unique synchronisation technology, pictures, videos and other content files are distributed with a minimal network load. If your presentations contain real-time data then PADS Server can collect this information from various data sources and make it available to the connected displays.

For large installations across multiple locations you can use local PADS sub-Servers to further minimize the network load.

Key features

- Automatic distribution of scheduled presentations
- Targeted distribution of content files
- Automatic collection and distribution of real-time data
- Distribution over LAN, WAN, Intranet or Internet
- Minimum network load
- Secured communication via data encryption

1.8 SDK, Software Development Kit

The PADS Software Development Kit (SDK) offers the key functionality of PADS to software developers. This enables IT developers to develop custom solutions around the standard PADS product.

The PADS SDK is based on the standard Microsoft .NET development environment and can be used by any .NET developer familiar with VB or C#.

The SDK is a standard part of PADS4 and doesn't require a separate installation or license.

Key features

- Application Programming Interface (API) with key functionality of PADS
- Powerful tool to develop customized solutions
- Keeping all advantages of the standard PADS product
- Compatible with standard .NET programming languages
- Fully documented
- Sample projects including source code available

1.9 Data Connections and KPI's

Including live data from external sources into your presentation has never been easier. With a wizard and just a couple of mouse clicks you can link page elements to data providers such as RSS news feeds, a Microsoft Outlook Calendar or a local Microsoft Excel file. PADS can also integrate with any database such as SQL servers, historian data collectors and Oracle. PADS includes no less than 35 data providers, varying from a simple text file provider to generic database drivers, to ensure that there is always a solution to link to your data.
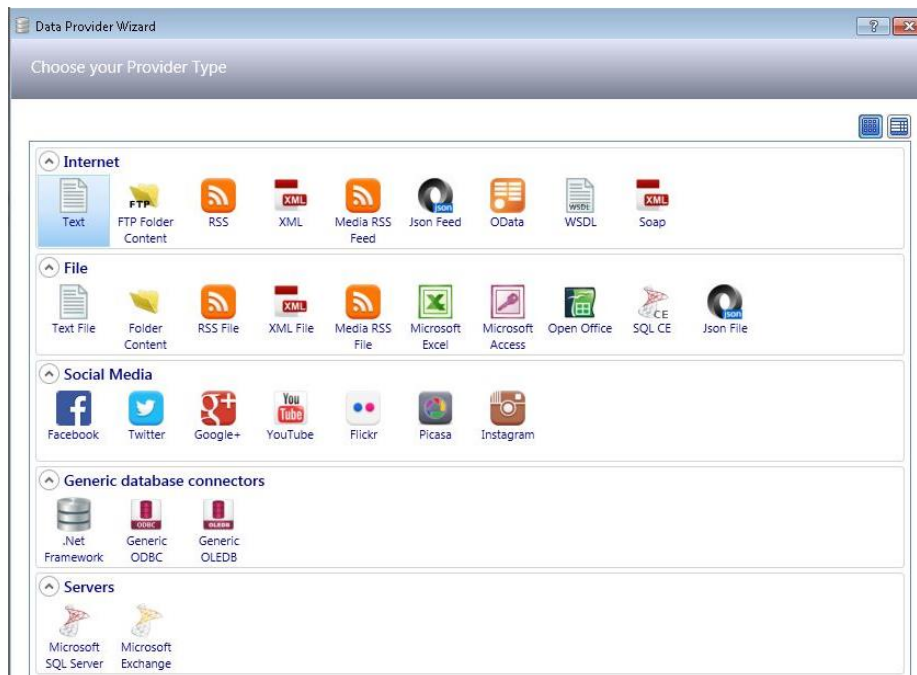
Image of the Data Provider Wizard

The PADS System is ideally suited to data visualisation of critical KPI's. Shape objects can be used to create traffic light style alerts, giving a live visual overview of the process. PADS can also create graphs in real time, from data linked to the presentation or simply change the colour of the text based on a critical value.

The KPI displays from various locations, can be combined in a central display, using the "presentation in a page" option.

1.10   PADS – System requirements

For a complete PADS configuration you need:

- A Server PC
- Scheduler/Designer/Agent PCs (optional)
- Displays with built-in or attached Viewer PC

PADS Server PC
PADS Server is the central point of the system. The requirements for the PADS Server PC are dependent on the size and usage of your installation. For large, mission critical systems we recommend the use of clustering technology with RAID facilities for the prime server and the possible use of sub-servers.

PADS Scheduler/Designer PC
The PADS Scheduler and Designer application can run either on the PADS Server PC or on a separate Desktop PC.

PADS Viewers PC
It is important that you use the right hardware to get the best performance from your PADS Viewer. In particular the choice of the video card plays a crucial role.

The recommended hardware requirements for an optimal use of PADS are as follows:

Item	Server	Scheduler / Designer PC	Viewer - Simple content	Viewer - Multi-media content
Processor	Intel Core2Duo or compatible	Intel Core2Duo or compatible	Intel Core2Duo or compatible / Atom	Intel I5 or higher
CPU	2,0 GHz or higher	2,0 GHz or higher	2,0 GHz or higher	2,0 GHz or higher
Memory	4,096 Gigabyte	2,048 Gigabyte	2,048 Gigabyte	4,096 Gigabyte
HDD / SSD	80 Gigabyte	80 Gigabyte	80 Gigabyte	80 Gigabyte
Video card	Windows Display Driver Model (WDDM) compliant 256 MB	Windows Display Driver Model (WDDM) compliant 256 MB	Windows Display Driver Model (WDDM) compliant 256 MB	Windows Display Driver Model (WDDM) compliant Tier-2 Compatible 512 MB or higher
Operating system	Windows 2008 Server Windows 7 Windows 8	Windows 7 Windows 8	Windows 7 Windows 8	Windows 7 Windows 8

Network

All PADS4 components must be able to communicate with the PADS Server PC through a local network or internet connection.

1.11   Other features

The following is a list of (the most common) compatible file types, supported by the PADS software:

swf, pdf, bmp, gif, tif, png, ico, emf, wmf, avi, wmv, wav, snd, au, aif, aifc, aiff, wma, mp3, mpeg, mpg, m1v, mp2, mpa, mpe, mid, rmi, midi, cda, asx, wax, m3u, wvx, asf, wm, wma, wmv, html, pps, ppt

Software as a Service (SaaS): The PADS software can be deployed in three forms:

- **As a premises based solution**: in-house on servers in a controlled environment.
- **As a Hybrid solution**: PADS supports the ability to have multiple servers (PADS Server Services) within one network. So you can make a central server (local or in the cloud) and have sub-servers across the world supplying local factories with data. This reduces the network load from the central server, increases available network capacity, provides faster distribution and allows for failover. This is achieved by the fact that PADS Viewers (end-points) can have primary and secondary connections for both content synchronisation as well as data-connections/sources (e.g. CNN and ABC News as failover).
- **As a Cloud/ISP based solution**: running the server from an outside location.