Screenwriter Technical Reference Manual

All technical information about Screenwriter

⋀⋀ Arts Alliance Media

Document Details

Owner:	Georgi Nikolaev
Document Reference:	
Other Documents Referenced:	Screenwriter Windows Installation, Screenwriter Linux Installation, Installation Checklist
Related Documents:	
Acknowledgements:	Arif Rashid

Change History

Version Release	Date	Changes
V1.0	13/08/2013	Document Created

Contents

Introduction

This document consolidates all previous installation and reference texts into a single document. All of the details of installation are clearly detailed.

Screenwriter Supported Hardware

Supported Digital Cinema Screen Servers

Manufacturer	Model	Versions
Doremi	DCP2000, DCP2K4, IMB/Showvault, IMS-1000	2.4.2 - 2.4.3
Dolby	DSS200, CAT 745 IMB, CAT 862	4.6.0(31)
Qube	XP-D XP-1 & XI IMB QubeMaster Pro	2.5.5.7 3.0.1.4 2.4.1.2
GDC	SA-2100A, SA-2100T, SA2100AQ, SA-2100, SX-2001A, SX2001T, SX-2001AQ, SX-2000AR, SX-3000S	8.01 – 9.0
Sony	LMT-200/300 SRX-220/320	2.5.0.0/5150.0
Christie	IMB	1.2.1(108)

Supported Digital Cinema Projectors

Manufacturer	Model
Christie	CP2000M, CP2000ZX, CP2000S, CP2000SB, CP2000SB/XB, CP2210, CP2220, CP2230, Solaria One +, CP4220, CP4230
Barco	DP1200, DP1500, DP2000, DP3000, DP2K-10S, DP2K-12C, DP2K-15C, DP2K-20C, DP2K-19B, DP2K-22B, DP2K-23B, DP2K-32B, DP4K19B, DP4K23B, DP4K32B
NEC	NC1500, NC1600, NC2500, NC900C, NC1200C, NC2000C, NC3200S, NC3240S
Kinoton	DCP30 S, DCP30 L, DCP30 LX II, MX II, SX II
Sony	SRX-R220, SRX-R320, SRX-R320S

Screenwriter Required Hardware

The following recommendations assume that the TMS software is hosted on a hardware platform also used as a library server for central storage of content. AAM recommends the use of a server class platform for professional use.

CPU

Minimum: **Intel Celeron 1.6GHz**
Recommended: **1.8GHz quad core Xeon**

RAM

Minimum: **1GB (Linux), 2GB (Windows)**
Recommended: **4GB**

Network

Minimum: **LAN1/2 (management/content) – 1Gb/s**
Recommended:
1-4 Screens: **LAN1 (management) – 100Mb/s, LAN2 (content) – 1Gb/s**
4-8 Screens: **LAN1 (management) – 100Mb/s, LAN2 (content) – 4 x 1Gb/s bonded***
8+ Screens   **LAN1 (management) – 100Mb/s, LAN2 (content) – 10Gb/s****

* It is strongly recommended to separate content and management networks
**Fast content networks allow for high speed transfers to take place simultaneously

Disk (System)

Minimum: **64GB for OS and TMS software**

System volume can be a dedicated disk, mirrored pair of disks, or volume on main storage RAID. Use of enterprise class drives is strongly recommended.

Disk (Content Storage)

Minimum: **Multiple Terabyte capacity RAID storage according to local requirements**

Hardware RAID controllers and multiple disks are recommended for the best performance. Use of near-line SAS or SATA disks, SAS is better for maximum performance.

Typical configurations:

- 4 screen multiplex – 8 x 1TB drives in RAID 5
- 8 screen multiplex – 8 x 2TB drives in RAID 6
- 16 screen multiplex – 8 x 3TB drives in RAID 6

Ingest

Minimum: **USB2.0 interface supporting hot swap drives**
Recommended: **Optical DVD drive for short form DCP ingest**
                                   Cru-Dataport internal DX115 removable drive receiver*

*Ingest from internal Cru-Dataport receiver will be faster than using USB2.0 MoveDock

Display

Minimum: **Basic VGA display adaptor**
Recommended: **Accelerated display adaptor with resolution 1280 x 1024 and above, where TMS server is intended to be used for main GUI control**

Operating System

• **Windows**

Minimum: **Windows 7 Professional**
Recommended: **Windows Server 2008**

• **Linux**

Recommended: **CentOS 6.2, 64bit**

Installation Checklist

Please make sure that all of the steps listed are performed when installing a new site as this will ensure the site has been properly configured.

Before commencing the checks in this document, we have made some assumptions about the setup:

1. All of the cinema equipment has been connected correctly (in an AAM approved setup)
2. All devices are working correctly
3. There are no networking issues (i.e. packet loss)
4. You are installing the latest copy of Screenwriter

If you do not ensure all of the steps above have been completed, it will result in a failed installation. We will also ask that all of the above has been checked prior to reporting any faults to Arts Alliance.

Pre-Installation Checklist

Step 1: Check hardware

Make sure of the following:

- [ ] Server meets minimum hardware criteria (please see installation documentation)
- [ ] Server is running either Windows Server 2008 or CentOS 6.x
- [ ] Has at least 2 network cards (1 for the management network and 1 for the content, this is a DCI requirement) the minimum requirement for content networks is Gigabit Ethernet (we recommend that you use 10 Gigabit for content networks otherwise transfers may be slow for complexes with 4 screens or more).
- [ ] Prepare a network schematic of the layout of devices – this will help with troubleshooting if you need it later
- [ ] Access to NAS/RAID device for storage of content (this can be built-in to the server)
- [ ] Verify that all you can ping **ALL** of the devices on both the management and content networks and that there is no packet loss (to ensure no packet loss, please run extended pings for at least 10mins, preferably longer) this must be done for every screen
    - o Ping Screen Server / IMB
    - o Ping Projector
    - o Ping Management Switch (if managed)
    - o Ping NAS device(s)
    - o Ping other devices (such as satellite receiver)
- [ ] Verify that you can ping the Screenwriter server from the cinema devices on both its content and management IP addresses
    - o Ping from Screen Server / IMB
    - o Ping from Projector
    - o Ping from Management Switch (if managed)
    - o Ping from NAS device(s)
    - o Ping from other devices (such as satellite receiver)
- [ ] Ensure that the cinema hardware to be added to Screenwriter are on the appropriate software/firmware versions (please check with AAM technical representative if you are not sure) and is fully supported by Screenwriter
- [ ] Enable SNMP on all cinema hardware

Step 2: Check software

- [ ] Check with AAM that you have the latest stable release of the installation files
- [ ] Have a compatible web browser installed
- [ ] Have an FTP client installed (for testing FTP connections)
- [ ] *(Optional)* Remote connectivity software – in the event you have problems with the installation, this will allow an AAM technical agent to remotely login
  Please note that remote connectivity is required in the event you need support from AAM!

Step 3: Begin installation

- ☐ Run the installer for Screenwriter (RPM for Linux, EXE for Windows) and wait for it to complete
- ☐ Start the TMS – On CentOS type in a terminal window: *service tlmsv2 stop* then *service tlmsv2 start*, on Windows, simply go to Control Panel → Administrative Tools → Services and then restart the 'AAM TLMS 2' service.

Sample Network Diagram
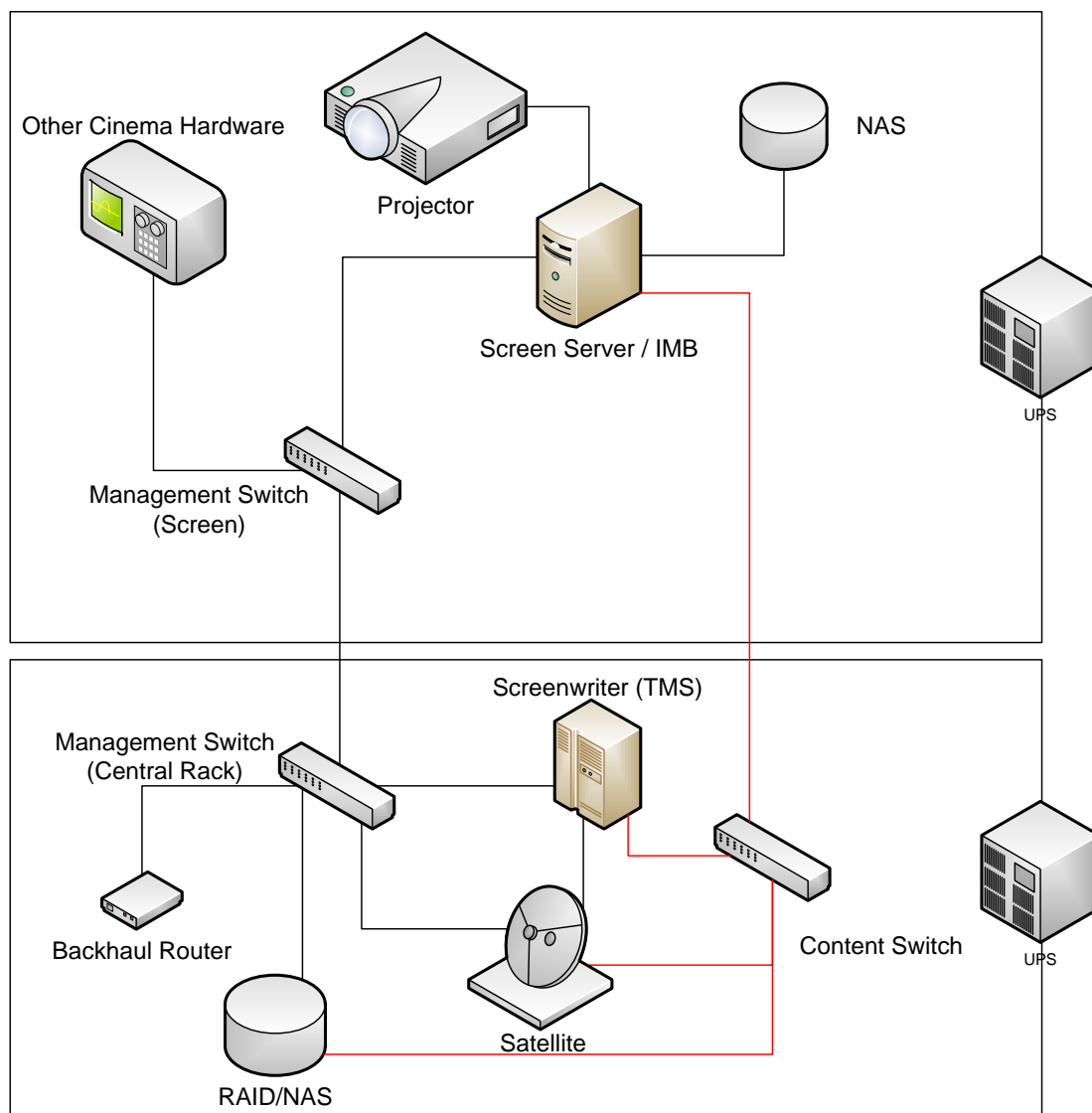
Black lines indicate the management network.

Red lines indicate the content network.

Post-Installation Checklist

Step 4: Configure screens and add cinema equipment

- ☐ Name the complex
- ☐ Set the correct region information
- ☐ Create each of the screens at the complex
- ☐ Add the cinema hardware to the correct screen (make sure any screen features, such as 3D, are enabled at this point)
- ☐ Make sure all of the cinema hardware has initialised successfully and is reporting the correct current status
  - o Projector
    - ¤ Playback Info
    - ¤ Lamp Status
  - o Screen Server/IMB
- ☐ Load some content onto the LMS

Step 5: Acceptance testing

- ☐ Create users on Screenwriter with appropriate permissions
- ☐ Ingest content onto the TMS from USB
- ☐ Ingest content onto the TMS via HDD
- ☐ (optional) Ingest content from satellite
- ☐ Transfer content from LMS to each screen
  - o Trailer
  - o Advertisement
  - o Feature
  - o Short
  - o Test
  - o Subtitled
- ☐ Transfer content from each screen to LMS
  - o Trailer
  - o Advertisement
  - o Feature
  - o Short
  - o Test
- ☐ Transfer content between screens
  - o Trailer
  - o Advertisement
  - o Feature
  - o Short
  - o Test
- ☐ Create a scheduled transfer (a transfer for a different time) and verify that it transfers
- ☐ Test KDMs work for content(you will need to make sure you correct KDM for your content)
- ☐ Create a test schedule and make sure all of the screens are following the schedule without incident
- ☐ Delete a schedule
- ☐ Make sure the projector status along the bottom is updating according to the status of the projector
- ☐ Create a macro pack
- ☐ Create a playlist
- ☐ Delete content from Screenwriter
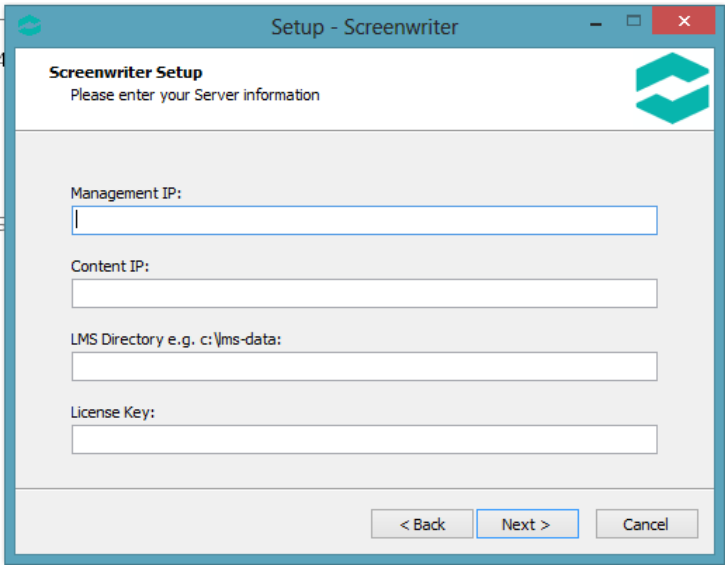- ☐ Delete content from screen

Screenwriter Installation on Windows

1. Disable Windows Firewall **NB: failure to do so will result in Screenwriter not working!**
2. Double click the Screenwriter_Setup_2.2.6.1.exe file to start the installation
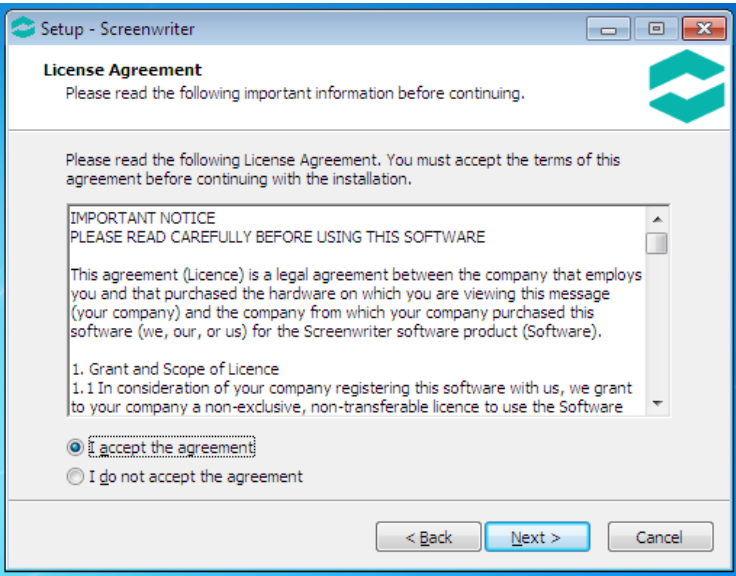3. Click "Yes" to authorized the permission request
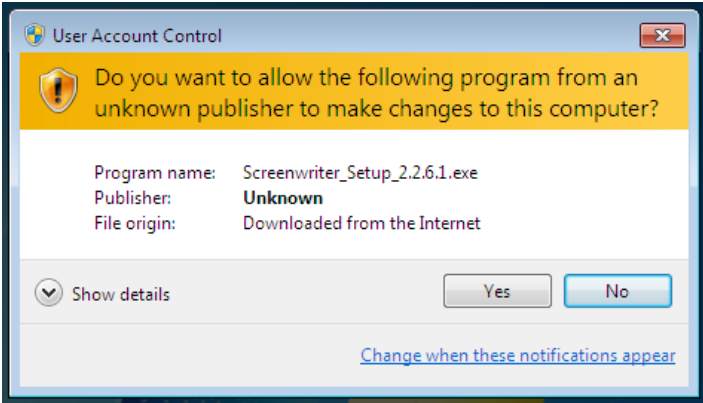
4. Click "Next" in the Wizard screen

:

5. Now you will be prompted for your server information. You will need to enter the server's management and content IP addresses, the location you wish to store content and the license key

6. In the next screen you will be asked to accept the license agreement. To do that, select "I accept the agreement" and click "Next"

7. To process the installation, click "Install"
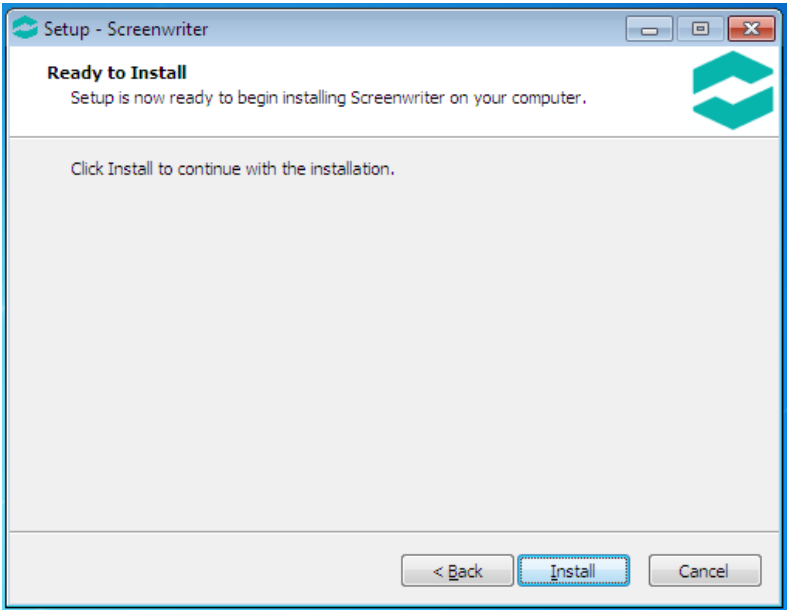
8. On the following screen you will be asked to install python. To do that, select "Install for all users" and click "Next"

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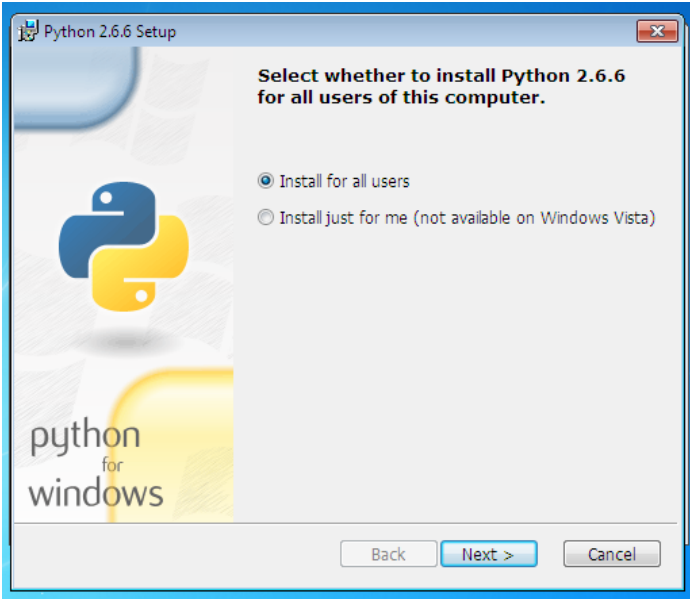
9. Leave the python directory as default and click "Next"
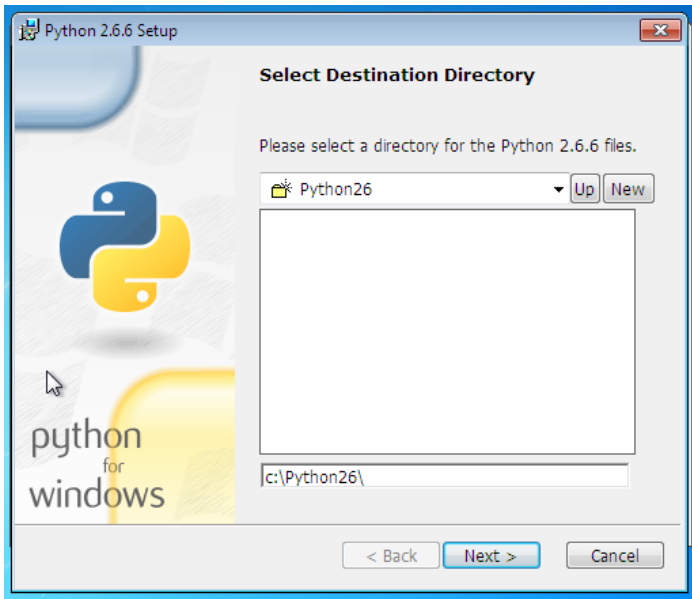
10. Make sure all the modules presented are selected to be installed and click "Next"

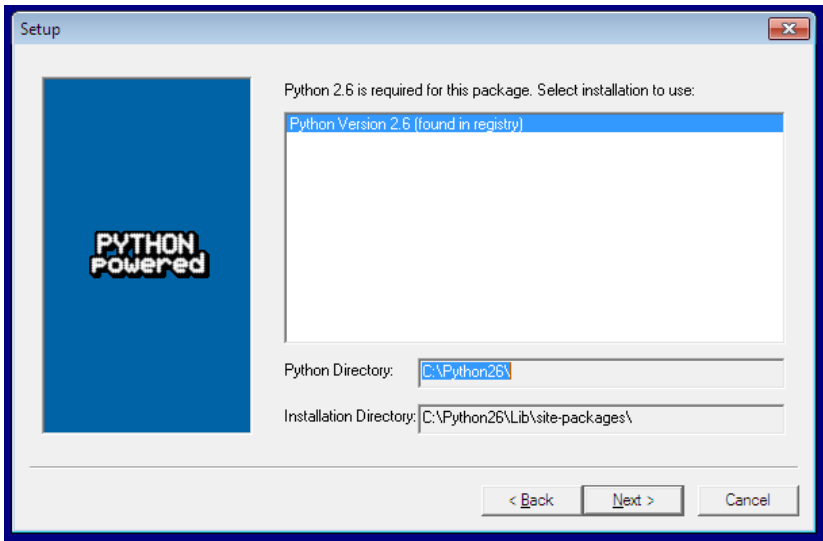11. Once the python installation is finished, you should see a screen similar to the one below
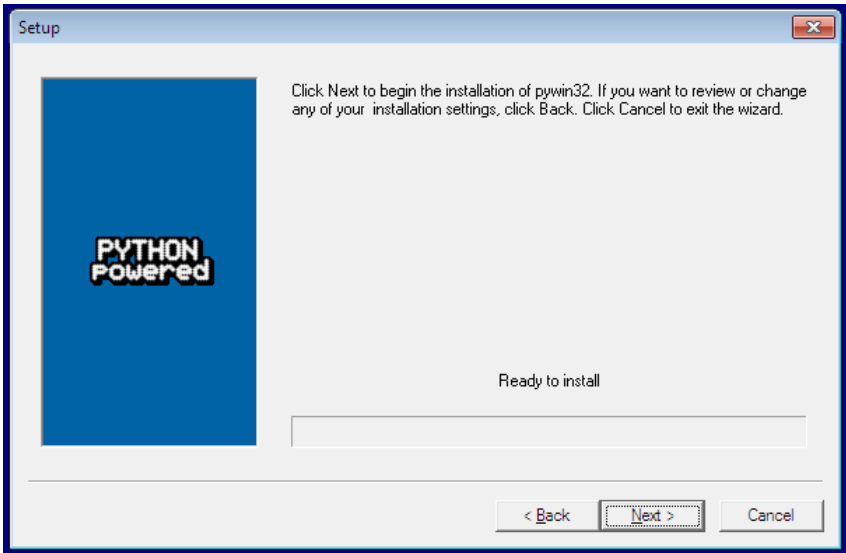

12. Next you will have to install the pywin32 library. To do so, follow the on screen navigation by clicking on "Next"
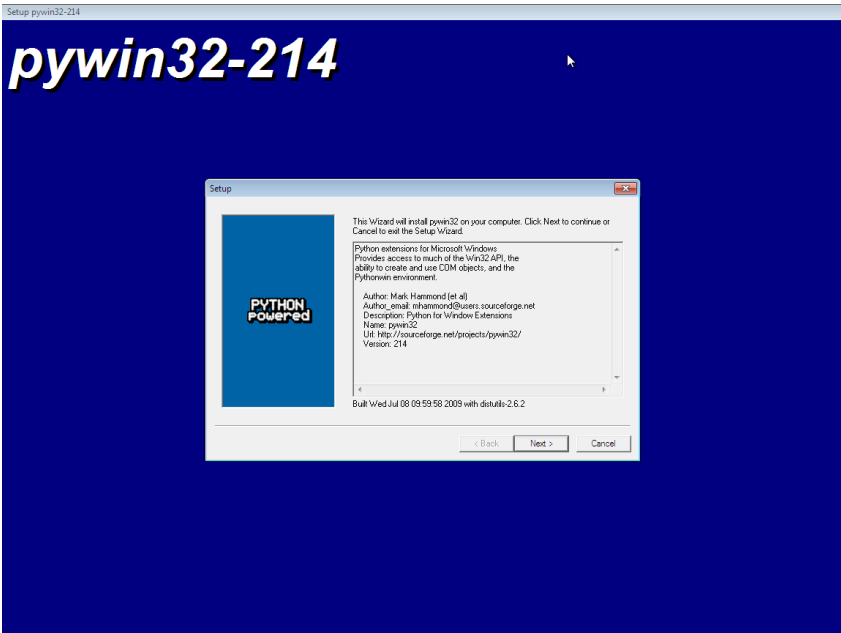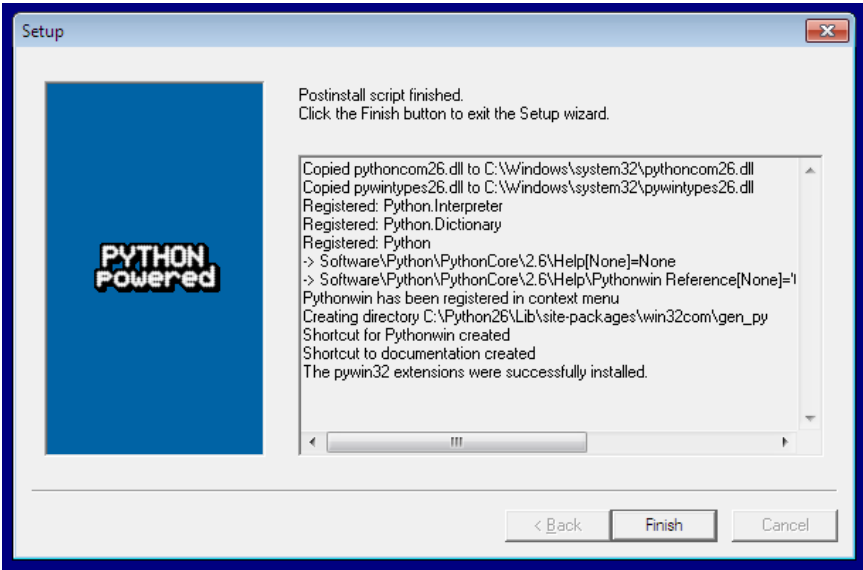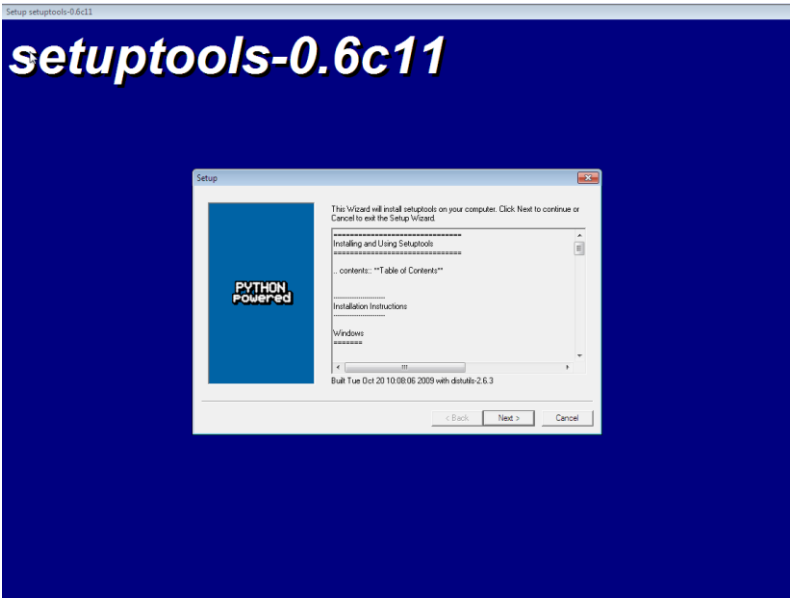
13. Verify the installation directory and click "Next"
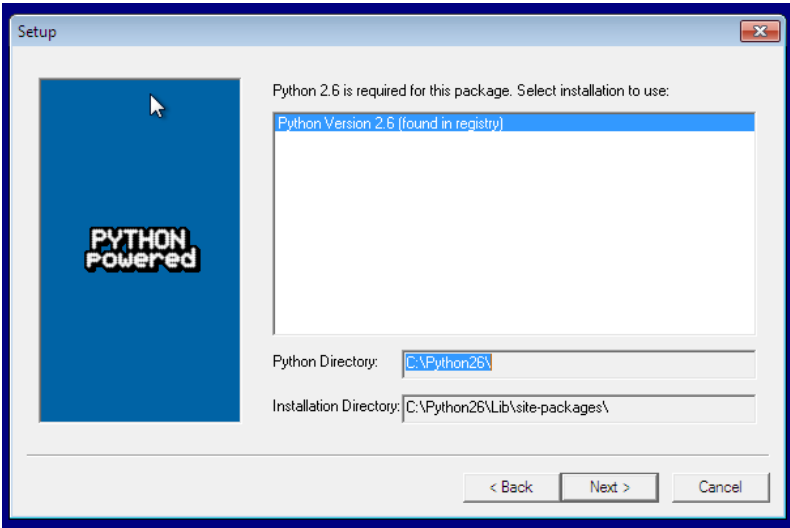
.

14. Click "Next" to continue.

15. Once you see the screen for completion, click "Finish"
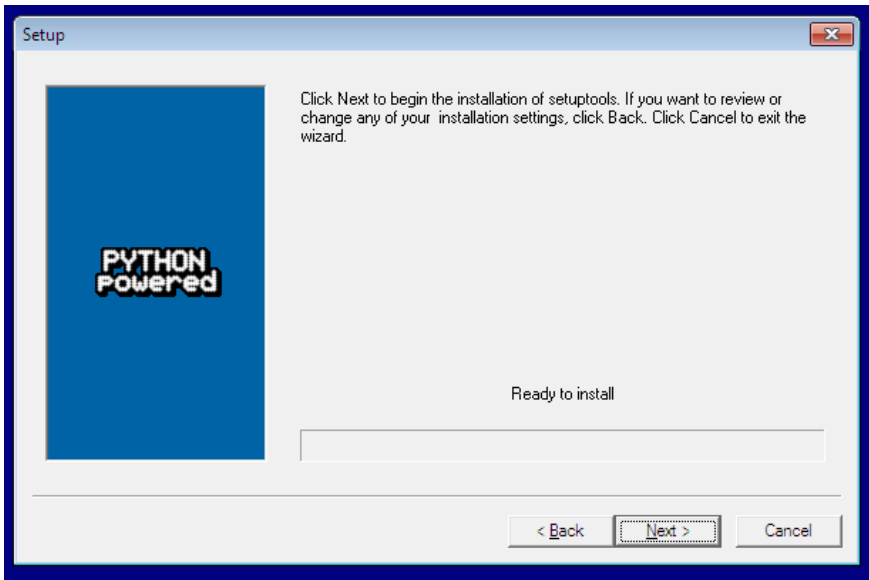

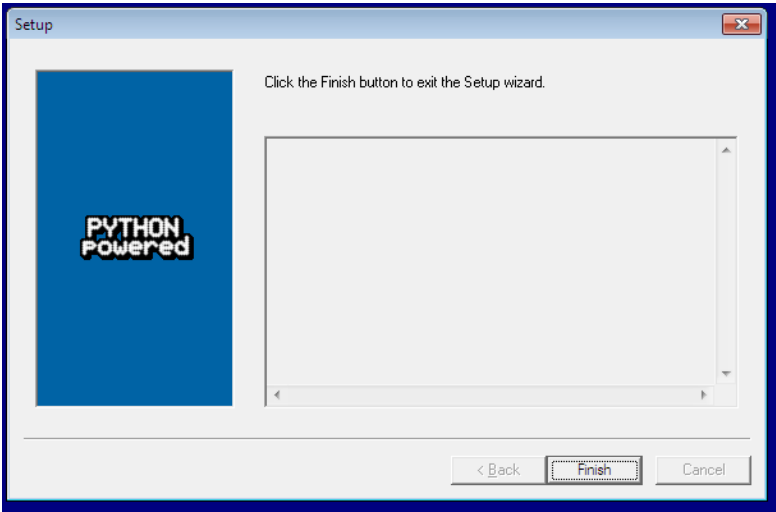16. Next install the setuptools package. To do that, click "Next".

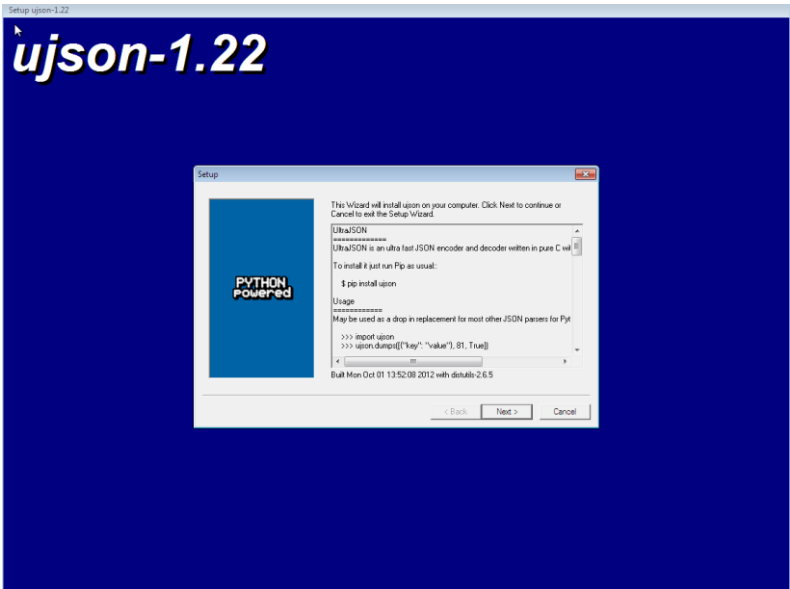17. Leave the python directory as default and click "Next".

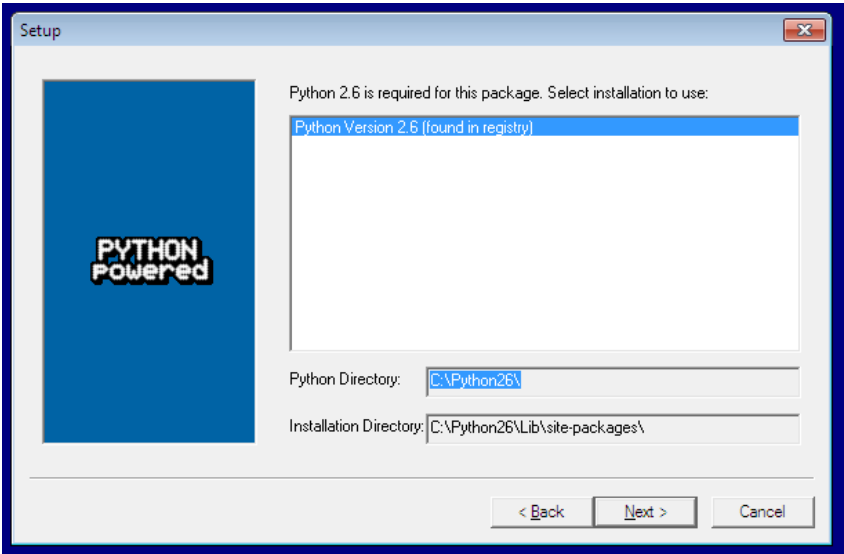18. Click "Next" to continue.

19. Once the installation is completed, click "Finish".

20. Next install the ujson. To do that, click "Next"

21. Leave the python directory as default and click "Next".

22. Once the installation is completed, click "Finish".
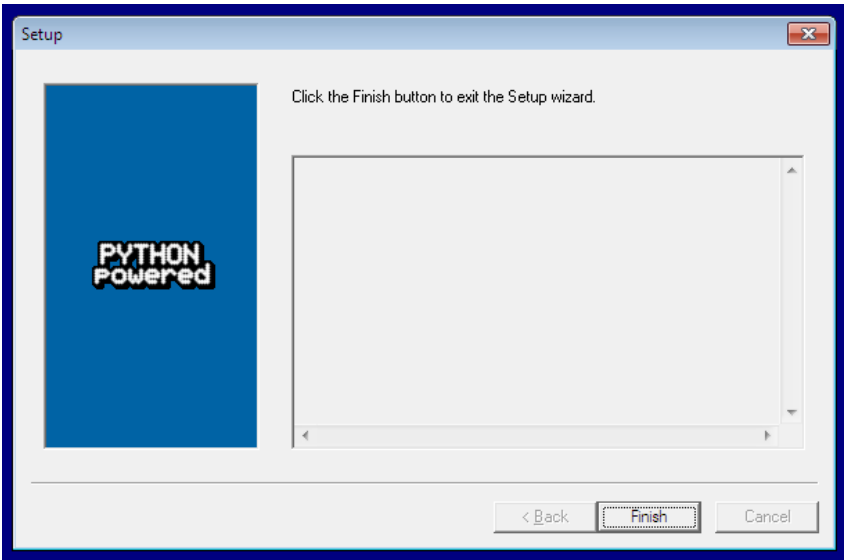
23. Change log information is now displayed, click 'Next' to continue.
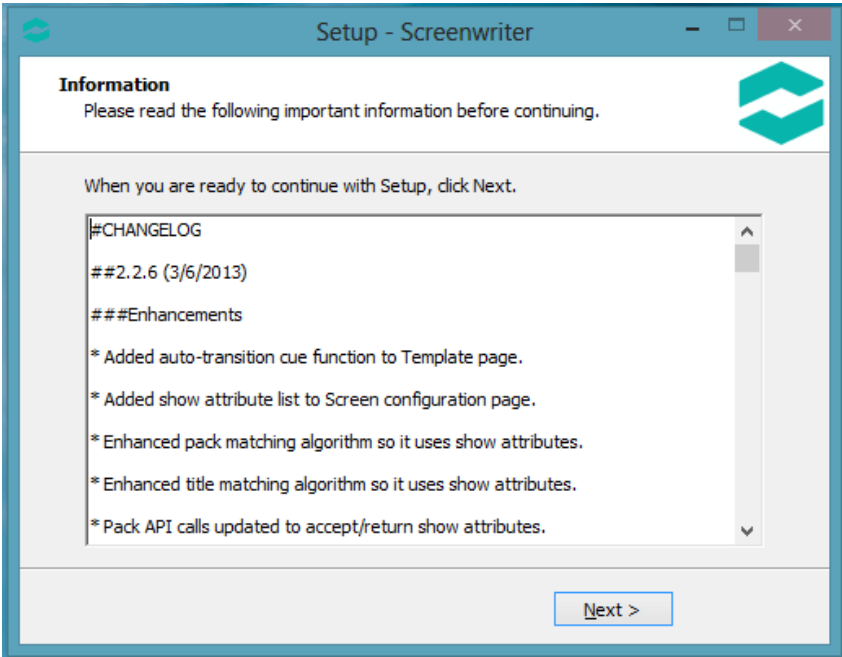
24. To complete the installation of the Screenwriter, click "Finish".

25. After the system boots up, open your Google Chrome or Mozilla Firefox browser. To access the TMS, type *http://x.x.x.x* where the *x.x.x.x* is the Management IP you have defined during the installation. For example: *http://10.0.2.15*

Screenwriter Installation Instructions (Linux)

1. Open a terminal window
2. At terminal prompt make sure you are super user:
   Su *(then type password for super user)*
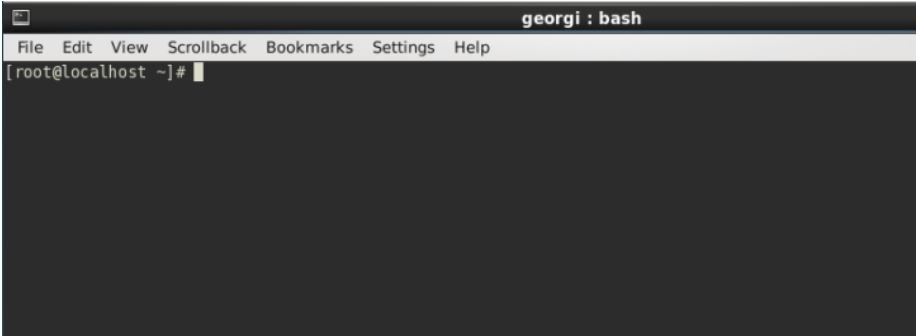
3. Execute **yum –y install aam-tlms-2.x-x.x.el6.noarch.rpm**
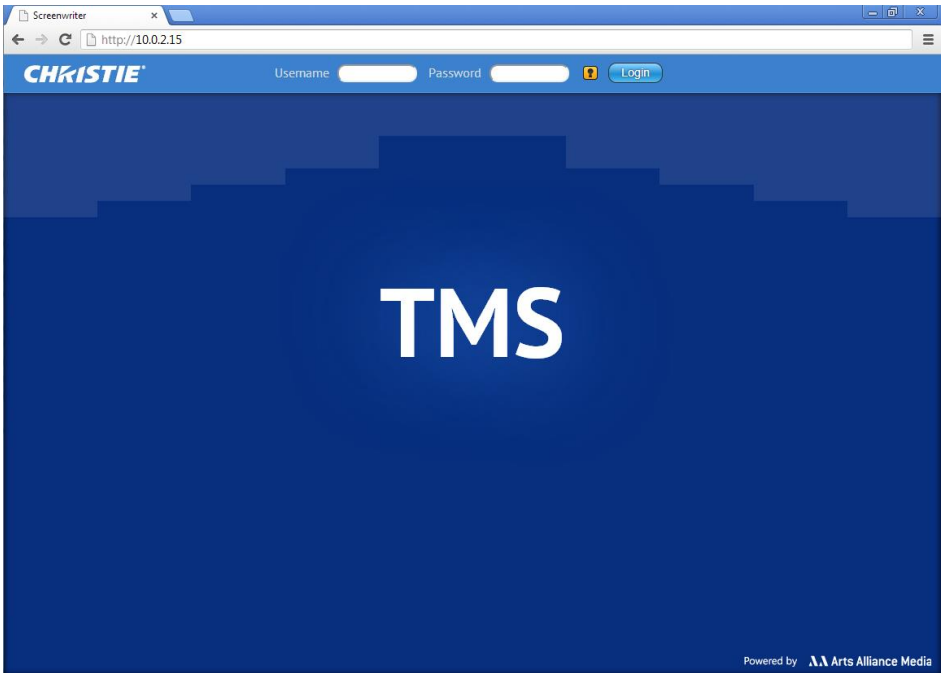   you may be prompted to download and install some dependancies. These are necessary to install Screenwriter, so please make sure you accept the downloads
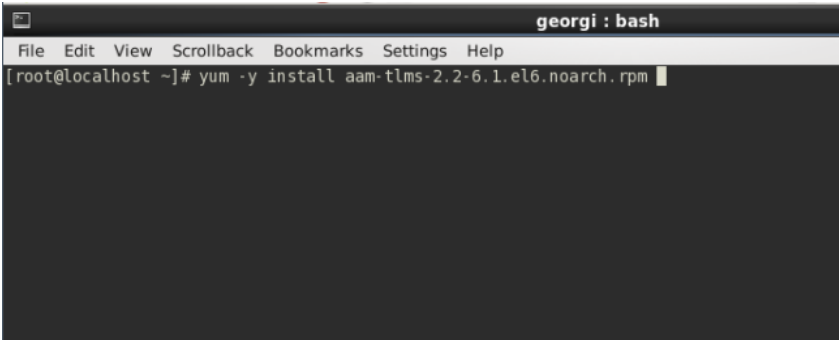
4. Once the installation is completed, a TMS icon will appear on your desktop
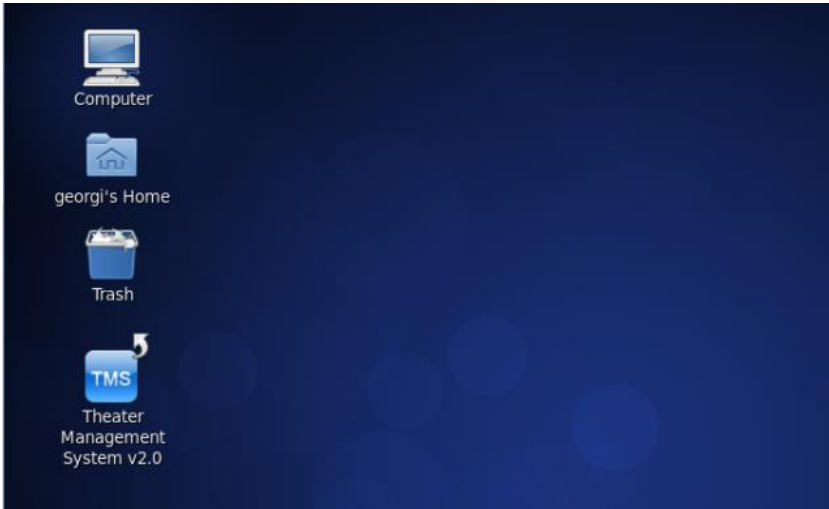
5. Double click the TMS icon to open the web interface of it

Screenwriter Installation Instructions (Linux – Offline install)

1. Login to the system with a **superuser (root)** access:
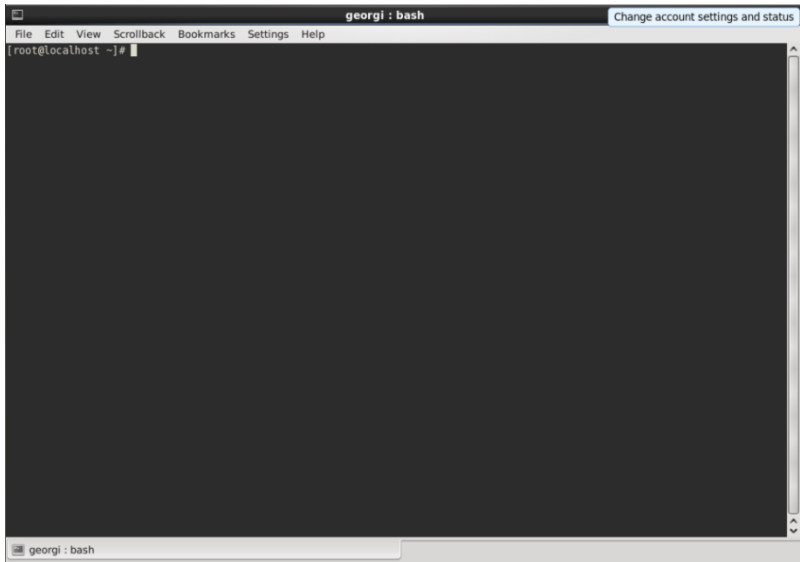
2. Go to the directory where the **extra_packages.zip** file is located. For example: **cd /root/**
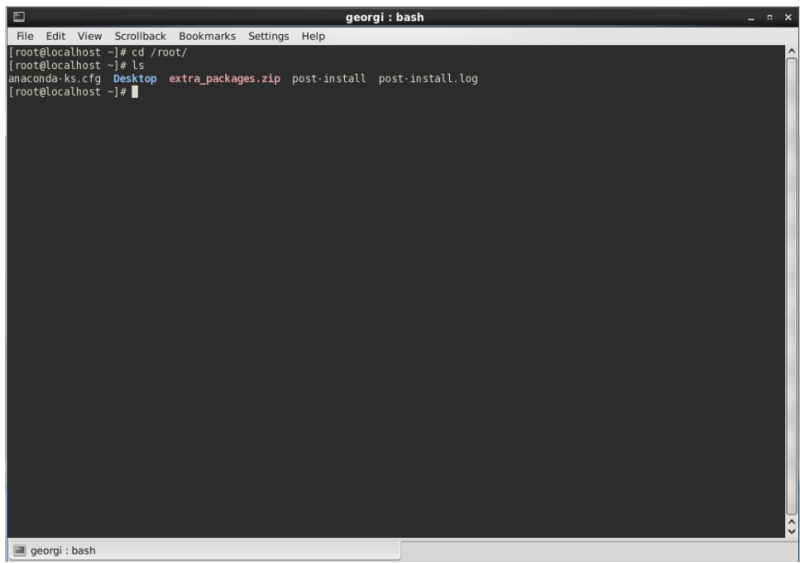
3. Execute **unzip extra_packages.zip**

4. Execute **yum -y install python-libs-2.6.6-36.el6.i686.rpm python-devel-2.6.6-36.el6.x86_64.rpm python-setuptools-0.6.10-3.el6.noarch.rpm python-2.6.6-36.el6.x86_64.rpm vsftpd-2.2.2-11.el6_3.1.x86_64.rpm**

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5. Execute the following commands to install dependencies:
   easy_install pyOpenSSL-0.10-py2.6-linux-x86_64.egg
   easy_install ujson-1.22-py2.6-linux-x86_64.egg
   easy_install pycrypto-2.1.0-py2.6-linux-x86_64.egg

```
                                    georgi : bash
File   Edit   View   Scrollback   Bookmarks   Settings   Help
[root@localhost extra_packages]# easy_install pyOpenSSL-0.10-py2.6-linux-x86_64.egg
Processing pyOpenSSL-0.10-py2.6-linux-x86_64.egg
creating /usr/lib/python2.6/site-packages/pyOpenSSL-0.10-py2.6-linux-x86_64.egg
Extracting pyOpenSSL-0.10-py2.6-linux-x86_64.egg to /usr/lib/python2.6/site-packages
Adding pyOpenSSL 0.10 to easy-install.pth file

Installed /usr/lib/python2.6/site-packages/pyOpenSSL-0.10-py2.6-linux-x86_64.egg
Processing dependencies for pyOpenSSL==0.10
Finished processing dependencies for pyOpenSSL==0.10
[root@localhost extra_packages]# easy_install ujson-1.22-py2.6-linux-x86_64.egg
Processing ujson-1.22-py2.6-linux-x86_64.egg
removing '/usr/lib/python2.6/site-packages/ujson-1.22-py2.6-linux-x86_64.egg' (and everything under it)
creating /usr/lib/python2.6/site-packages/ujson-1.22-py2.6-linux-x86_64.egg
Extracting ujson-1.22-py2.6-linux-x86_64.egg to /usr/lib/python2.6/site-packages
ujson 1.22 is already the active version in easy-install.pth

Installed /usr/lib/python2.6/site-packages/ujson-1.22-py2.6-linux-x86_64.egg
Processing dependencies for ujson==1.22
Finished processing dependencies for ujson==1.22
[root@localhost extra_packages]#
[root@localhost extra_packages]# easy_install pycrypto-2.1.0-py2.6-linux-x86_64.egg
Processing pycrypto-2.1.0-py2.6-linux-x86_64.egg
removing '/usr/lib/python2.6/site-packages/pycrypto-2.1.0-py2.6-linux-x86_64.egg' (and everything under it)
creating /usr/lib/python2.6/site-packages/pycrypto-2.1.0-py2.6-linux-x86_64.egg
Extracting pycrypto-2.1.0-py2.6-linux-x86_64.egg to /usr/lib/python2.6/site-packages
pycrypto 2.1.0 is already the active version in easy-install.pth

Installed /usr/lib/python2.6/site-packages/pycrypto-2.1.0-py2.6-linux-x86_64.egg
Processing dependencies for pycrypto==2.1.0
Finished processing dependencies for pycrypto==2.1.0
[root@localhost extra_packages]#
```

6. Execute **yum –y install aam-tlms-2.2-6.1.el6.noarch.rpm**

```
                                    georgi : bash
File   Edit   View   Scrollback   Bookmarks   Settings   Help
[root@localhost ~]# yum -y install aam-tlms-2.2-6.1.el6.noarch.rpm
```

7. Once the installation is completed, a TMS icon will appear on your desktop.
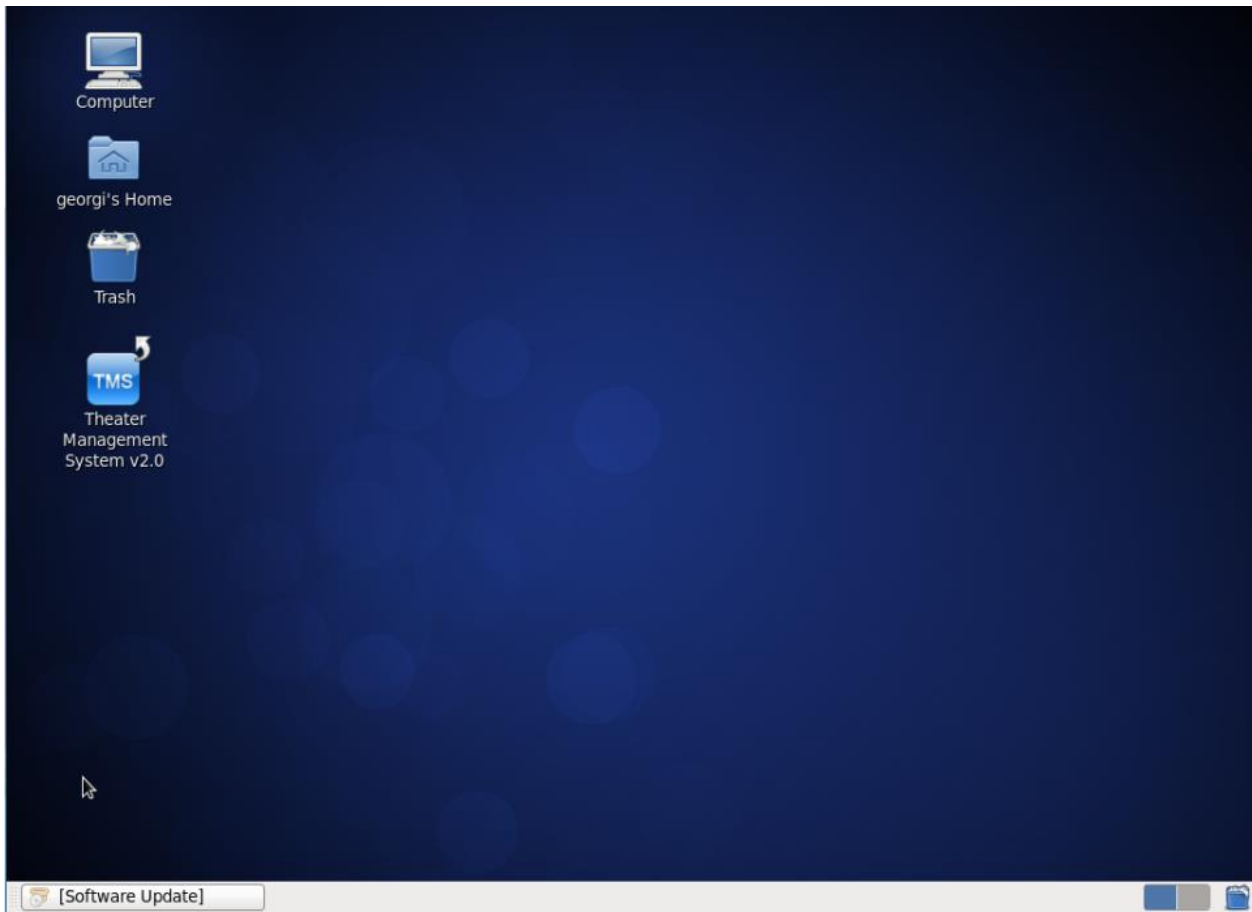
8. Double click the TMS icon to open the web interface.

Frequently Asked Questions

Installation Questions

Q: What operating systems does Screenwriter 2.0 support?

A: Screenwriter is officially supported on Server 2008/R2 and Centos 6.x. only. Other operating systems may work but are not officially supported.

Q: Why do I need to mount /lms-data/ (c:\lms-data on Windows) before installing Screenwriter?

A: Because when the TMS is installed for the first time, it will automatically create the directory on the default system drive. If you wish to use a RAID array or NAS drive for storing content, you will need to create this as a virtual directory (mount point) before so the TMS doesn't try and create its default directory. This default location can be changed within the cinema_services.cfg file, please see the documentation for details.

Q: What file systems are supported?

A: The supported file system depends on the operating system installed (Windows/Linux). The default ones are as follows:

Linux: ext3, ext4 (recommended)

Windows: FAT32, NTFS (recommended)

Several others are supported by either operating system (e.g. NTFS is available on Linux with drivers installed), but these do not affect the TMS as it is transparent to the TMS, i.e. does not interfere with the operation of the TMS.

Q: Where can I get the installer files from?

A: From our FTP site, details will be provided on request, please speak to your AAM Sales Representative.

Q: When I try and access the TMS I get a 'License Expired' problem, what do I do?

A: Look at the cinema_services.cfg file (/aam-lms/bin) and look at the 'License =' section. There is a date next to the license which will indicate when the license expires. If the date has passed or there is no license, you will need to request a new one from Arts Alliance. Please contact your technical representative for a new license key.

Q: How do I configure the IP addressing of the network cards?

A: The network cards on the server must be configured via the operating system first. All configuration of within the TMS will NOT change the actual IP address of the network cards.

Complex Setup Questions

Q: I've installed Screenwriter and now it seems the TMS isn't working, what do I do?

A: Simply run your web browser and in the address bar enter: http://xxx.xxx.xxx.xxx:9000 (where xxx.xxx.xxx.xxx is the management IP address of the Screenwriter 2.0 server). Please note port 9000 is the default port and can be changed to any port that you require, this is changed by amending the 'port =' parameter in the cinema_services.cfg file. You may also need to change the 'ip =' in order to access Screenwriter on the correct IP address.

Q: When I add a projector/play server/IMB I don't get the device status appear on Screenwriter. What is wrong?

A: In order to get the projector information, you will need to enable SNMPv2 on the projector and put the IP address of the Screenwriter server in the SNMP settings.

Q: A projector that was working fine now appears to have a constant error, even though I have rebooted it, what should I do?

A: Sometimes a device can become 'stuck' in Screenwriter. To fix this, simply edit the device in complex settings and just say the settings without changing anything. This forces Screenwriter to reset the connection and re-initialise the device. If this does not work, then there may be a hardware problem with the cinema equipment.

Q: Nothing seems to be working when I try and type the URL for Screenwriter, what do I do?

A (1): Check the service is running:

Linux:

Open a terminal window and type: 'service tlmsv2 status' and check that its running, if not type 'service tlmsv2 start'. If you get a 'service tlmsv2 running (pid :)' then you will need to restart the operating system.

Windows:

Check that the AAM TLMS 2 Service is running (go to Control Panel → Administrative Tools → Services). If its not running, make sure Windows Firewall is disabled and then try and run the service.

A (2): Check the configuration file is correct:

Edit the cinema_services.cfg (/aam-lms/bin) and see if the IP address is correct (should be the management IP of the server) and verify the port number. If in doubt, you can stop the TMS service and then rename/delete the configuration file. The TMS will automatically recreate the configuration file the next time you start the service. Please see the 'Screenwriter Technical Reference Guide' for more details.

Content Questions

Q: No content is transferring at all, what do I do?

A: Check the FTP server is up and running correctly. Go to the 'Configuration' Tab and then look for the 'LMS' box and click on the 'Check FTP' button to make sure the service is running. (Please note that the content IP has to be set to the same IP address as the IP for the content network otherwise transfers will not happen. Also the content port is set to 21 and the content username is pullingest).

Also make sure that you have verified the following:

- FTP transfers work between devices manually (manually initiate via command line a transfer to the device and then from the device back to the TMS)
- Check that all devices you are attempting to transfer to are operational and that you can ping them on both management AND content networks
- The content itself is not the problem; use a mixture of types of content, such as features, advertisements, trailers, etc.
- If using a Christie IMB, try clearing the transfer history on the TMS.
- If you see a 'connection error' message coming from the device you are attempting to transfer to, try rebooting the TMS. This usually happens once you have just installed Screenwriter and as such a reboot is recommended to make sure all of the settings are correctly loaded.

Q: Content appears to start transferring, (content transfer initiated) but the progress bar stays at 100%, what do I do?

A: The problem is likely to be with a Christie IMB. Simply clear the transfer history in the TMS and the progress bar should update without any more problems. This is a minor bug that should be fixed in later version of Screenwriter.

Q: Content is not transferring between the Screenwriter 2.0 and a Christie IMB

A: Screenwriter uses FTP to transfer files. FTP transfer only works with Christie IMB's with firmware v1.1 or above. Please update the firmware otherwise the transfers will continually fail.

Q: Content is transferring, but seems to timeout during the transfer (or the timer just keeps increasing), why does this happen?

A: This would normally indicate a networking issue on the network (more than likely on the content network). Please investigate by trying extended pings to all devices on both networks as this should indicate any problems. Also try manually transferring files and see if the same problem occurs. Once you are sure this is not a networking issue, please make sure you can provide remote access to the system so Arts Alliance can remotely investigate.

Appendix A

Screenwriter Ports

The following ports that need to be open for TMS:

20, 21, 80, 161, 162, 443, 2121, 4502, 5000, 5001, 8080, 7142, 11730, 49153 (and any other custom ports)

Device	Ports
TMS	9000 (default) or 80, 8000, 8080
LMS	20 & 21 or 2121 (can also be 8021)
Doremi	21, 11730
Dolby	21, 8080
GDC	21, 49153
Montage	5001
Qube	21, 8080
Sony	21, 443
Christie	21, 4502, 5000
Barco	5000
NEC	7142
Axis	80
SNMP	161 & 162

Arts Alliance Media

Linux Cheat Sheet

File Commands	
ls	Directory listing
ls – al	Formatted listing with hidden items
cd *dir*	Change directory to *dir*
cd	Change to home
pwd	Show current directory
mkdir *dir*	Create a directory *dir*
rm *file*	Delete a file
rm –r *dir*	Delete a directory
rm –f *file*	Force remove *file*
rm –rf *dir*	Force remove directory *dir*
cp *file1 file2*	Copy *file1 file2*
mv *file1 file2*	Rename or move *file1* to *file2* if *file2* is an existing directory
ls –s *file link*	Create symbolic link *link* to *file*
touch *file*	Create or update *file*
cat > *file*	Places standard input into *file*
more *file*	Output the contents of *file*
head *file*	Output the first 10 lines of the *file*
tail *file*	Output the last 10 lines of the *file*
tail –f *file*	Output the contents of *file* as it grows, starting with the last 10 lines

Process Management	
ps	Display currently active processes
top	Displays all running processes
kill *pid*	Kill process ID *pid*
killall *proc*	Kill all processes named *proc* *
bg	Lists all stopped or background jobs; resume a stopped in background
fg	Brings the most recent job to foreground
fg *n*	Brings job *n* to the foreground

File Permissions	
chmod *octal file*	Change the permissions of *file* to *octal*. • 4 – read (r) • 2 – write (w) • 1 – execute (x) **chmod 777** – read, write, execute all **chmod 757** – rwx for owner, rx for group and world.

SSH	
ssh *user@host*	connect to *host* as *user*
ssh –p *port user@host*	connect to *host* on port *port* as *user*
ssh-copy-id *user@host*	add your key to *host* for *user* to enable keyed/passwordless login

Searching	
grep *pattern files*	Search for *pattern* in *files*
grep –r *pattern dir*	Search recursively for *pattern* in *dir*
command	grep *pattern*	Search for *pattern* in output of *command*
locate *file*	find all instances of *file*

System Information	
date	Show the current date and time
cal	Shows this month's calendar
uptime	Show current uptime
w	Display who is online
whoami	Who you are logged in as
finger *user*	Display information about *user*
uname –a	Show kernel information
cat /proc/cpuinfo	CPU information
cat /proc/meminfo	Memory information
man *command*	Show the manual for *command*
df	Show disk usage
du	Show directory space usage
free	Show memory and swap usage
whereis *app*	Show possible locations of *app*
which *app*	Show which *app* will be run by default

Compression	
tar cf *file.tar files*	Create a tar named *file.tar* with *files*
tar xf *file.tar*	Extract the files from *file.tar*
tar czf *file.tar.gz files*	Create a tar with Gzip compression
tar xzf *file.tar.gz*	Extract a tar using Gzip
tar cjf *file.tar.bz2*	Create a tar using Bzip2
tar xjf *file.tar.bz2*	Extract a tar using Bzip2
gzip *file.gz*	Compress *file* and name it *file.gz*
gzip –d *file.gz*	Decompress *file.gz*

Network	
ping *host*	Ping *host* and output results
whois *domain*	Get whois info for *domain*
dig *domain*	Get DNS info for *domain*
dig –x *host*	Reverse lookup for *host*
ifconfig	Shows network interfaces
ifup/ifdown *eth0*	bring up/down interface *eth0*
wget *file*	Download *file*

Installation	
rpm –Uvh *pkg.rpm*	Install a package *pkg.rpm*
rpm –qa	Lists all installed RPMs
rpm –e *pkg.rpm*	Uninstalls *pkg.rpm*
yum install *pkg.rpm*	Installs package via YUM

Shortcuts	
<Ctrl> + C	Halts the current command
<Ctrl> + Z	Stops the current command
<Ctrl> + D	Logout of current session
<Ctrl> + U	Erases whole line
<Ctrl> + R	Bring up a recent command

Complex Information Sheet

Here is a sample screen information sheet. Each screen should have details of the IP addresses, hardware and firmware/software version of all equipment. This will be requested for each screen by AAM in the event of a fault.

Complex X

Complex	
Cinema Name	
Address	
Contact Person	
Email	
Tel.	
Mobile	
Number of Screens	
Management IP Range	
Content IP Range	

Central Rack

Screenwriter (TMS)	
Operating System	
Remote Access IP *(if any)*	
Management IP	
Management Subnet	
Content IP	
Content Subnet	
Software Version	
Firmware Version	
Serial Number	
MAC addresses	

Screen X

Please note that one of these will need to be filled in for each screen.

Screen Server	
Screen Server Type (Play server / IMB)	
Vendor	
Model	
Management IP	
Management Subnet	
Content IP	
Content Subnet	
Software Version	
Firmware Version	
Serial Number	

NAS	
NAS Interface IP	
NAS Vendor	
NAS Model	
Management IP	
Content IP	
Serial Number	

Projector	
Vendor	
Model	
Serial Number	
Software Version	
Firmware Version	
Serial Number	