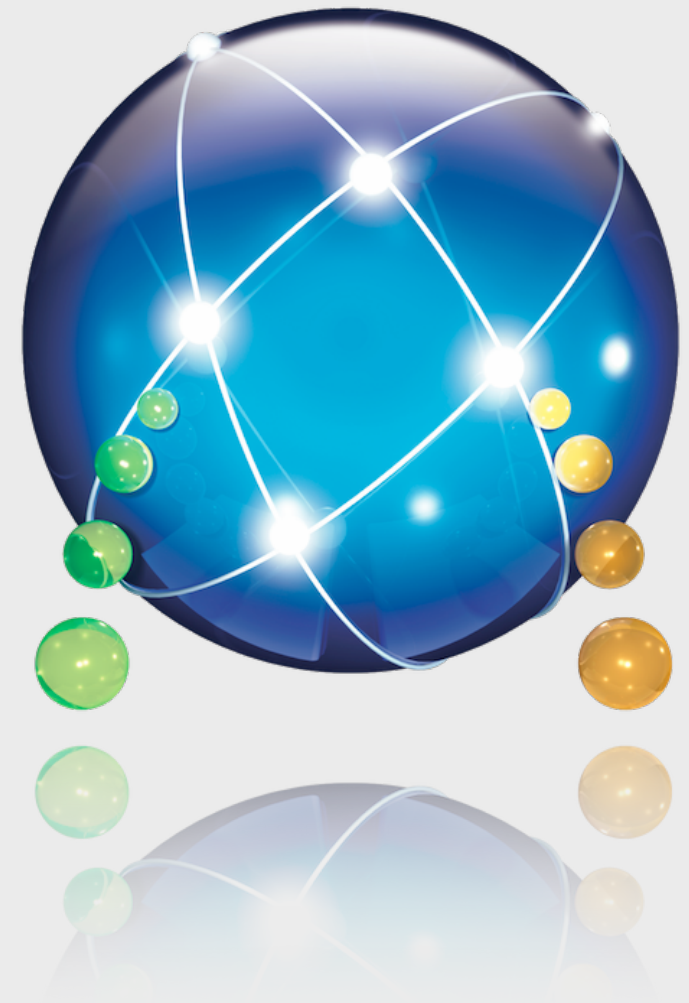


DeployStudio Server Quick Install

v1.7.0

The DeployStudio Team
info@deploystudio.com



Requirements

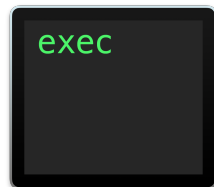
- OS X 10.7.5 to 10.11.1
- DeployStudioServer_v1.7.x.pkg and later
- NetBoot based deployment
 - 100 Mb/s switched Ethernet network or better
 - OS X Server 10.7.5 to 10.11.1
 - Client machines with 1GB of memory or more
- External drive based deployment
 - Firewire, USB2 or Thunderbolt external drive running OS X
- Shared repository
 - Any AFP, SMB/CIFS or NFS sharepoint available on the network
 - Can run on another server

DeployStudio components

DeployStudio components



DeployStudioServer repository: local folder or network sharepoint where DeployStudio stores and retrieves disk images, packages, scripts, logs and all the databases (computers and workflows)



DeployStudioServer daemon: shares the repository's databases to client applications like DeployStudio Admin and Runtime. This daemon also manages Runtime's multicast restoration requests by controlling ASR server instances.



Assistant: simple tool to install, restart and configure a DeployStudioServer daemon. This is also the tool to create a DeployStudio NetBoot set or bootable external drive based on the system where the assistant is running.



Admin: workflows, computers, scripts and disk images editing tool. Includes also an activity viewer to follow the status of the computers running DeployStudio Runtime. It requires a DeployStudioServer daemon running on the network or local system.

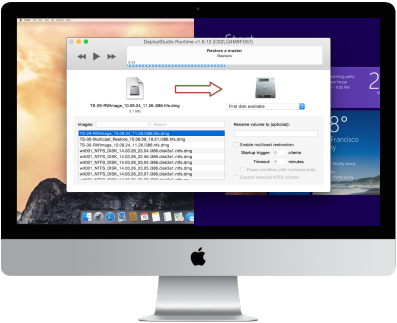


Runtime: deployment workflows' execution tool. It requires a DeployStudioServer daemon running on the network or local system.

Deployment Configurations

Deployment configurations

Standard external drive



Target computer

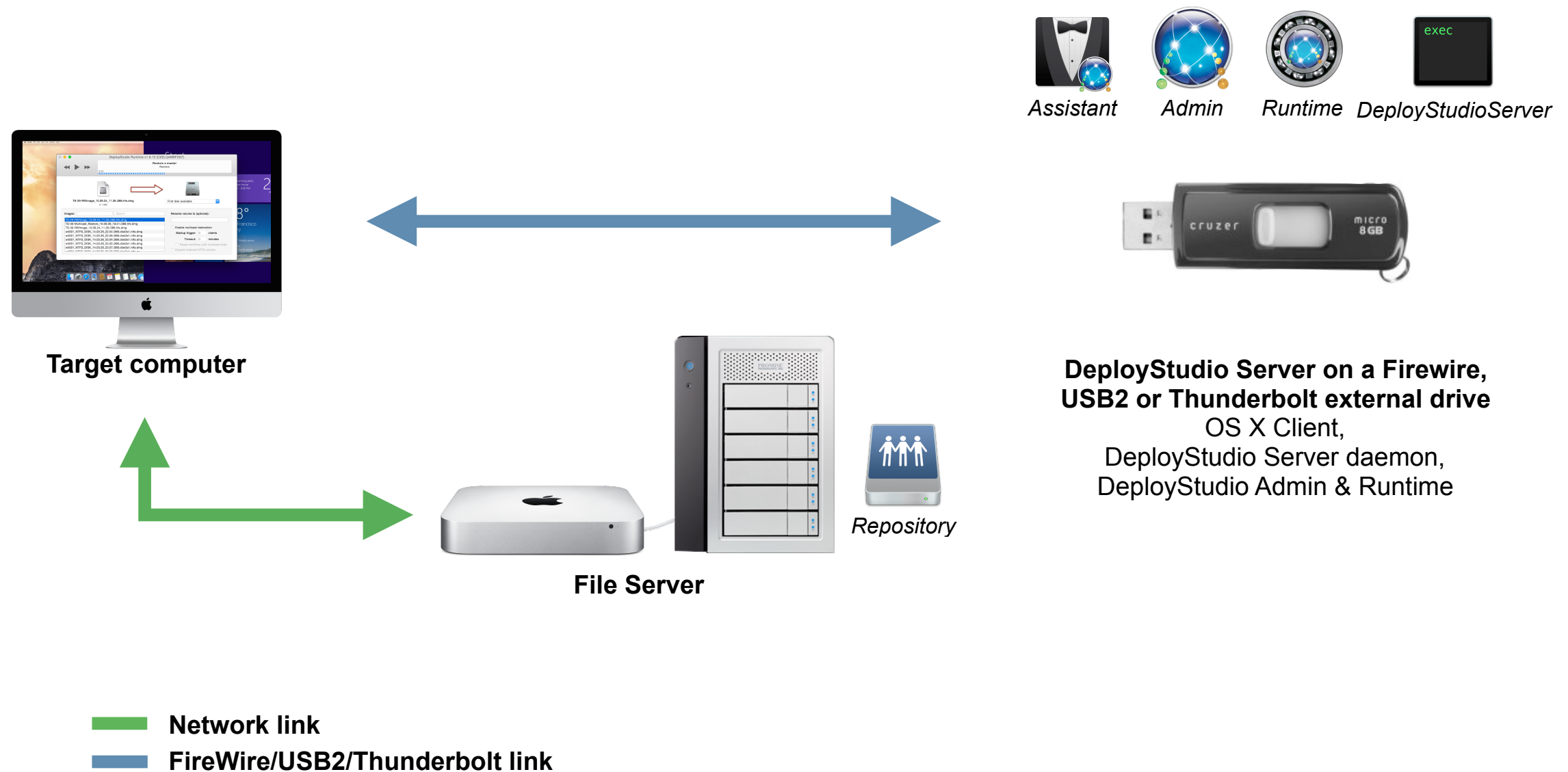


DeployStudio Server on a Firewire,
USB2 or Thunderbolt external drive
OS X Client,
DeployStudio Server daemon,
DeployStudio Admin & Runtime,
local repository folder

FireWire/USB2/Thunderbolt link

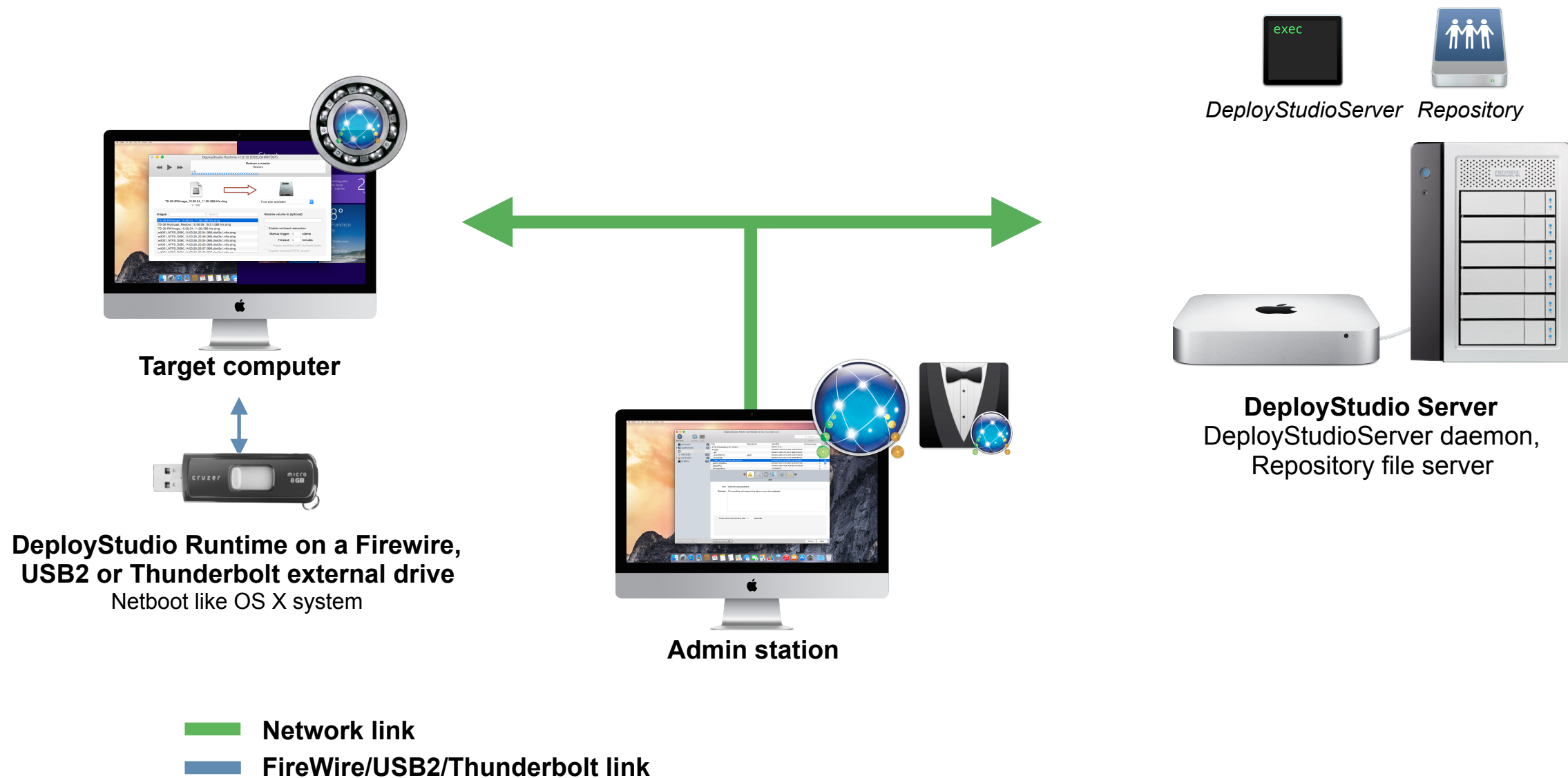
Deployment configurations

Lightweight external drive with network repository



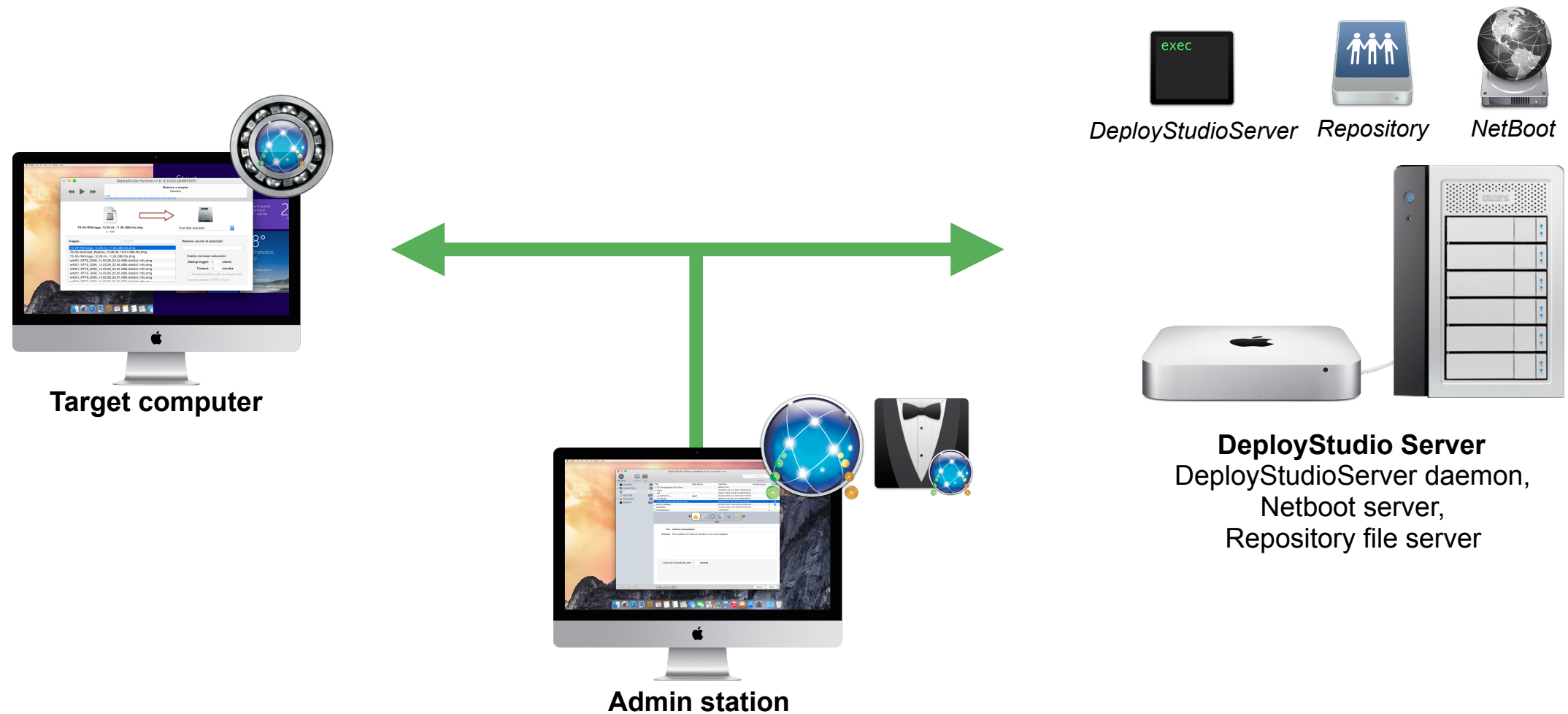
Deployment configurations

Lightweight external drive with a dedicated DeployStudio server and network repository



Deployment configurations

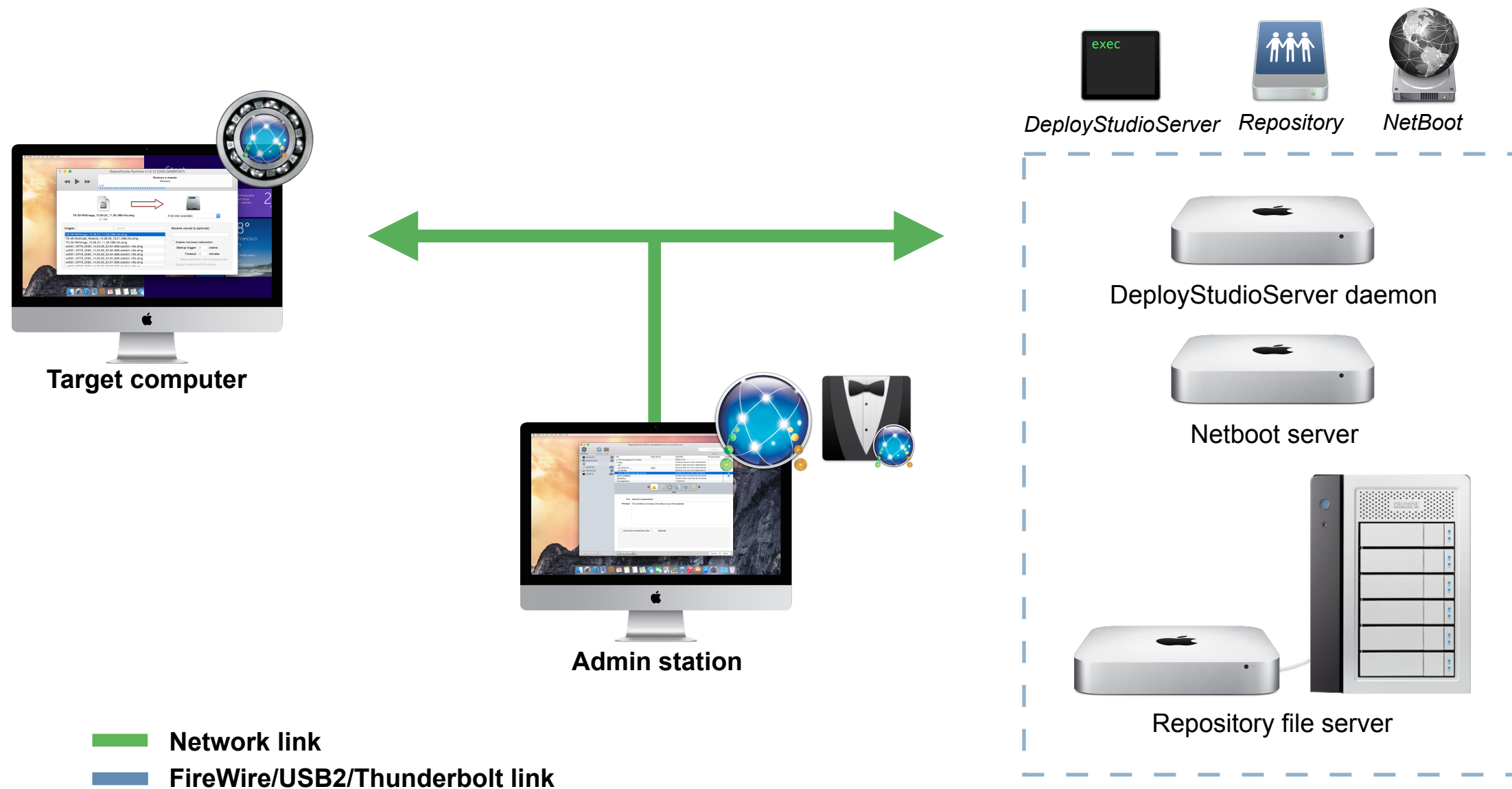
Full network (dedicated server + network repository + NetBoot)



- Network link
- FireWire/USB/Thunderbolt link

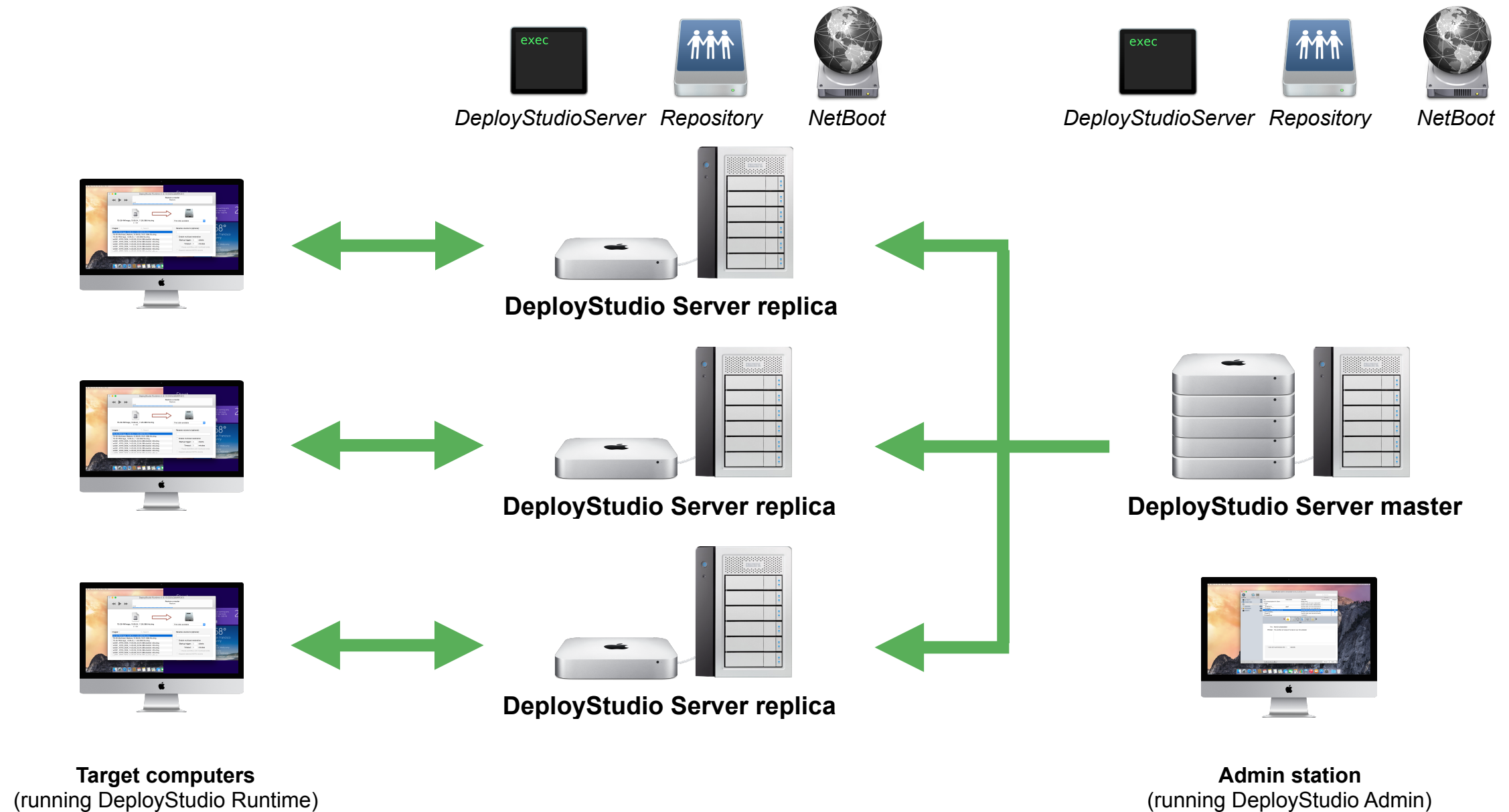
Deployment configurations

Full network (scalable)



Deployment configurations

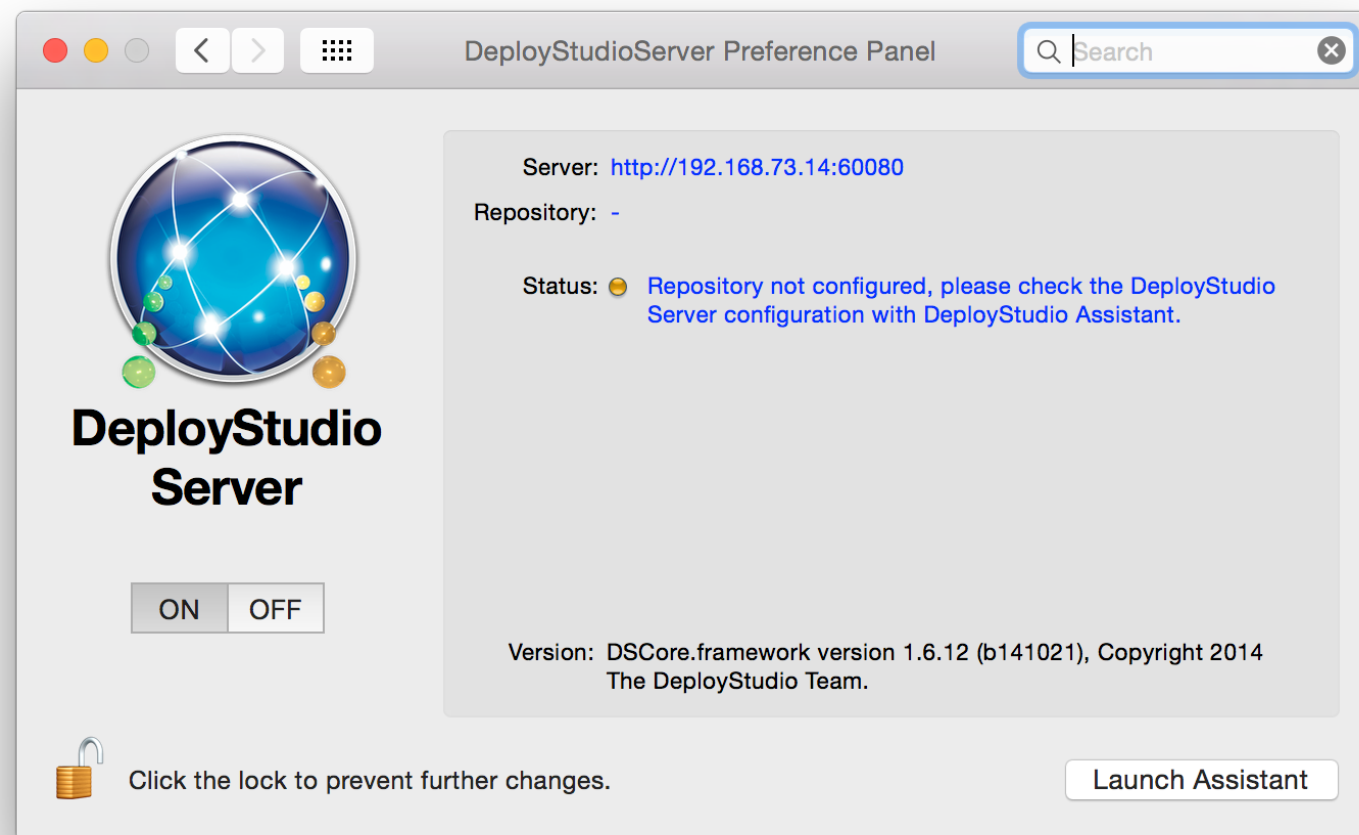
Master/Replica topology



Installing DeployStudio Server

Installing DeployStudio Server

- Install the DeployStudioServer_v1.6.x.pkg package on the server or on the booted external drive
- Open the “DeployStudioServer” preference pane in “System Preferences”
- Click on start to launch the DeployStudioServer daemon



Configuring DeployStudio Server

Configuring DeployStudio Server

- Launch “DeployStudio Assistant” located in /Applications/Utilities/
- Select “Set up a DeployStudio Server” then click on “Continue”
- Select the previously installed DeployStudio Server that should be automatically listed in the authentication pane
- Use any local or network user account then click on “Continue”

In a few steps, you can set up a remote DeployStudio server and create a DeployStudio NetBoot set for network deployments.

Do you want to:

- ☒ Set up a DeployStudio Server
- ☐ Create a DeployStudio NetBoot set
- ☐ Create a DeployStudio bootable external drive (Thunderbolt, USB or Firewire)

Please select a DeployStudio Server from the list or type its network address.

If you are configuring the server for the first time, any user defined in the server's bound directories can be used for login.

Click on Continue to log in.

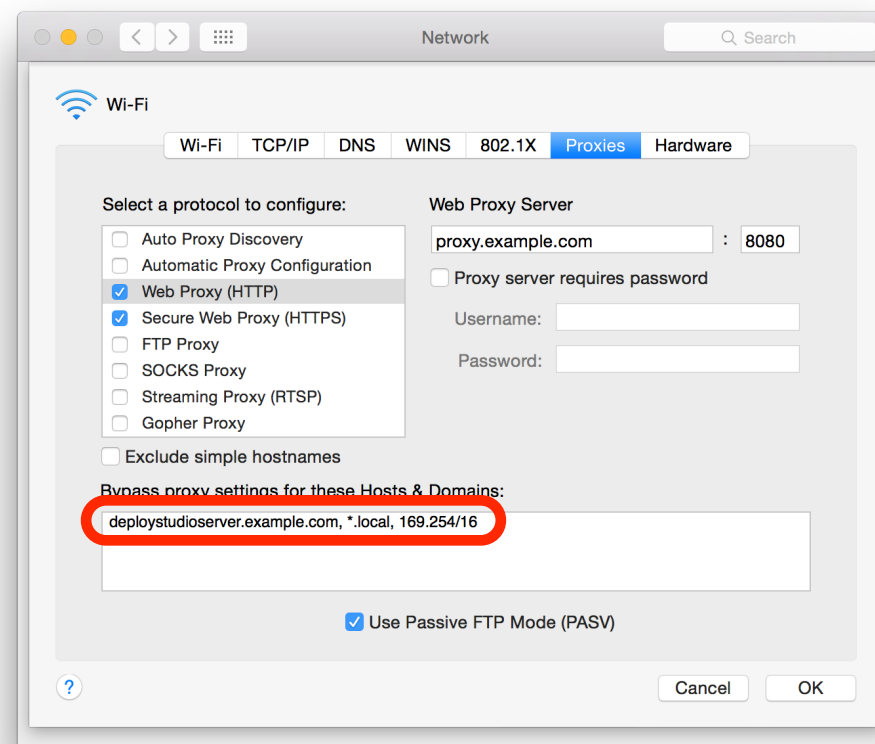
Server address:

User name:

Password:

Configuring DeployStudio Server

- Troubleshooting
 - If the authentication fails, check your network settings to ensure you bypass the proxy for your deployment server host



- DeployStudio Assistant can configure DeployStudio Server remotely. You may try to configure your server from another machine on the network where you installed the DeployStudio Server package (don't start the DeployStudio Server service)

Configuring DeployStudio Server

- Troubleshooting
 - If you are experiencing long delays when authenticating and using DeployStudio, it is probably related to your DNS configuration. Check the forward and reverse resolution of your server FQDN.

```
netboot01:/ host dss.example.com  
dss.example.com has address 172.16.10.10
```

```
netboot01:/ host dss.example.com  
10.10.16.172.in-addr.arpa domain name pointer dss.example.com.
```

Terminal and Network Utility are available in the Tools menu of DeployStudio Runtime.

Configuring DeployStudio Server

- You need at least one DeployStudio Server master. Choose this option if you are setting up your first DeployStudio Server

DeployStudio supports a basic master-replica topology. It allows you to create local replicas of your central DeployStudio Server to balance the load accross multiple locations or improve the service redundancy.

In order to configure a replica, make sure your master DeployStudio Server is up and running.

Do you want to setup:

- ☒ a master
☐ a replica

Configuring DeployStudio Server

- If you have a DeployStudio Server running on your network, you may want to define some replicas for better performance or load balancing
 - Select the replica role then click on “Continue”
 - Enter the DeployStudio Master URL with appropriate login credentials and sync options
 - Click on “Continue”

DeployStudio supports a basic master-replica topology. It allows you to create local replicas of your central DeployStudio Server to balance the load accross multiple locations or improve the service redundancy.

In order to configure a replica, make sure your master DeployStudio Server is up and running.

Do you want to setup:

- ☐ a master
☒ a replica

You want to make this DeployStudio Server a replica.

Please enter the master server address and credentials:

Master address:

User name:

Password:

- Sync:
- ☒ Computers
 - ☐ Bi-directional sync
 - ☒ Workflows
 - ☒ Disk images
 - ☒ Scripts
 - ☒ Files
 - ☒ Packages
 - ☒ Configuration Profiles

Configuring DeployStudio Server

- If you are installing DeployStudio Server on an external drive
 - Select “a local folder” then click on “Continue”
 - Type the local path to the repository then click on “Continue”

DeployStudio requires a repository to store and retrieve disk images, packages, scripts and configurations.

Use a local folder as repository if your are installing DeployStudio on an external disk and plan to store your disk images on it.

Use a network sharepoint as repository if you plan to:

- boot your computers from an external disk and access/store your disk images on the network,
- deploy your computers through the network using a DeployStudio NetBoot set.

Do you want to setup:

- ☒ a local folder
☐ a network sharepoint

DeployStudio requires a repository to store and retrieve disk images, packages, scripts and configurations.

Please define the local repository location:

/Users/Shared/DeployStudio

Locate

Configuring DeployStudio Server

- If the DeployStudio Server repository is located on the network
 - Select “a network sharepoint” then click on “Continue”
 - Set the network sharepoint parameters to be used by DeployStudio
 - Click on “Continue”

DeployStudio requires a repository to store and retrieve disk images, packages, scripts and configurations.

Use a local folder as repository if your are installing DeployStudio on an external disk and plan to store your disk images on it.

Use a network sharepoint as repository if you plan to:

- boot your computers from an external disk and access/store your disk images on the network,
- deploy your computers through the network using a DeployStudio NetBoot set.

Do you want to setup:

- ☐ a local folder
- ☒ a network sharepoint

DeployStudio requires a repository to store and retrieve disk images, packages, scripts and configurations.

Please define the network repository settings below:

URL:

Examples: `afp|smb|cifs://server/ShareName`
`nfs://server/Volumes/Data/SharedFolder`

Authentication (AFP or SMB/CIFS only)

User:

Password:

Advanced parameters

Use sub-folder:

Mount options:

Configuring DeployStudio Server

- Troubleshooting
 - DeployStudio Assistant doesn't try to mount the repository sharepoint when launched on the file server, so, you may try to configure your server from another machine on the network where you installed the DeployStudio Server package (don't start the DeployStudio Server service) if you experience issues later with DeployStudio Runtime while trying to mount the repository
 - Valid sharepoint URLs are:
 - `afp://fileserver.example.com/SharePointName`
 - `smb://fileserver.example.com/SharePointName`
 - `cifs://fileserver.example.com/SharePointName`
 - `nfs://fileserver.example.com/Volumes/Data/SharePointName`

Configuring DeployStudio Server

- Enable and type the email notifications settings if needed
- Click on “Continue”

DeployStudio Runtime can send automatically an email with the computer deployment status to the system administrators.

☒ Enable email notifications

Information level: ☒ Failures only
☐ Successes and failures

☒ Include log file in mail body

Sender email:

Recipient email:

SMTP server:

☐ Use TLS

Login:

Password:

Configuring DeployStudio Server

- Type the DeployStudioServer service port
- Enable Secure Server mode if you want the the data exchanged between the server and the other DeployStudio applications to be encrypted
- Enable “Reject unknown computers” to access to DeployStudio Runtime if required (computers not defined in the DeployStudio database)
- Click on “Continue”

DeployStudio Server uses the HTTP/HTTPS with basic authentication protocol to communicate with the other applications (Assistant, Admin and Runtime).

By selecting a SSL certificate, HTTPS protocol will be used to secure the whole network traffic.

com.deploystudio.server

DeployStudio default ports are 60080 for HTTP and 60443 for HTTPS. You will need to define another port if these ports are already used by another service running on your server.

Interface: Any

Port: 60443

By checking on the 'Reject unknown computers' button, computers not declared in the DeployStudio computers database will not be able to use DeployStudio Runtime and execute workflows.

☐ Reject unknown computers

Configuring DeployStudio Server

- Type the users' groups allowed to launch each DeployStudio application (optional)
- Groups' auto completion is based on the list of groups available on the host where DeployStudio Server is running. Auto-completion may not work properly if Open Directory finds thousands of groups
- Click on "Continue"

By default any user defined in the directories bound to the computer running DeployStudio Server has access to all the DeployStudio applications.

You may define a specific group of users to each DeployStudio application to meet your internal delegation requirements.

The Runtime application supports multiple groups (press return to validate each group). You'll be able to limit the usage of your workflows and/or disk images to one of these groups.

Assistant setup:

netdssadmins

DS Admin:

netdssadmins

DS Runtime:

netdssadmins

netdssusers

Configuring DeployStudio Server

- Define multicast properties according to your network administrator recommendations
- Keep the client disk write speed higher than the multicast stream to allow reliable restorations of compressed disk images
- Click on “Continue”

DeployStudio Server supports OS X disk images multicasting (DMG files), leveraging Apple Software Restore multicast technology.

Basically multicast is interesting when you need to deploy dozens of computers at once keeping the control of the network bandwidth.

Please contact your network administrator to help you to find out the best configuration according to your network equipment and infrastructure (standard multicast IP range is 224-239.254.254.254).

Interface:

Multicast TTL:

Address:

First stream port:

Maximum multicast data rate: 8 MB/s

Minimal client disk write speed: 15 MB/s

Allow up to different disk images streams to run in parallel

☐ Reconvert disk images before scanning (better multicast reliability)

Configuring DeployStudio Server

- Change the preferred computer identifier attribute if your workflows or scripts are exclusively based on Ethernet MAC addresses
- Click on “Continue” to update the server with the new settings

DeployStudio database can identify computer records by hardware Serial Number or MAC address which are both unique for each system.

When identifying a computer record, DeployStudio looks first for the hardware Serial Number. If undefined, it will use the MAC address.

If you want DeployStudio to look first for the MAC address, change the preferred identifier attribute to Ethernet MAC address.

Preferred identifier attribute:

- ☒ Hardware Serial Number (default)
☐ Ethernet MAC address

Service providers are supposed to restore the original hardware Serial Number after replacing a Mac logic board. For database consistency, make sure the job has been done correctly.

Creating a DeployStudio NetBoot Set

Creating a DeployStudio NetBoot Set

- Install DeployStudio Server on the latest OS X client you have (don't start the DeployStudio Server service)
- Launch "DeployStudio Assistant" located in /Applications/Utilities/
- Select "Create a DeployStudio NetBoot set"
- Click on "Continue"

In a few steps, you can set up a remote DeployStudio server and create a DeployStudio NetBoot set for network deployments.

Do you want to:

- ☐ Set up a DeployStudio Server
- ☒ Create a DeployStudio NetBoot set
- ☐ Create a DeployStudio bootable external drive (Thunderbolt, USB or Firewire)

This assistant will help you to produce a pre-configured NetBoot system with the DeployStudio Runtime application in a few easy steps.

You will need this NetBoot system and a NetBoot server if you are planning to deploy your computers through the network.

If you run this assistant on a Universal Binary OS X system, you'll get a Universal Binary NetInstall system that will boot both Intel and PowerPC based Macs.

Otherwise, you'll need to run this assistant on each platform, then copy the produced NetBoot system to your NetBoot server.

Do not forget that you must create your NetBoot system with the latest OS X system you have. If your netboot image is not up-to-date, the latest Apple hardware may not be supported and will not boot.

Creating a DeployStudio NetBoot Set

- If you are installing DeployStudio Server on a OS X client, DeployStudio Assistant enables you to configure and launch the NetBoot service
 - Enable NetBoot service on the appropriate network interface
 - Enable DHCP service only if no other DHCP server is running on your network
 - Click on “Continue”

This computer is running OS X client.
If you plan to upload the produced NetBoot set to a NetBoot server, just click on Continue.

If you want to NetBoot client machines from this computer, you need to enable the NetBoot service. You may also enable the DHCP service if there's no DHCP server running on your network.

☒ Enable NetBoot service on interface Ethernet

☒ Enable DHCP service

IP range: 192.168.73.100 to 192.168.73.150

Mask: 255.255.255.0

Router: 192.168.73.1

DNS: 192.168.73.1

Search domain: example.com

Creating a DeployStudio NetBoot Set

- Select the base system volume (could be a mounted disk image)
- Type the NetBoot set name and unique identifier
- Select the NetBoot protocol and keyboard language
- Type your network time server
- Click on “Continue”

A NetBoot system is defined by a human readable name and a unique identifier to distinguish itself from the other ones on the network.

The unique identifier is a number between 1 and 65535. Set a value greater than 4095 if you intend to balance the load over several NetBoot servers.

Source base system:

System name:

Unique identifier:

Protocol:

Language:

Network time server:

Creating a DeployStudio NetBoot Set

- The NetBoot set embeds a lightweight OS X system that will start automatically the DeployStudio Runtime
- You might use Bonjour to connect automatically the Runtime to the first available DeployStudio Server or define a specific DeployStudio Server address and connection port according to the server configuration
- Click on “Continue”

The DeployStudio Runtime must connect to a DeployStudio Server in order to get all the informations required for the deployment.

You can define a specific DeployStudio Server to make the Runtime connect automatically to this server or use the "Bonjour" protocol to discover the available servers on the local network.

☐ Use "Bonjour" protocol to discover available servers

☒ Connect to specific servers

Preferred:

Alternative:

DeployStudio Runtime checks server's build version once authenticated and alerts the user if they differ.

☐ Disable versions mismatch alerts

Creating a DeployStudio NetBoot Set

- You must authenticate to use DeployStudio Runtime. You may want to define a default login/password to automate the authentication process
- Enter a remote control login/password to enable the Apple Remote Desktop agent
- Set a timeout if required (type 0 to reboot immediately on workflow completion)
- Click on “Continue”

Communications between the DeployStudio Runtime and the Server are encrypted. You can define here a default login and password to fully automate the connection process.

Default login:

Password:

DeployStudio Runtime can be controlled remotely with a standard VNC client, ARD Admin or the built-in Screen Sharing client.
In order to enable remote sharing, define your own password below.

ARD user login:

ARD/VNC password:

☐ Display Runtime log window by default

☒ Put display to sleep after minutes

☒ Reboot automatically seconds after workflow completion

Creating a DeployStudio NetBoot Set

- Select the optional tools you may need within your NetBoot set
- Customize the Runtime main window title and desktop background according to your needs

Optional tools to include in the bootable system:

☐ Python

☐ Ruby

Advanced options:


☐ Custom TCP stack settings (if performance is disappointing)

☒ Disable wireless support (faster boot)

☐ Use SMB1 protocol by default (recommended for OS X 10.9)

☐ Custom title:

Background image:



Creating a DeployStudio NetBoot Set

- Finally, define the location where the NetBoot set should be created
- Click on “Continue”
- If you are not running the assistant on the NetBoot server, you will have to copy the DeployStudio NetBoot Set folder to the NetBoot server
- Please, refer to the OS X Server documentation to configure your NetBoot Server

A NetBoot system is composed of several files embedded in a folder with the ".nbi" extension.

If you are running this assistant on the NetBoot server, you can leave the destination folder to its default value (/Library/NetBoot/NetBootSP0).

If not, select another folder where the NetBoot system will be generated.

Destination:

☐ Make it the default NetBoot set

☐ Delete existing DeployStudio NetBoot sets

Creating a DeployStudio Bootable External Drive

Creating a DeployStudio External Drive

- Install DeployStudio Server on the latest OS X client you have (don't start the DeployStudio Server service)
- Launch "DeployStudio Assistant" located in /Applications/Utilities/
- Select "Create a DeployStudio bootable external drive"
- Click on "Continue"

In a few steps, you can set up a remote DeployStudio server and create a DeployStudio NetBoot set for network deployments.

Do you want to:

- ☐ Set up a DeployStudio Server
- ☐ Create a DeployStudio NetBoot set
- ☒ Create a DeployStudio bootable external drive
(Thunderbolt, USB or Firewire)

This assistant will help you to create a bootable external drive with the DeployStudio Runtime application in 5 easy steps.

The generated system allows you to connect to a DeployStudio Server on your network and access to the disk images stored in a share point. Consider it as an option when no NetBoot service is available.

If you intend to create a all-in-one DeployStudio system, install a full OS X client on your external disk and DeployStudio Server configured with a local repository.

Do not forget that you must create your bootable external drive with the latest OS X system you have. If the system is not up-to-date, the latest Apple hardware may not be supported and will not boot.

Creating a DeployStudio External Drive

- Select the base system volume (could be a mounted disk image)
- Select a volume to erase with a DeployStudio bootable system
- Enable the single partition option if you want to erase all the other partitions of the disk of the selected volume
- Select the keyboard language
- Enter a network time server
- Click on “Continue”

Please select a source base system and a target volume (4 GB minimum).

Source base system:

Target volume:

☐ Partition disk with a single partition

Language:

Network time server:

All the data contained on the selected target volume will be totally erased.

Creating a DeployStudio External Drive

- The system to be installed is a lightweight OS X system that will start automatically the DeployStudio Runtime
- You might use Bonjour to connect automatically the Runtime to the first available DeployStudio Server or define a specific DeployStudio Server address and connection port according to the server configuration
- Click on “Continue”

The DeployStudio Runtime must connect to a DeployStudio Server in order to get all the informations required for the deployment.

You can define a specific DeployStudio Server to make the Runtime connect automatically to this server or use the "Bonjour" protocol to discover the available servers on the local network.

☐ Use "Bonjour" protocol to discover available servers

☒ Connect to specific servers

Preferred:

Alternative:

DeployStudio Runtime checks server's build version once authenticated and alerts the user if they differ.

☐ Disable versions mismatch alerts

Creating a DeployStudio External Drive

- You must authenticate to use DeployStudio Runtime. You may want to define a default login/password to automate the authentication process
- Enter a remote control login/password to enable the Apple Remote Desktop agent
- Set a timeout if required (type 0 to reboot immediately on workflow completion)
- Click on “Continue”

Communications between the DeployStudio Runtime and the Server are encrypted. You can define here a default login and password to fully automate the connection process.

Default login:

Password:

DeployStudio Runtime can be controlled remotely with a standard VNC client, ARD Admin or the built-in Screen Sharing client. In order to enable remote sharing, define your own password below.

ARD user login:

ARD/VNC password:

☐ Display Runtime log window by default

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☒ Reboot automatically seconds after workflow completion

Creating a DeployStudio External Drive

- Select the optional tools you may need within your NetBoot set
- Customize the Runtime main window title and desktop background according to your needs
- Click on “Continue”

Optional tools to include in the bootable system:

☐ Python

☐ Ruby

Advanced options:


☐ Custom TCP stack settings (if performance is disappointing)

☒ Disable wireless support (faster boot)

☐ Use SMB1 protocol by default (recommended for OS X 10.9)

☐ Custom title:

Background image:



Creating a DeployStudio External Drive

- Click on “Continue” to start creating the bootable system
- It may take a while depending on the speed of your disk

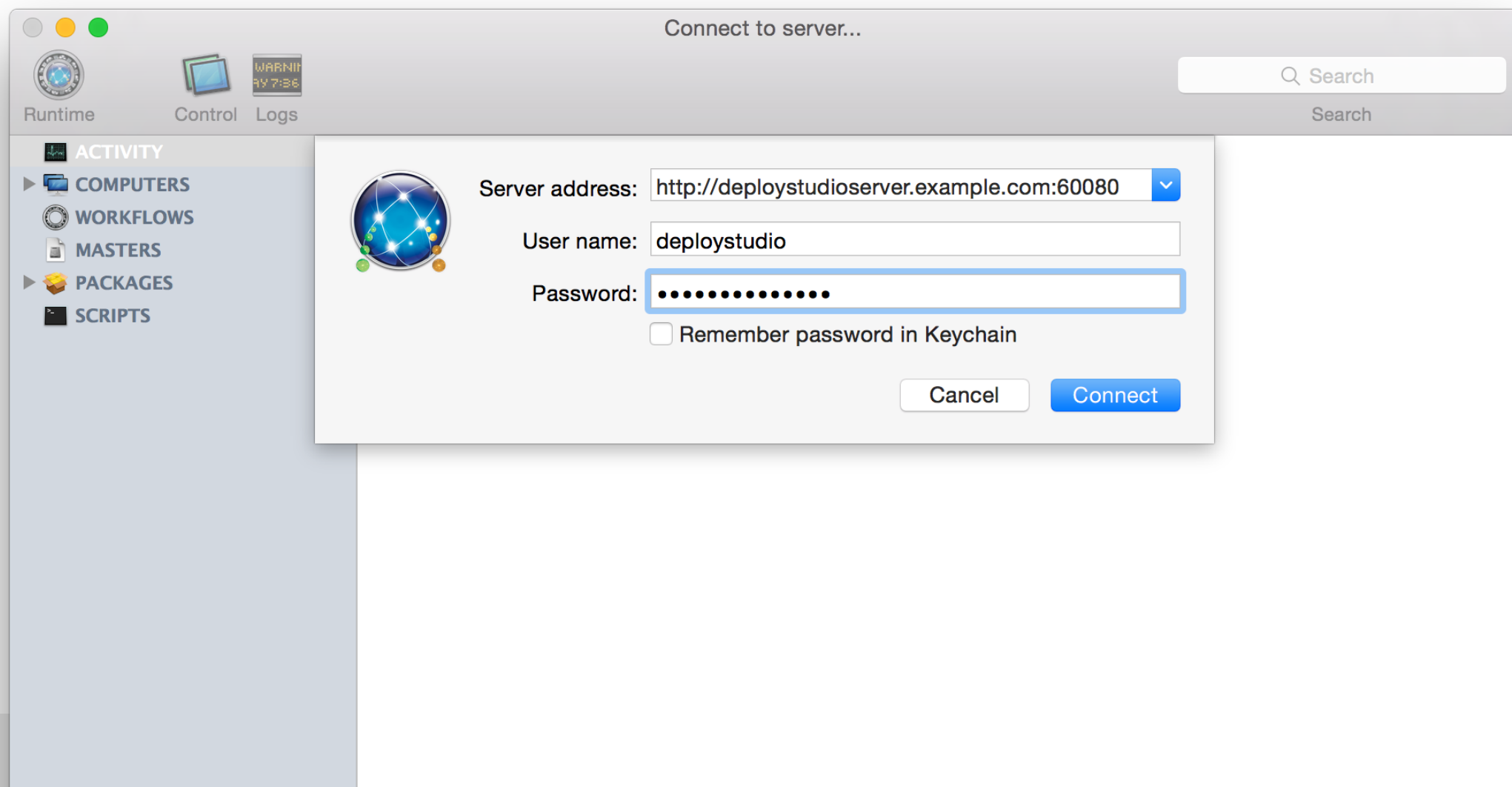
Please, click on Continue to start creating the DeployStudio bootable external drive.

This operation should take about 5 minutes on a FireWire/USB2 external drive, 20 minutes on a reasonably fast USB2 key.

Testing your installation

Testing your installation

- Launch “DeployStudio Admin” located in /Applications/Utilities/
 - You are invited to enter the DeployStudio Server address, your login and password. You can use any server’s user account (local or bound directories)
 - Click on “Connect” when done
 - If your setup is correct, the server configured previously should be automatically listed in the “Server address” popup button

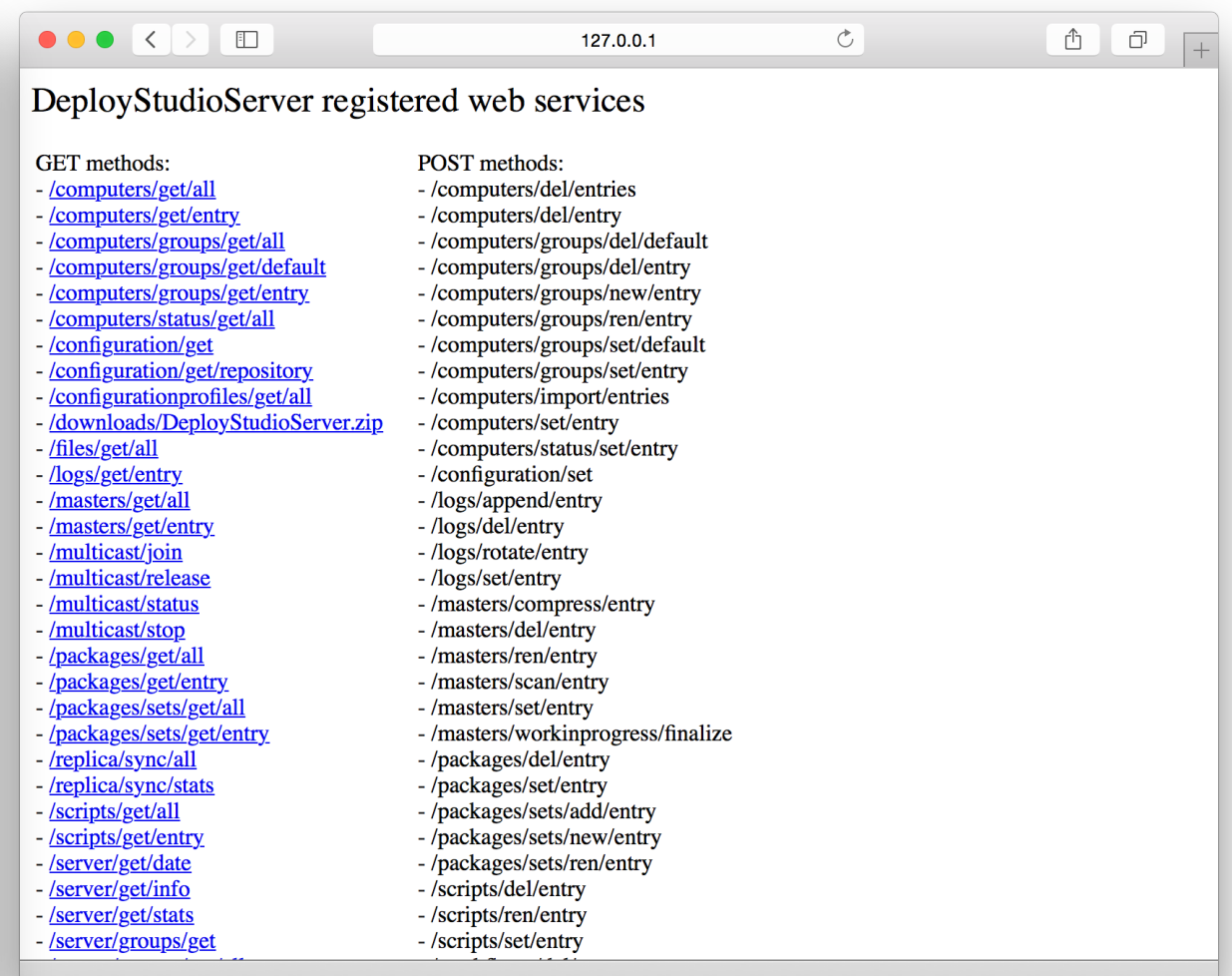


Testing your installation

- External drive mode
 - Boot the computer to image on your external drive
 - Launch DeployStudio Runtime located in /Applications/Utilities
- NetBoot mode
 - Restart the computer to image and keep pressing the “N” key during the initial boot to enter in NetBoot mode
 - If the computer doesn’t netboot, restart on the existing OS X volume and check that the DeployStudio NetInstall system is listed in the Startup System Preferences pane (check your NetBoot server configuration if no network system is found)
 - Once the system is booted, DeployStudio Runtime is automatically launched and bound to a server
- Type your login and password if prompted
- Select the example workflow “Create a master from a volume”
- Click on the Play button

Testing your installation

- Troubleshooting
 - Safari might help you to understand what's wrong with your installation
 - Enter the DeployStudio Server URL in the address bar then try some of the web services available



DeployStudio Server

Contacts

- <http://www.deploystudio.com>
- <http://www.deploystudio.com/Forums>
- info@deploystudio.com

