

Putting It All Together Series

Symantec™ Deployment Solution 7.1 SP1: Getting Started (Quick Start) Guide

Who should read this paper:

This is designed to get the product working for any customer, quickly. Use the document as either a starting point, or simply as a resource for using the product day-to-day. The goal is to ensure a fast return on investment for the product and ensure product satisfaction and continued use.

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Executive Abstract

Though the User Guide can be useful in learning the product features, it is not designed to replace consulting services and actually tell “you” what to do and when. In recognition of the initial learning curve for the product, this guide has been prepared to simply get a new customer up-and-running quickly, prior to then customizing the product for their own environment.

This document contains information to:

- Assist in a quick and very high-level understanding of some related Symantec Management Platform product features and configuration advice.
- Assist in a quick configuration of the product.
- Assist in a quick test of the product’s features and hopefully quick discovery of success!
- Provide understanding of some common issues and problems.
- Give advice for further information and documentation.

Preparation & Testing

Don't start using a production with production systems and/or data. Build a lab, and test. Even in smaller environments this is extremely useful to discover the unique needs of an environment before problems arise. Often, support calls can be traced back to not having tested previously.

And remember to make backups, especially of the database and images (or the entire deployment share point)! Another regular call is to recover lost data, which Symantec can't do.

Finally, remember to keep documentation handy. Later in this document, references are supplied for further reading and troubleshooting materials. Download and/or bookmark these for quick reference moving forward.



Best Practice: The Lab should match where possible the real world, though scaled down, in order to both uncover problems and pre-test potential solutions. Versioning must match in the Lab and Production in order to ensure test results are valid.



Caution! Prior knowledge of Deployment Solution 6.x is now largely irrelevant and should be forgotten for the most part. Scalability and product features are significantly different, as is the console. Other than the basic concepts of deployment, readers should be aware that learning fresh will serve them better than an attempt to translate prior knowledge to the new processes.

Scalability and Related Considerations.

The first thing to understand is that Deployment Solution is mostly dependent on the Symantec Management Platform (SMP or Notification Server) and its scalability. Therefore, to understand the limits of Deployment Solution, you first must understand the limits of the SMP.

It is also important to understand that Deployment Solution relies heavily on task servers for functionality and will NOT work without it. Task Server placement is critical, and must – *must* – be linked to Package Servers (e.g. for image replication), along with the Deployment Task Handlers (Deployment Site Server components - e.g. for running Ghost in remote locations). This is a key scalability issue and cannot be forgotten.

PXE is a consideration, but unlike the three services mentioned above, is not as critical in scalability discussions.

Here are a few key things to remember relative to SMP, Task Servers, Package Servers, and the Deployment Site Services:

- Each SMP installation scales to about 20,000 to 25,000 connected and active end-points. For more, Hierarchy and/or separate SMP installations should be considered.
- Each Task Server can support about 5,000 actively connected clients. A Task Server Site Server should be planned for each 5000 clients.



Best Practice: Do not use the SMP as a Task Server except in very small installations (e.g. less than 500 total end points).

Recommended: [HOWTO48411](#) discusses more of the fine points of configuring Task Server

- Package Servers are largely dependent on bandwidth and location. As a general rule, at least one Package Server should be located in each WAN location. In each location, there should, generally, be as many Package Servers as Task Servers, or more.
- PXE Servers are scalable based on DHCP in your environment and/or IP Helpers (router configurations). One can be placed on every subnet at one extreme, or there can be only one servicing every DHCP server at the other extreme. The only true scalability requirement is the ability to transfer the 140M Preboot Configuration to any connected computer. If the WAN can endure this, then a remote PXE server may not be required.
 - Note: They do require the server to also be a Task Server and Package Server with the DS Site Components installed.
 - Client connectivity max should be considered about the same as the SMP, but possibly less – up to about 20-25K, but not more in the current release.

This is the raw scalability considerations, but there are more things that should be remembered and/or

considered as you design your installation, including:

- Deployment Site Server components should be located on *every configured Task Server*. On each Deployment Site Server MUST also be configured Package Services, or the Deployment Site Server components will not function properly. This results in the following additional considerations:
 - There should be sufficient room on all Task Servers for the Deployment images.
 - There should be sufficient room on all Task Servers for the normal package server load (e.g. patches, Software Delivery packages, etc).
 - There are some exceptions to the rule that every Task Server must have Deployment Site Services, but as a general rule that should be avoided. That scenario will not be discussed in this document.



Best Practice: Configure every Task Server to also have Package Services and Deployment Site Services. Each Package Server need not also be a Task server.

- Have at least one Task Server configured other than the SMP.
- If possible, configure the SMP to not be a task server.



- **Important Note:** By Default, the SMP does *not* have Package Services installed, and this should not be changed! Installing Package Services on the SMP may appear to solve some DS issues, but causes known problems. It is far better to remove the Task Services from the SMP instead per the above recommendations.
- Remember that images take *a lot* of space, and that they will, by default, be replicated to ALL of package servers. The images are stored by default under your Symantec Management Agent (SMA) folder (defaults to C). Sufficient drive space should be allocated to where you install the SMA on Site Servers.
- Automation Folders can save a lot of bandwidth and improve performance, but are only good for re-imaging of managed systems. PXE or some form of removable media is required for un-known systems.



Caution: Automation Folders require special attention. Please refer to [HOWTO83910](#) To ensure they are managed correctly.

- Pay close attention to the source location of captured images (see HOWTO21731). If the source location of a package is damaged or removed, that damage is generally replicated out to all package servers rather than the “good” information replicated back. Thus, if there is any risk of a Site Server where you capture images being damaged or removed, images should be relocated to the NS first



- **Best Practice:** Capture images to the SMP, or move captured images to the Notification Server, to ensure safety of the image. Images can be moved by copying the package to the SMP's Images folder and then modifying the package properties to point to the SMP.

About using Hierarchy with Deployment Solution

Simply put, Hierarchy was not really a consideration with the initial build of Deployment Solution version 7, and therefore, there are significant weaknesses in the ability Deployment Solution has to be scaled to the hierarchy.



Best Practice: As a general rule, we recommend against doing anything in the hierarchy with Deployment Solution. If you have a Hierarchy, we recommend managing everything DS related from the child servers, not the parent.

If you must use Hierarchy, consider the document “Putting it All Together: Scaling Deployment Solution to the Enterprise” for more information.

Getting Going – Quick Steps.

The following table contains a simple set of steps you can follow to get up and running with DS 7.1

Step	Description / Details
Enable all appropriate DS Policies	<p>Under Settings All Settings, expand the Agents and Plugins, find the Deployment Solution section, and enable all of the install policies, and all of the upgrade policies, <i>except for the automation folders</i>, at least at this time.</p> <p>NOTE: Be sure to avoid Uninstall Policies. This is a common error. Those must only be used very judiciously under certain circumstances, but not at the same time (to the same target) as the install policies.</p> <p>NOTE: For more information on Automation Folders, refer to HOWTO83910</p>
Configure at least one additional Site Server with Task and Package services.	<p>Though in small environments, only the SMP may be needed, we still recommend at least one additional Site Server. For testing and learning both, it's best as well, to better understand how Site Servers function. Remember the scalability requirements for Site Servers in the section above.</p>
Create at least one new Preboot environment.	<p>It is recommended you use 32bit builds in general because of driver support (32bit tends to be more commonly supported). For the sake of our discussions, we will assume you're using a 32 bit WinPE Preboot configuration.</p> <p>NOTE: Preboot configurations are client policies and take time to download and build locally (remotely) on each PXE server, so build with plenty of advanced notice. Depending on other settings in the SMP, the process to build these on PXE servers may take up to Eight hours or more.</p>
Configure PXE Services to start automatically	<p>This assumes you have a DHCP enabled environment, which at least initially, we highly recommend. Automation folders are an alternative, but for this scenario we are assuming you will be using PXE.</p> <p>By default, PXE services are installed with the Deployment Task Handlers (DS Site Services) on each Task Server / Package Server combination so they should be on the site server you configured above, though that may take time.</p> <p>Once there, only one of the PXE / SBS services is set to start automatically and is running. Change the other 3 to be the same and start them.</p>
Create a Backup Image job	<p>This job should be executed prior to capturing an image to serve as a baseline for the source system without Sysprep ever running. It should contain the following:</p> <ol style="list-style-type: none"> Reboot to Automation Capture Image (see the Capture Image job below for more information) Reboot to Production

Step	Description / Details
Create a Capture Image job	<p>This is the step to create the base image that will be distributed to all workstations and should contain the following task(s):</p> <ol style="list-style-type: none"> (1) Prepare for Image Capture (this runs Sysprep and will prepare the NS Agent for duplication by pulling out the GUID. It will also shut-down and restart the system.) The task will request you to select one of the preboot configurations you created in step #3 above. Other settings are optional. (2) Capture Image (this will run Ghost.exe). For this document, use Windows 7, and use Current Key. All other settings are optional. <ol style="list-style-type: none"> (a) A common error is to run this step first or alone. Doing so generally causes this to be executed in Production instead of Automation and the task fails. (3) Reboot to Production. We use a reboot task at the end to tell the system "We're done in automation - go back into production." At this point though, because sysprep ran in the first step, the minisetup wizard will run and make it appear that the system is "new".
Create a basic Deploy Image job	<p>This is a simple job that can be applied to just about any workstation to test the process, and can serve as a template or launching point for other more complex jobs later (see below). The recommended tasks are as follows:</p> <ol style="list-style-type: none"> a) Reboot to Automation. This step is to bring an existing system into a re-imaging state. For new computers (e.g. blank drives) this is not necessary. Remember to select the correct pre-boot environment. b) Deploy Image. This step runs Ghost and applies an image to the computer captured in the previous job. For our Windows 7 image, use the Current Key option. All other settings are optional. <ol style="list-style-type: none"> i) (optional) Select "Use DeployAnywhere" to ensure drivers are injected to the image when deploying to un-like systems. If there are problems, a first step in troubleshooting is to simply de-select this option. c) Reboot to Production. After the image is down, the system has to boot to production to complete the MiniSetup (Sysprep) process and make the system unique on the network. This should be completed before the user tries to use the computer.

Step	Description / Details
(optional) Expand the Deploy Image job – add more functionality / automation.	<p>Jobs can contain several tasks, and even other jobs. The basic job listed above is good, but is very basic, and lacks many features that can be included, including some of the following optional tasks. NOTE: All of the following is optional, not required for basic use:</p> <ul style="list-style-type: none"> a) Capture Personality. This would be used for migrating personal data from an existing system to a new one and must be performed prior to actually imaging to preserve the data. b) Reboot to Automation. This step is actually optional and not required for jobs used in Initial Deployment. c) Partition Disk. Some find it useful to partition or even wipe disks prior to deploying an image. d) – Place Holder -- Deploy Image task fits here. e) Reboot to Production. This step is actually optional and is often removed for troubleshooting in Automation. f) Apply System Configuration. This is used to further customize the computer, for instance, with a naming convention, to join a domain, or whatever. Existing computers (being reimaged) would not need this step. g) Apply Personality. If a personality was captured, it should be applied here. h) Additional tasks such as Software Delivery. Many customers find it useful to daisy-chain more tasks onto the end of the deployment to further customize the PC to the user's requirements.
Test, test, test	Nothing can replace the value of solid testing, so we've added it to the list to be sure it is remembered.
Create a Run Script task for testing	<p>Often customers who are troubleshooting complain that “nothing happens”. We recommend having a very simple pop-up message task handy for this to verify communication between the SMP and the client:</p> <ul style="list-style-type: none"> • Run Script is the task type • VBScript is the execution type • MsgBox “hi” • Under Advanced (button): <ul style="list-style-type: none"> ○ In Automation, it MUST be set to “System” ○ In Production, it SHOULD be set to “currently logged on user”

Common Issues

- Be sure to use Jobs, not just single tasks (except perhaps for detailed troubleshooting). A common first call is an attempted “Capture Image” task that fails because it ran without first booting to Automation. This is common as well for former 6.9 users who only had a single task that did everything, which is not the same as in 7.1.
- Forget what you know about DS 6.9. Some of the principles will carry over, but most will not. Learn the new product.
- Pay attention to Site Server configurations. This can cause many problems, especially with image replication, or delays in preboot configuration rebuilds, etc. It’s very common to misconfigure the SMP and/or site servers, which can cause a cascade of issues for DS.
- Remember that PXE is still PXE – a standard outside the control of Symantec. DHCP and/or Routers (IP Helpers) and the limitations around them are the defining factors for connecting to a PXE server. This has not changed, and never will, because it is a standard. Our PXE server simply listens, but you, the company, are responsible for getting the broadcast traffic to the PXE server.
- Image Storage is a big issue. Please refer to [HOWTO21731](#) to be sure you know how this works. However, here are a few keys:
 - Place site services on remote locations where possible to reduce bandwidth over the WAN.
 - Remember that ALL images are, by default, replicated to ALL Deployment servers (site service) via package replication per the settings in the image package. Change this quickly if you need to avoid bandwidth issues.
 - If you find yourself out of room, consider a mount-point (unsupported) or using HTTP imaging (where the images can be stored anywhere per IIS). The agent can also be moved to another drive.
- Remember the key difference between Backup images and normal images are package replication. Backup Images are NOT replicated to all site servers but are only kept on the one captured to, because it is meant to *only* be restored to the system from which it was captured.

Wrapping it up.

Deployment Solution may seem a little daunting, but once you get going, you'll find it's not really that bad. Remember to test often, and to not assume functionality not indicated. Be careful with advice from others to perform "cool" custom tasks. They may be unsupported and lead to confusion unless you're an advanced user. What we've supplied here is enough to get you going.

After you've become comfortable with this, and need more, there are several documents below that may be of further assistance. Otherwise:

- Keep up with new versions and watch the release notes. We're actively involved in both building a new version and improving the current version.
- Bookmark the Support Recommended Reading list KB. This is updated with current "finds" from the support world.
- Enjoy the product.
- Remember to call support with problems before they become huge problems! We're here to help!



Below are some documents and links well worth noting as you continue to use the product.

Mentioned Documents and/or KB's from above:

- HOWTO21731: Image Storage and Replication
- HOWTO48411: Task Management Best Practices
- HOWTO83910: Managing Automation Folders



- **Best Practice:** Bookmark: <http://www.symantec.com/docs/HOWTO55859> "*Support Recommended Reading List for Deployment Solution 7.x.*" This contains all the above bookmarks and more. It is a recommended starting point for any troubleshooting!

Additional Documents in this series:

- Putting It All Together: Deployment Solution Lab Environments
- Putting It All Together: Getting the Most From Task Server
- Putting It All Together: Managing PXE with Deployment Solution
- Putting it All together: Deployment Solution in the Enterprise

More Information

Visit our website

<http://enterprise.symantec.com>

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