



Upgrading the 1E Nomad Suite

(including ActiveEfficiency, PXE
Everywhere and WakeUp)

Version 1.2

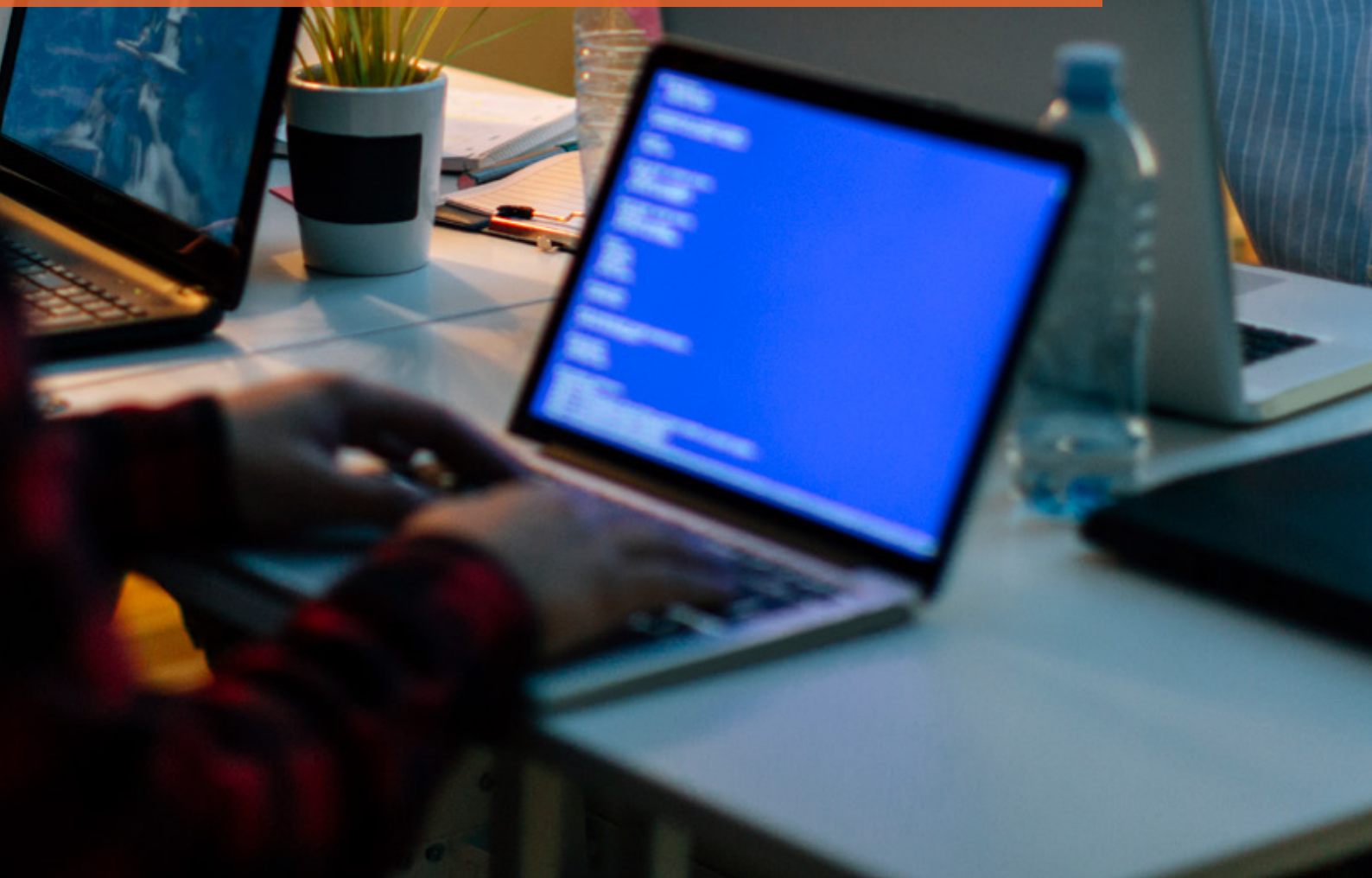


TABLE OF CONTENTS

Introduction.....	3
The Nomad 6.2 Suite and ConfigMgr.....	3
Upgrade Process: Overview and Best Practice.....	3
Overview.....	3
General Approach.....	3
Upgrade Sequence.....	4
Best Practice.....	6
Upgrade subnets as a whole.....	6
Verify success.....	6
Upgrade software and usage independently.....	7
Maximize ConfigMgr client health.....	7
Upgrade as new releases become available.....	7
Upgrade FAQ.....	7
Agent Upgrades.....	7
Content.....	8
ActiveEfficiency.....	8
Operating System Deployments.....	9
The Upgrade Scenarios.....	9
Nomad Upgrade Only.....	9
In-place Upgrade of ConfigMgr and Nomad.....	9
Side-by-Side Migration of ConfigMgr and Nomad.....	10
Upgrade Process.....	10
Nomad and PXE Everywhere.....	10
1E WakeUp.....	12
Resources.....	13

Introduction

The aim of this document is to describe the steps required to implement the latest version of the 1E Nomad Suite (that includes ActiveEfficiency, PXE Everywhere and 1E WakeUp) within the ConfigMgr operating environment. All of the aforementioned products are included with the purchase of Nomad. Throughout this document, the term '1E Nomad' is used to describe this suite of products.

At the time of writing the latest release of Nomad is 6.2. The Nomad 6.2 release coincides with a new release of PXE Everywhere 3.1.300 that supports installation of the PXE Central component on Windows Server 2016.

New versions of this document will be published to coincide with all future releases of the 1E Nomad Suite.

The Nomad 6.2 Suite and ConfigMgr

The purpose of this guide is to present the 1E Nomad upgrade process within the context of the latest 1E Nomad release (6.2) where this may also include an upgrade from ConfigMgr 2012 or later to Current Branch (CB). Although the steps provided within this guide do refer to the latest release of 1E Nomad at the time of writing, the principles outlined will be applicable to all future releases. Should any deviation be required due to enhancements or new features in either ConfigMgr or Nomad, then this document will be updated.

This guide describes the process of upgrading the 1E Nomad Suite (including ActiveEfficiency, PXE Everywhere and WakeUp). It does not include the steps required to upgrade ConfigMgr and only refers to this process within the context of performing a 1E Nomad upgrade.

Readers can find details of the ConfigMgr upgrade process in the Resources section of this document.

Upgrade Process: Overview and Best Practice

Nomad upgrades are simple, straightforward, and low-impact. However, as with any change, specific conditions and circumstances might require unique consideration and handling that must be accounted for during planning and testing. With prudent analysis and planning you can ensure a successful and efficient upgrade project.

Overview

This section presents an overview in terms of the steps a customer should take in preparing for and carrying out a Nomad upgrade in terms of the general approach and the sequence in which the product components should be upgraded.

General Approach

1. Review the differences between the versions
 - a. Core documentation (available via the 1E Support Portal - <https://1eportal.force.com>) highlights the feature differences, and may also include feature-specific guidance on upgrading
 - i. The 1E Support Portal has a matrix of which 1E product versions have been tested and certified against the variations of Current Branch releases
 - ii. The core documentation will also identify compatible versions and the required versions of any prerequisites
 - b. Determine how the new features can benefit your organization and then learn the details to make them effective
 - c. PXE Everywhere, WakeUp, and ActiveEfficiency are included with your Nomad license and you should include them in all aspects of your upgrade project. That includes reviewing their documentation and any feature changes
2. Review the details of how you have been using Nomad
 - a. Confirm which components you have been using (Nomad itself, PXE Everywhere, WakeUp, and ActiveEfficiency)
 - b. Confirm your understanding of the configuration details, particularly in terms of how the components are installed on the servers and clients. This can include settings such as Nomad's SpecialNetShare which can be used to configure Nomad to use custom shares that are configured with specific share permissions
 - c. You might have some clients that you have given a special Nomad configuration. For example, you might consider some clients to be sensitive and thus you might have adjusted their Nomad election weighting so that they never become Nomad masters. You should review whether there are any such exceptions and incorporate them in your plan accordingly
 - d. Confirm which features you have been using, especially those that are most commonly used
 - i. OSD integration is a common example. It can also be considered to be multiple features, as in PXE Everywhere, Peer Backup Assistant, Nomad integration into your boot images, and Nomad-specific task sequence actions
3. Review the possible key considerations for Nomad upgrade, as per the first section of this document
 - a. This includes server sizing changes. Server changes can in some cases be time consuming to arrange, so they should be considered and planned for early in order to ensure they don't delay other steps in your upgrade project
4. Obtain the latest version of the 1E Nomad Suite, any related components you use, and any relevant hotfixes from the 1E Support Portal (see the "Resources" section at the end of this document for details)
5. Design and plan your upgrade process
6. Implement the upgrade process (obtain or write a client upgrade script, for example)

7. Lab testing
 - a. Reproduce your production environment in reasonable detail.
 - i. This should include potentially relevant security, Active Directory group policy object, and firewall settings
 - ii. Operating system deployment testing should be included if you are using OSD with Nomad
 - iii. There should be sufficient clients so that some can be left to use your current Nomad version while others are upgraded, thus allowing testing of coexistence
 - b. Review your planned upgrade process and test plan to ensure that they incorporate the considerations that are relevant to your environment
 - c. Manually upgrade Nomad on the lab servers and some clients that are representative of your environment
 - d. Do some test deployments and review the Nomad logs to ensure that all activities occur as expected
 - e. Implement your production upgrade process
8. Document the plan, and update that document to reflect changes found in testing or deployment
9. Follow your organization's change control process
10. Prepare the production environment for upgrade
11. Start small
12. Verify success with each phase
13. Expand as success proves the process is working
14. Where Nomad deployment is complete, consider removing distribution points from your ConfigMgr hierarchy or hierarchies.

That may seem like a long list but it is probably typical of other upgrade projects you have done for other software. If you expect your environment might have exceptional complications or your time is limited, you may want to consider engaging an experienced consultant. Such a consultant should have experience with 1E products and preferably should be certified on 1E products. 1E has many partners who can help, or consider engaging our 1E Expert Services department.

Upgrade Sequence

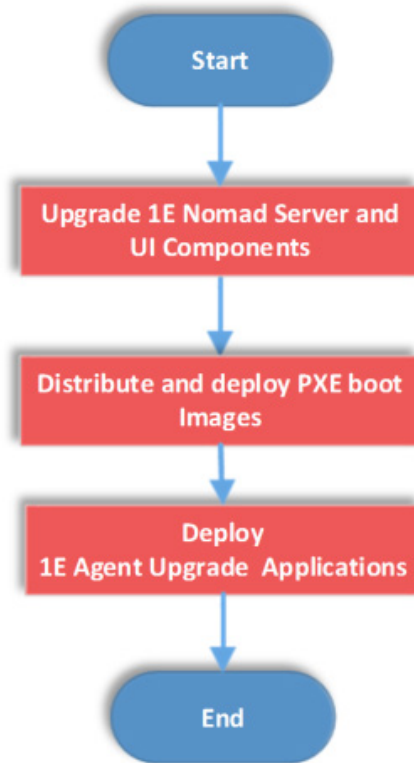
The upgrade process presented within this document implements three simple maxims:

- If upgrading ConfigMgr at the same time as Nomad, upgrade ConfigMgr server components before upgrading Nomad server components.
- Upgrade server components before clients.
- Upgrade ConfigMgr agents before 1E Nomad agents.

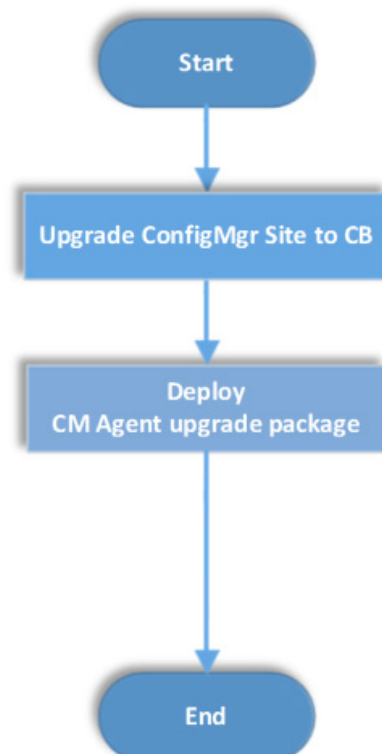
The figures below describe the principal processes and the sequence of steps involved when performing an upgrade. Described, is the logical progression of an upgrade process based upon the following possible scenarios:

- Nomad-only upgrade
- ConfigMgr-only upgrade
- ConfigMgr and Nomad upgrade
- Side-by-side migration of ConfigMgr and Nomad

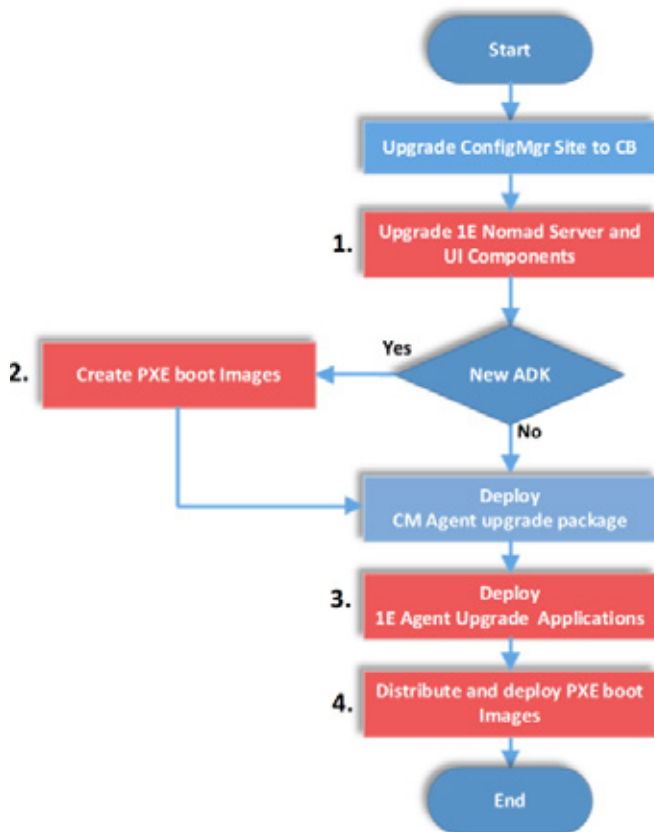
Nomad Only Upgrade



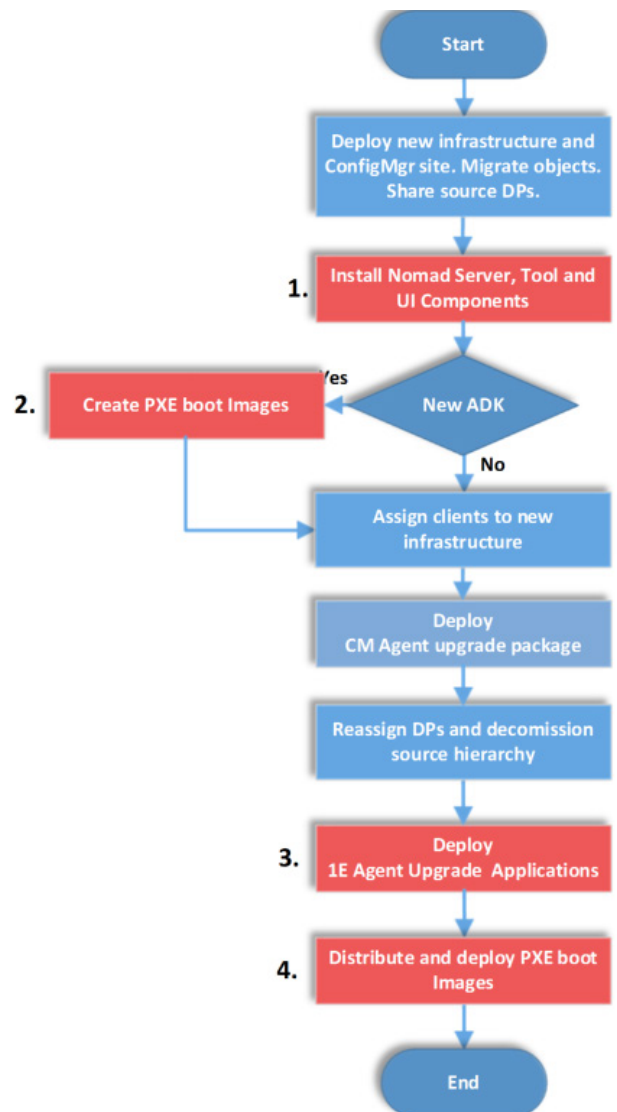
ConfigMgr Only Upgrade



Nomad and configMgr Upgrade



Side-by-side Nomad and configMgr Upgrade



The overall strategy when upgrading the 1E Nomad Suite is to upgrade the ConfigMgr server components before the 1E Nomad Suite components; ActiveEfficiency server, PXE Everywhere Central, Nomad Tools and console extensions (as noted in step 1 of the workflow above). ConfigMgr agents should be upgraded before the Nomad agents with those Nomad agents installed on DPs being upgraded first.

If performing a side-by-side migration of ConfigMgr, ActiveEfficiency will be required to synchronize with the new ConfigMgr database in-order for Dynamic Pre-cache and the Nomad Dashboard to function in the new infrastructure.

Upgrading ActiveEfficiency Server whilst retaining the ActiveEfficiency database will allow the Dashboard to report on deployments and pre-cache jobs in the old and the new sites. However, any new deployment or pre-cache job activity in the old site will not be observable in the Nomad Dashboard.

If deploying a new version of the ADK (and this will be most likely due to changes in ConfigMgr), then Nomad-enabled PXE boot images must be recreated (step 2). You must update your Nomad-enabled boot images after performing any of the following:

- Upgrade to the ConfigMgr site or provider components
- Upgrade to the NomadBranch Tools component
- Installation or upgrade of the 1E Bios to UEFI Migration Tool

Updating boot images is achieved by simply redistributing and deploying the boot image to the DPs and PXE Everywhere endpoint agents (step 4).

Upgrading ConfigMgr agents can be achieved using a ConfigMgr package enabled for Nomad. This will allow the client upgrade process to leverage Nomad in the download of the files. Upgrading Nomad agents is performed using a ConfigMgr package or application (step 3), created using the 1E Endpoint Agent Installation Solution Accelerator.

The 1E Endpoint Agent Installation Solution Accelerator – which can be downloaded from the 1E Support Portal – is the recommended approach to automatically import the 1E endpoint agents into ConfigMgr.

Best Practice

For completeness, this section discusses general upgrade best-practice in terms of the operating environment i.e. location, monitoring, the use of new features and the state of the ConfigMgr site.

Upgrade subnets as a whole

Where practical, upgrade all clients on a subnet at the same time. This minimizes the potential for version-specific issues such as hash or election differences (specifically when taking advantage of newer Nomad features such as the HTTP/HTTPS peer copy functionality). Nomad elections are subnet based, so any Nomad client on the subnet could respond to another Nomad client, regardless of Nomad version or ConfigMgr differences. If the ConfigMgr clients that Nomad is installed on are the same version and reporting to the same hierarchy then there also can't be any issues due to ConfigMgr differences.

Similarly, PXE Everywhere clients can only report to one hierarchy at a time (ie: one PXE Everywhere Central service). To provide a predictable OSD experience (for those computers rebuilt using PXE booting), targeting PXE Everywhere upgrades to subnets or sets of subnets (locations) is important. In this way you can be confident that anyone building a computer at a given location will build it using your ConfigMgr hierarchy as intended – all the peers providing PXE servers are reporting to one or the other, not a mix.

Inevitably clients do move from subnet to subnet, and clients are also not online all at the same time. Therefore, differences in Nomad or ConfigMgr client versions will occur on a subnet on occasion during the duration of your upgrade project. In many cases the client differences do not cause any problems, or those problems are short-lived and not significant. However, on a larger scale or for a longer time period these problems can become significant.

For these reasons, you should design your Nomad and ConfigMgr upgrade strategies to upgrade clients on subnets as a whole and as soon as possible. You will want to be prudent in the early stages of your upgrade process and to keep operational costs low but a suitable strategy can address all of these goals.

Verify success

As you proceed through testing and production deployment you should verify that Nomad, related components, and ConfigMgr continue to work as intended. This can include checking:

- The correct versions are now in place
 - ConfigMgr hardware and software inventory reports can confirm this
 - The Nomad Dashboard can indicate the number of agents now running the new version. This is reported from ConfigMgr hardware inventory data so will be susceptible to a delay depending upon its native cycle and the ActiveEfficiency-ConfigMgr sync cycle used to drive the Nomad Dashboard.
- Core functionality is working – downloads over the WAN, peer to peer, PXE booting, wake-on-LAN, etc. as desired
 - Manual inspection, including log reviewing, is ideal to confirm this in the early stage
 - The Nomad Dashboard can confirm it on a broader scale as well as providing information on Nomad (and ConfigMgr) client agent health.
- Core functionality is working – downloads over the WAN, peer-to-peer, PXE booting, wake-on-LAN, etc. as desired
 - Nomad Dashboard can be used for this
- No negative side effects
 - Thorough lab testing is important
 - Stay alert to helpdesk incidents and other means of reporting anomalous behavior
- All components are upgraded – Nomad, Nomad ConfigMgr Admin Console UI components, ActiveEfficiency, PXE Everywhere, and WakeUp, as appropriate to your environment
 - ConfigMgr hardware and software inventory reports can confirm this as well
- Secondary functionality and scenarios are working as desired
 - Status reporting for OSD deployments or similar efforts provides this
- Server workloads do not change unexpectedly, and the server performance continues to be acceptable at all times
 - Standard server monitoring and alerting
- After all clients are targeted with your Nomad client upgrade, the targeting collection will become smaller (since it is targeting clients that are not the correct version). It may take some time to become empty due to clients that are offline
 - A small number of collections will be involved, so use manual inspection in the ConfigMgr console

Upgrade software and usage independently

Do not start using new features at the same time as doing the upgrade. Let the upgrade settle and then start using the new features. There does not have to be a long period between the two. By upgrading first and then taking advantage of the features later, you simplify both efforts. If there are any challenges the possible causes are more limited. For example, when upgrading from a version of Nomad earlier to 6.2 and wanting to make use of Nomad HTTP/HTTPS peer copy, complete the upgrade before piloting and enabling the new feature.

Maximize ConfigMgr client health

ConfigMgr is the usual method use to distribute Nomad and its components, and it is almost always the method for invoking Nomad. The more successfully ConfigMgr can do software distribution, the more quickly and smoothly the Nomad upgrade can complete.

There will always be some challenges with using any software on a large scale, including, so you cannot expect to have 100% client health. Time spent maximizing client health will make you more successful with all your ConfigMgr activities.

Upgrade as new releases become available

Especially be aware of when the versions were released and 1E's support policies so that you know when your current version will no longer be supported. Follow the 1E Support Blog (as per the "Resources" section of this document) to keep aware of when new versions are available. Even if you don't anticipate using the new features right away, you shouldn't let your environment become out-of-date. By upgrading on a regular basis, you ensure that you are always using a supported version of Nomad and each upgrade is business as usual rather than a dramatic effort.

Upgrade FAQ

This section will attempt to answer some of the common questions arising from performing a Nomad upgrade.

Agent Upgrades

What versions of ConfigMgr does Nomad 6.2 support

For the latest release of the 1E Nomad Suite, 1E will support the latest and immediately previous current branches of ConfigMgr. At the time of the 6.2 release, this happens to be 1606 and 1610. At the time of writing this document, testing is underway to support 1702 which released around the same time as Nomad 6.2. Formal support is expected by the end of April, 2017. The Resources section provides a link to the 1E product support matrix (on the 1E Support Portal).

How do I upgrade?

Executing the Nomad 6.2 MSI installer on a host (having a previous version installed) will result in the agent being upgraded automatically.

Do I need a new license key when I upgrade 1E Nomad?

1E license keys are linked to major versions of the 1E products.

For major version upgrades (i.e. upgrading from 5.5 to 6.2) you will require a new license key from 1E. For all other upgrades a new license key is not required.

Why use the Endpoint Agent Installer Solution Accelerator (EAI) during the upgrade?

The EAI Solution Accelerator was developed to allow easy installation and configuration of all 1E endpoint agents, including Nomad and PXE Everywhere. EAI includes all the agent installation packages and is updated and released alongside a new agent release. For example, a corresponding version of the EAI was released at the time of the Nomad 6.1, 6.1.100 and 6.2 releases. EAI is implemented as an installation wizard that guides the admin through the configuration, creation and deployment of the 1E Nomad, PXE Everywhere and other 1E agent installation packages and applications. The EAI is designed to speed up agent deployment and ensure consistency of their configuration with the EAI providing a set of recommended configuration settings that can be changed by the admin either through the wizard or by editing the ApplImport.xml file and running EAI in unattended mode.

Details of how to use the EAI solution accelerator is provided in the online documentation available at the 1E Support Portal.

During an upgrade, are my customized registry settings preserved?

Yes. All upgrades will preserve the Nomad registry settings, as well as any content that exists in the Nomad Cache. However, it is recommended that users always deploy the upgrade using their desired transform (MST) in order to ensure that any existing agents that may be misconfigured are brought into line.

Users should consult the new release documentation in order to understand the settings required to implement new features present in the release. As an example, Nomad 6.2 introduces support for HTTP/HTTPS peer copy. When upgrading, unless new settings are made, agents will continue to use the default settings (ie: SMB peer copy).

Are Nomad 6.2 agents backward compatible with previous versions?

Yes. As long as SMB transport is enabled on the 6.2 agents¹, they will be able to share content with previous version agents. Nomad 6.2 agents configured to use HTTP or HTTPS as their primary transport are able to share content with previous version agents provided they have been configured to allow fallback to SMB.

¹ Nomad 6.2 is capable of supporting both HTTP(S), SMB and Connectionless transports. When configuring the agent to use both HTTPS, HTTP and SMB, HTTPS is the preferred transport, but the actual one used will be negotiated based upon the capabilities of both end points.

Do I need to upgrade my agents all at once?

Under most circumstances, no. As stated above, 1E always ensure that Nomad agents are backward compatible in terms of being able to download and share new and existing content between agents of different versions. However, if users do wish to utilize the Nomad SECure feature, are upgrading from a version older than 6.1, and wish that content be available for all endpoints, then it is recommended that all endpoints are upgraded before enabling the Nomad SECure feature.

If needing to upgrade both the ConfigMgr and Nomad agents, which is done first?

Best practice is to upgrade the ConfigMgr agent prior to the Nomad agent.

Under normal operation, Nomad is designed to instantly recognize and remediate if it is not configured as the Alternate Content Provider (ACP) for the ConfigMgr agent. When upgrading the ConfigMgr agent or Nomad agent, no additional steps are required to ensure Nomad remains configured as the ACP. The one exception is where the Nomad agent installation is run on a host that does not have the ConfigMgr agent installed. In this case, if installing the ConfigMgr agent after installing Nomad, then you will need to perform a restart of the NomadBranch service for successful ACP registration. Therefore, as a precaution, if reinstalling both agents, it is recommended that the ConfigMgr agent is always installed/upgraded before Nomad.

Content

What happens to my existing cached content when I upgrade?

An upgrade of the Nomad agent does not delete content from the Nomad cache. Similarly, an upgrade to the ConfigMgr agent will not result in content being deleted from its cache.

Are any Windows 10 Servicing Updates incompatible with Nomad 6.1.x and above, hash checking?

No. Prior to downloading from the DP, Nomad 6.1.x and above is able to calculate the content hash for all content types including all forms of Windows 10 Servicing Updates. Nomad compares its calculated hash value with that stored in ConfigMgr to ensure they are identical.

Does Nomad support the use of shared DPs during a side-by-side migration?

Yes, for a shared environment, provided the content version is consistent between the old and new site/hierarchy, the content locations will be supplied to the Nomad agent by the ConfigMgr agent and accessed by Nomad in the usual way. This is true for native ConfigMgr deployments as well as Nomad Pre-caching when the Nomad agent performs its own content request. The Nomad agent installed on the shared DP will continue to function as normal.

For a side-by-side migration, can existing cache content be used in the new infrastructure?

Yes. Migrating objects in ConfigMgr is performed using migration jobs and content identifiers are maintained after migration. This means all content metadata gathered by the Nomad agent in the old hierarchy will be valid in the new.

When performing a side-by-side migration, will Nomad reuse cached software updates?

Yes, the software update identifiers and metadata generated by Nomad in the source site remains valid in the new hierarchy.

When performing a side-by-side migration and executing ConfigMgr migration jobs, are Nomad settings preserved on migrated content?

For packages, no. Users must manually configure the Nomad settings on their migrated content in the new site. This can be automated by running a post migration script in order to set the required Nomad properties. Because of this, it is recommended that deployments are set to disabled in the package migration jobs. For applications and software updates, this is not a concern since the setting to use Nomad is made in the ConfigMgr Client Settings policy, rather than against individual pieces of content.

ActiveEfficiency

Are there any changes to the ActiveEfficiency server sizing specification in Nomad 6.2?

The release of Nomad 6.2 introduces a new version of ActiveEfficiency Server. When upgrading the Nomad-related components you should review the resource considerations of relevant feature changes if you use those features on a large scale or very intensely.

When upgrading ActiveEfficiency are custom configuration settings preserved?

No. Prior to upgrading, it is recommended to take note of any customizations. If you have customized settings such as IIS bindings or changed the service.exe.config file, then these will need to be reapplied after the upgrade.

Nomad 6.1 introduced the Nomad Dashboard which is rendered by the ActiveEfficiency server. Will the pre-existing Nomad Report Pack continue to work after upgrading?

Yes, these reports will continue to work as before. However, the Nomad Dashboard introduced in version 6.1 is designed to replace these reports. The Nomad Dashboard will be regularly updated with new reporting features. No changes will be made to the Nomad Report Pack going forward.

Operating System Deployments

Is there a new version of PXE Everywhere released with Nomad 6.2?

Yes. The EAI Solution Accelerator, released alongside for Nomad 6.2, includes the new PXE Everywhere agent release. This new version of PXE Everywhere has been updated so that PXE Everywhere Central now supports Windows Server 2016. It is normally recommended that PXE Everywhere agents are upgraded at the same time as the Nomad agent using the EAI Solution Accelerator.

Do I need to recreate my PXE boot images after the upgrade?

Unless you are upgrading the Windows ADK, you do not need to recreate your Nomad-enabled PXE boot images. Admins do however need to update and deploy their boot images to include updated Nomad 6.2 program files when upgrading the ConfigMgr site server, SMS provider components, or the Nomad Branch Tools. Updating is achieved by simply redistributing the boot image package using the ConfigMgr console. The PXE boot image must then be re-deployed to your PXE Everywhere endpoint agents.

Do I need to reinstall the PXE Central component when performing a ConfigMgr upgrade?

If the upgrade involves changes to the ConfigMgr database, then it is recommended that the PXE Everywhere Central component is reinstalled. If customers have deployed a CAS within their ConfigMgr infrastructure, you may need to review article KB 1414 (KB000001414) on the 1E Support Portal knowledgebase – a hotfix is available by contacting 1E support.

Do I need to update my OSD task sequences after the upgrade?

1E are always looking for ways to simplify and enhance our customers OSD experience and will often release new built-in task sequence steps as part of a 1E Nomad release. 1E recommends that whenever possible, users take advantage of any new task sequence steps and update their task sequences accordingly.

If users wish to retain the configuration of their existing task sequences, then the older steps will typically remain supported unless otherwise stated in the release documentation. Where existing steps are supported into the latest release, no action is required on existing task sequences once the Nomad Branch Tools and ConfigMgr Admin Console UI extensions have been upgraded. ConfigMgr admins are then able to open and edit their existing task sequences and they will continue to function in the same way.

The Nomad 6.2 release introduces enhancements designed to further streamline OSD in terms of BIOS to UEFI migration, BIOS passwords, TPM activation, Nomad Peer Backup Assistant (PBA) performance and USMT encryption & management of the OSD Computer Replace scenario.

In improving Nomad PBA, certain steps have been deprecated when configuring a task sequence. The legacy steps themselves

are still supported and will continue to work, but are no longer included in the list of built in Nomad steps found in the task sequence editor.

The Upgrade Scenarios

Nomad Upgrade Only

Customers may wish to only upgrade their 1E products rather than perform a synchronous upgrade of 1E Nomad and ConfigMgr. Customers may only want to take advantage of a new 1E Nomad feature or keep their 1E Nomad installation current.

See the 1E Support Portal for specific details on product support dates. The link is provided in the Resources section of this document.

Upgrading 1E Nomad is a straight-forward process that adheres to the general approach of upgrading the server, tools and console components first before upgrading clients. The 1E Nomad Suite is generally backward compatible and unless otherwise stated in the product documentation, existing features will be supported by the new version. 1E realizes the importance of compatibility in terms of maintaining client operations during the upgrade process. As a prior example, with the release of Nomad 6.0, task sequences fully supported Nomad as an alternate content provider, negating the need to employ the built-in Nomad pre-staging task sequence steps. However, 1E still supported these steps and continues to do so in 6.2. 1E strongly recommends utilizing the new simpler means of utilizing Nomad during a task sequence (i.e.: using the “Set Nomad as download program” task sequence action), but equally understands that customers may not want to change something that already works well until they are ready to do so.

1E recommends performing the Nomad upgrade using the EAI Solution Accelerator (See the FAQ above) utilizing the resultant ConfigMgr Application. If applications have been deployed previously superseded can be used to facilitate the upgrade for one or more previous client agent versions. ConfigMgr Applications also facilitate enforcement or automatic reinstallation of the agent should it be removed.

In-place Upgrade of ConfigMgr and Nomad

1E will aim to synchronize new releases of the 1E Nomad Suite with the cadence Microsoft has established for ConfigMgr (and Windows 10). 1E does not intend to release updates as frequently as Microsoft, rather 1E will ensure a fully supported release is made available shortly after the latest CB release. This approach allows customers, if they wish, to perform a synchronous upgrade of 1E Nomad and Microsoft ConfigMgr.

Once the decision to upgrade ConfigMgr has been made, customers must then consider the supportability of their existing 1E Nomad product installations within the new environment. Customers should consult the 1E Supportability Matrix if in any doubt, the link for which is provided in the Resources section of this document.

If performing a ConfigMgr server upgrade, it is recommended that ActiveEfficiency, PXE Everywhere Central, Nomad Tools and Nomad ConfigMgr Admin Console UI Extensions are upgraded after performing the ConfigMgr server upgrade.

If the ConfigMgr upgrade involves a new version of the ADK, then new PXE boot images will need to be recreated, redistributed and redeployed. Otherwise, re-distributing your existing boot images will ensure that they contain the new version of Nomad program files.

Lastly the endpoints are upgraded. The ConfigMgr and Nomad agents can be upgraded using a package or application deployment. Admins should create a ConfigMgr agent upgrade deployment, leveraging the existing Nomad agent installations to perform the download before the ConfigMgr agent upgrade is executed. For the 1E Nomad agents, the application deployments created using the latest EAI, can then be used. Upgrade the ConfigMgr agent before the Nomad agent and upgrade the Nomad agents on the DPs first.

Side-by-Side Migration of ConfigMgr and Nomad

Users will sometimes want to redesign their ConfigMgr infrastructure as the result of mergers or acquisitions. Also, this may come about as the result of improvements in ConfigMgr site and hierarchy capacities and its coincidence with a customer's server refresh cycle.

In these scenarios customers may want to migrate their site objects (applications, boot images etc) and ensure that deployments can utilize existing cache content in order to minimize any downtime and maintain services when migrating clients. Once the new ConfigMgr infrastructure is in place, in such cases, admins can deploy a script to reassign hosts to the new infrastructure. The ConfigMgr and Nomad agents can then be upgraded using the same method used for an in-place upgrade.

Upgrade Process

The following section includes the detailed technical steps you should include in your upgrade process. The steps should be used in conjunction with the online documentation. Using the resource links as provided.

Nomad and PXE Everywhere

1. Request a new license key from 1E Sales Operations if your upgrade is from one major release of Nomad or PXE Everywhere to another major release (i.e. Nomad 5.5 to 6.2). See the Resources section at the end of this document for details.
2. Upgrade ActiveEfficiency server. The Nomad 6.2 release includes a new version of ActiveEfficiency Server. Any pre-existing customizations will need to be reapplied post-upgrade. See: <http://help.1e.com/display/AES19/Implementing+ActiveEfficiency>
3. If the release includes a new version of the PXE Everywhere Central component, upgrade it. The 1E Nomad 6.2 Suite includes a new version of the PXE Everywhere component - where the PXE Central installer now supports Windows Server 2016. There is no change in this version from the previous version to the PXE agent or installed Central component. See: <http://help.1e.com/display/PXE31/Installation+and+Upgrades>
4. If you are using Nomad with OSD, or will do so, upgrade Nomad Branch Tools (NomadBranchTools.msi) and install the 1E BIOS to UEFI Migration tool (1EBiosToUefi.msi) on the CM site servers. See: <http://help.1e.com/display/NMD61/Installing+Nomad+tools+for+operating+system+deployment>
<http://help.1e.com/display/NMD61/Installing+BIOS+to+UEFI>
5. If you are using remote SMS Providers, then on each ConfigMgr site server configure the Nomad Tools MOF extensions as described in the above link. Install the 1E BIOS to UEFI Migration tool on your SMS Provider servers as described in the above link.
6. Upgrade Nomad ConfigMgr Admin Console UI Extensions and install the 1E BIOS to UEFI Migration tool on all site servers and administrator workstations that have the ConfigMgr console (using NomadBranchAdminUIExt.msi and 1EBiosToUefi.msi). See: <http://help.1e.com/display/NMD61/Installing+the+Configuration+Manager+console+extensions>
7. Once the Nomad Branch Tools and 1E BIOS to UEFI Migration tools have been installed on the site server, Nomad-enabled PXE boot images must be updated and redistributed to include the new Nomad program files.
8. If any hotfixes or updates have been release by 1E - via the 1E Support Portal - then please install them.
9. Update your Nomad-enabled PXE boot images. If you have installed a new version of the Microsoft ADK, then the boot images will need to be recreated - also redistributing them will facilitate the update. Re-deploy your boot images to the PXE Everywhere endpoints. See: <http://help.1e.com/display/PXE31/Getting+PXE+Everywhere+ready+to+work>
10. Upgrade Nomad on all ConfigMgr Distribution Points (using NomadBranch.msi for 32-bit² OS's or NomadBranch-x64.msi for 64-bit OS's).

² Nomad 6.2 is capable of supporting both HTTP(S), SMB and Connectionless transports. When configuring the agent to use both HTTPS, HTTP and SMB, HTTPS is the preferred transport, but the actual one used will be negotiated based upon the capabilities of both end points.

11. If you are performing an upgrade to ConfigMgr, upgrade your ConfigMgr agents first by creating a package deployment. Follow the steps described in the ConfigMgr online documentation

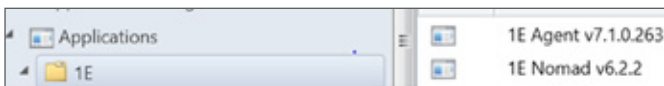
[https://technet.microsoft.com/en-gb/library/gg712298.aspx.Enable_Nomad_on_the_package.](https://technet.microsoft.com/en-gb/library/gg712298.aspx.Enable_Nomad_on_the_package)

12. Upgrade your 1E agents. For the Nomad 6.2 release, you will need to upgrade only your Nomad agent. Execute the installation wizard for the Nomad 6.2 EAI Solution Accelerator. Select the required agents e.g. Nomad and PXE Everywhere client agents as applicable when executing the wizard and choose to create application deployments for each of client agent. See:

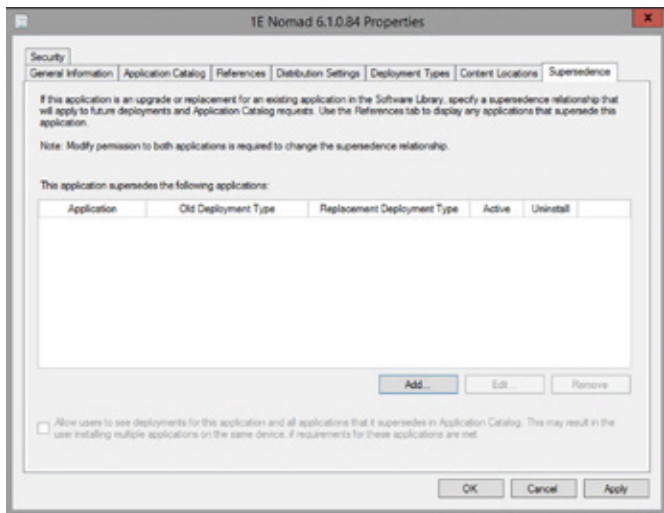
<http://help.1e.com/display/EAI/Implementing+the+End-point+Agent+installer>

13. If you have installed your existing agents using a previous version of the EAI or created your own applications, then ensure the new application deployment supersedes the existing one by following the steps below. The procedure below provides an example of upgrading to Nomad 6.2. The example does mentions both the Nomad and PXE Everywhere agents. For 6.2 upgrades, the PXE Everywhere agent can be omitted.

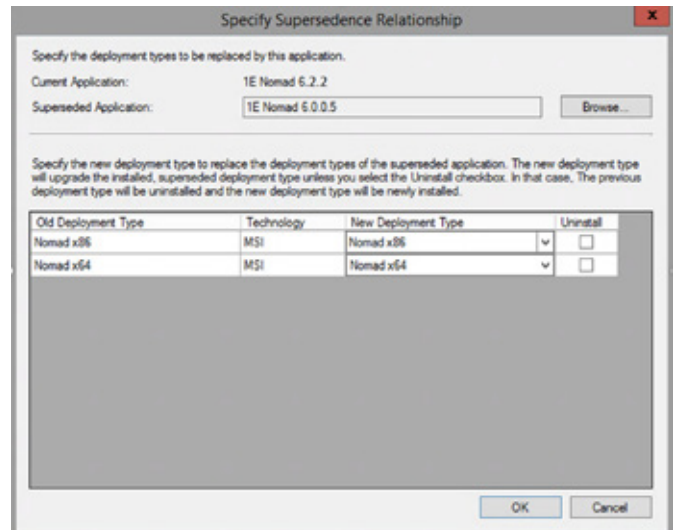
a. Using the CM Console, navigate to **Application Management - Applications**. Right-click the newly created Application and select Properties.



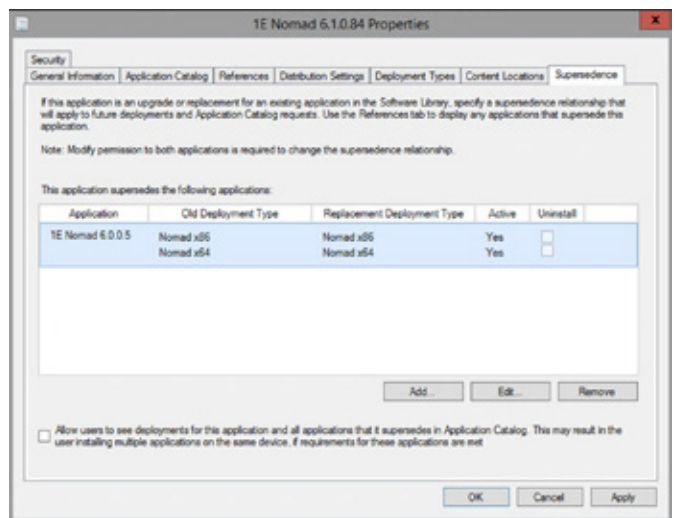
b. Select the Supersedence tab. Click Add.



c. Enter the previous version of Nomad in the Superseded Application field. Enter the corresponding New Deployment Types. Note that for Nomad or PXE it is not necessary to check the Uninstall boxes. Click OK.



d. Click Apply and OK.



Once the new Application becomes available on distribution points and the **Application Deployment Evaluation Cycle** has occurred on the host, the agent will be upgraded.

14. The EAI will create the deployment collection, but it will not contain any membership rules. If you do not already have the collection criteria available, a Nomad client agent example is provided below that can be used in the EAI collections.

```
a. Select * from SMS_R_System inner join
SMS_G_System_ADD_REMOVE_PROGRAMS_64 on
SMS_G_System_ADD_REMOVE_PROGRAMS_64.ResourceId = SMS_R_System.ResourceId inner
join SMS_G_System_ADD_REMOVE_PROGRAMS_64 on
SMS_G_System_ADD_REMOVE_PROGRAMS_64.ResourceId = SMS_R_System.ResourceId where SMS_R_System.Client = "1" and SMS_R_System.Obsolete = "0" and ((SMS_G_System_ADD_REMOVE_PROGRAMS_64.DisplayName = "1E NomadBranch x64" and SMS_G_System_ADD_REMOVE_PROGRAMS_64.Version < "6.2.2") or (SMS_G_System_ADD_REMOVE_PROGRAMS_64.DisplayName = "1E NomadBranch" and SMS_G_System_ADD_REMOVE_PROGRAMS_64.Version < "6.2.2"))
```

b. Adjust this query for the specific version of Nomad you are upgrading to.

15. Create a targeting collection limited to the collection from the previous step that includes a small number of clients for a small number of subnets

a. select * from SMS_R_System where SMS_R_System.IPSubnets = "192.168.10.0" or SMS_R_System.IPSubnets = "192.168.11.0"

b. Ensure the collection has the desired clients when the collection updates

c. You could target other subsets of your clients but a best practice is to include subnet-based targeting.

16. Deploy the Nomad and PXE Everywhere client agents to the test clients in the collection created in the previous step

17. Check the installer logs and agent logs on the test clients to ensure a successful installation.

18. Distribute a test package to the upgraded test clients to ensure Nomad downloads the package as expected;

a. This can be confirmed by inspecting the Nomad client logs or by using the Nomad Dashboard.

19. Update operating system deployment (OSD) task sequences: For customers migrating from Nomad 5.x, Nomad 6.0 introduced the new built-in task sequence step "Set Nomad as the download program". This step allows Nomad to be used by the task sequence whenever any type of content is required. After upgrading the Nomad ConfigMgr Admin Console UI Extensions to 6.x, introducing this step into a previously created 5.x Nomad-enabled task sequence would allow the 1E-specific steps (defined below) to be removed from the task sequence (thereby simplifying the task sequence). 1E recommends that this approach is taken for pre-existing 5.x task sequences.

"Set Nomad as the download program" replaces the following steps;

- Pre-stage content using Nomad
- Create Nomad application policy
- Delete Nomad application policy
- Enable run from distribution point
- Disable run from distribution point

The "Set Nomad as the download program" step should be configured as the first step in the task sequence. Note that when booting into WinPE or in the State Restore phase, Nomad must be enabled by using the "Install and configure Nomad in WinPE" step. This can be achieved by using the new "Stage Nomad" and "Install Nomad" task sequence steps introduced in Nomad 6.1 and available in 6.2.

You can continue to use your existing Nomad PBA steps, but it is recommended that customers make use of the new features that increase performance and reliability and replace these with the new steps. See <http://help.1e.com/display/NMD62/OS+deployment+task+sequences>

20. Target a test machine with an OSD task sequence and PXE boot to ensure the new PXE Everywhere agent responds and the boot image is transferred.

21. From there you can proceed with upgrading clients in phases. The phases can be readily implemented by adding subnets or similar groupings of clients to the targeting collection (step 12 above).

1E WakeUp

1E WakeUp is included with the 1E Nomad Suite. For the Nomad 6.2 release, there are no associated changes to 1E WakeUp.

For releases that contain a new version of 1E WakeUp, perform the upgrade in the following way:

- Request WakeUp license keys from 1E Sales Operations - if it has had a major release since your last upgrade. WakeUp is included in your Nomad license agreement but has a separate license key.
- Upgrade the server-side components.
- Upgrade the clients.

See the WakeUp online documentation for specific installation options.

<http://help.1e.com/display/NWE71/Installations+and+upgrades>

Resources

1E Documentation:

- 1E Nomad: <http://help.1e.com/display/NMD62/Welcome>
- 1E PXE Everywhere: <http://help.1e.com/display/PXE31/Welcome>
- 1E WakeUp documentation: <http://help.1e.com/display/NWE71/Installing+the+WakeUp+server>

- 1E BIOS to UEFI Migration tool: <http://help.1e.com/display/B2U13/Welcome>
- 1E Endpoint Agent Installer Solution Accelerator: <http://help.1e.com/display/EAI/Welcome>

1E Support Portal: <https://1eportal.force.com>

- Support policies and product version support dates: <https://1eportal.force.com/apex/ProductLifeCycleSupportMaintenance>
- To request license keys for major versions of Nomad, PXE Everywhere or WakeUp, please e-mail: 1ESalesOps@1E.com

Microsoft:

- Latest ConfigMgr documentation : <https://docs.microsoft.com/en-us/sccm/core/plan-design/changes/whats-new-in-version-1702>
- ConfigMgr blog, including announcements of new releases: <http://blogs.technet.com/b/configmgrteam/>

ABOUT 1E

1E's mission is simple: to enable our customers to automate the full software lifecycle across their business. Through Software Lifecycle Automation employees become more productive, the business becomes more agile, and IT departments are more reactive to change. We empower our customers to remove unused software and unnecessary servers, and reduce network bandwidth while providing their users with the software they need, when they need it. As a result, our customers save millions on hardware, software, energy and people. To date, 1E solutions have generated over \$2.6 billion of productivity improvements.

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