

# P&U Self Service for CPS Standard

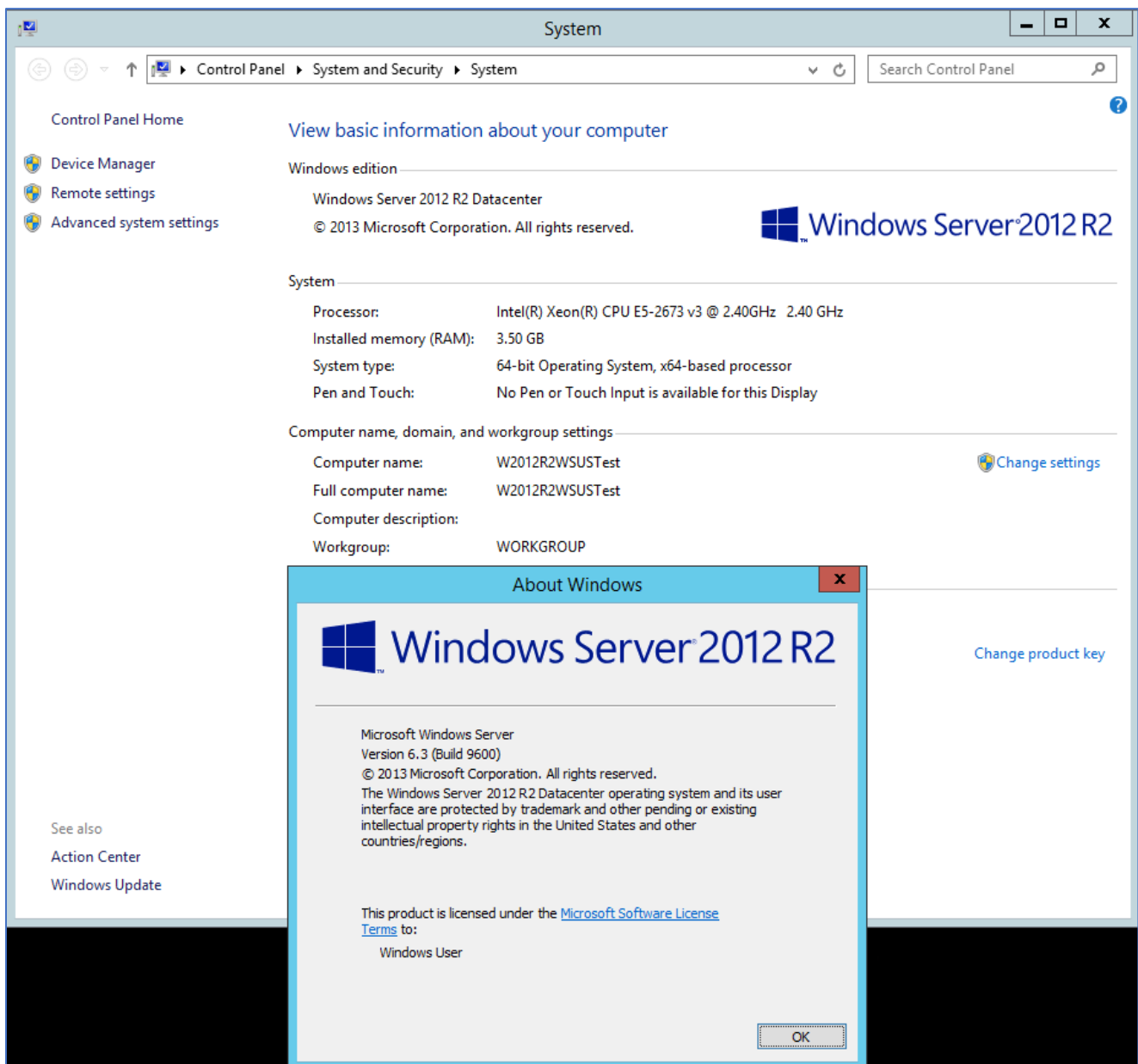
In Cloud Platform System (CPS), software updates are automated through the CPS Patch and Update (P&U) framework. This document covers the steps to create P&U packages to install software updates to CPS Standard for delivery of monthly Windows updates.

This software requires a dedicated standalone VM for WSUS and packaging operations. Don't use the CPS WSUS VM or an existing WSUS VM in your environments. Create a new VM that has Internet connectivity to download WSUS packages.

## Setting up WSUS

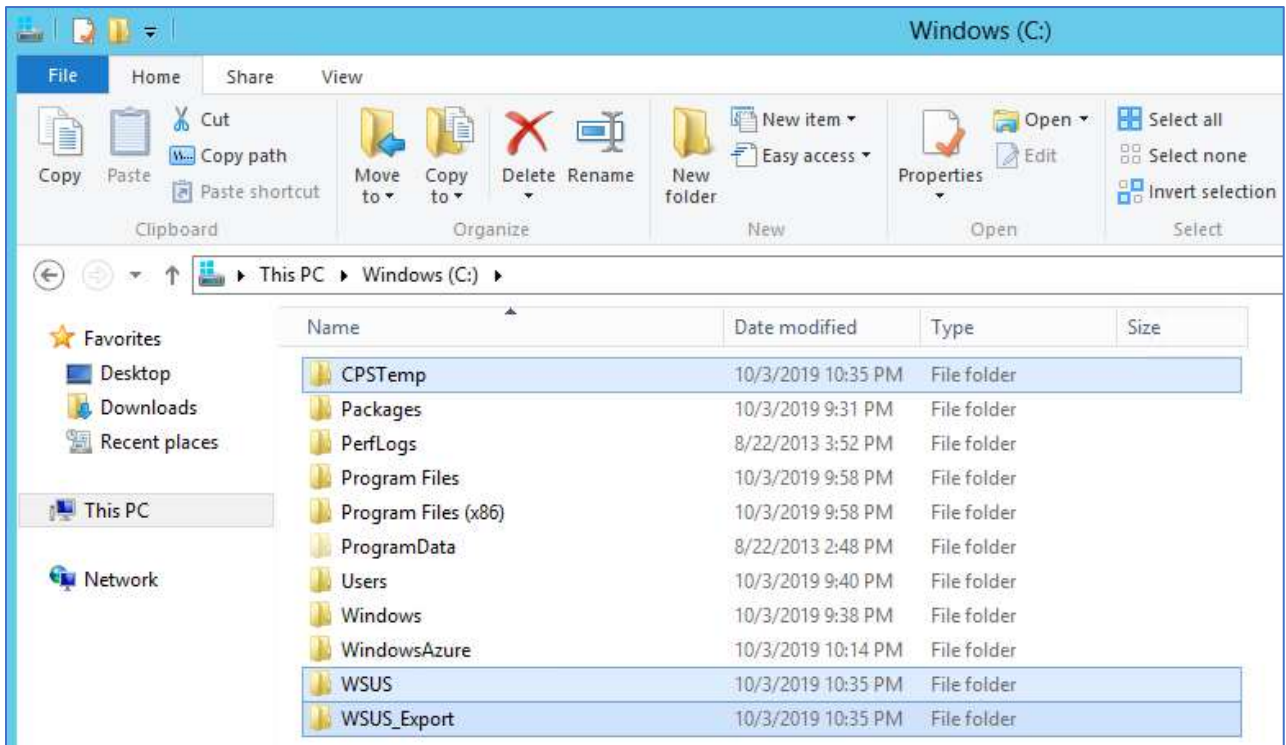
Deploy a new Windows Server 2012 R2 VM, called "CPSWSUS" here for convenience

Verify Windows Server 2012 R2 is installed.



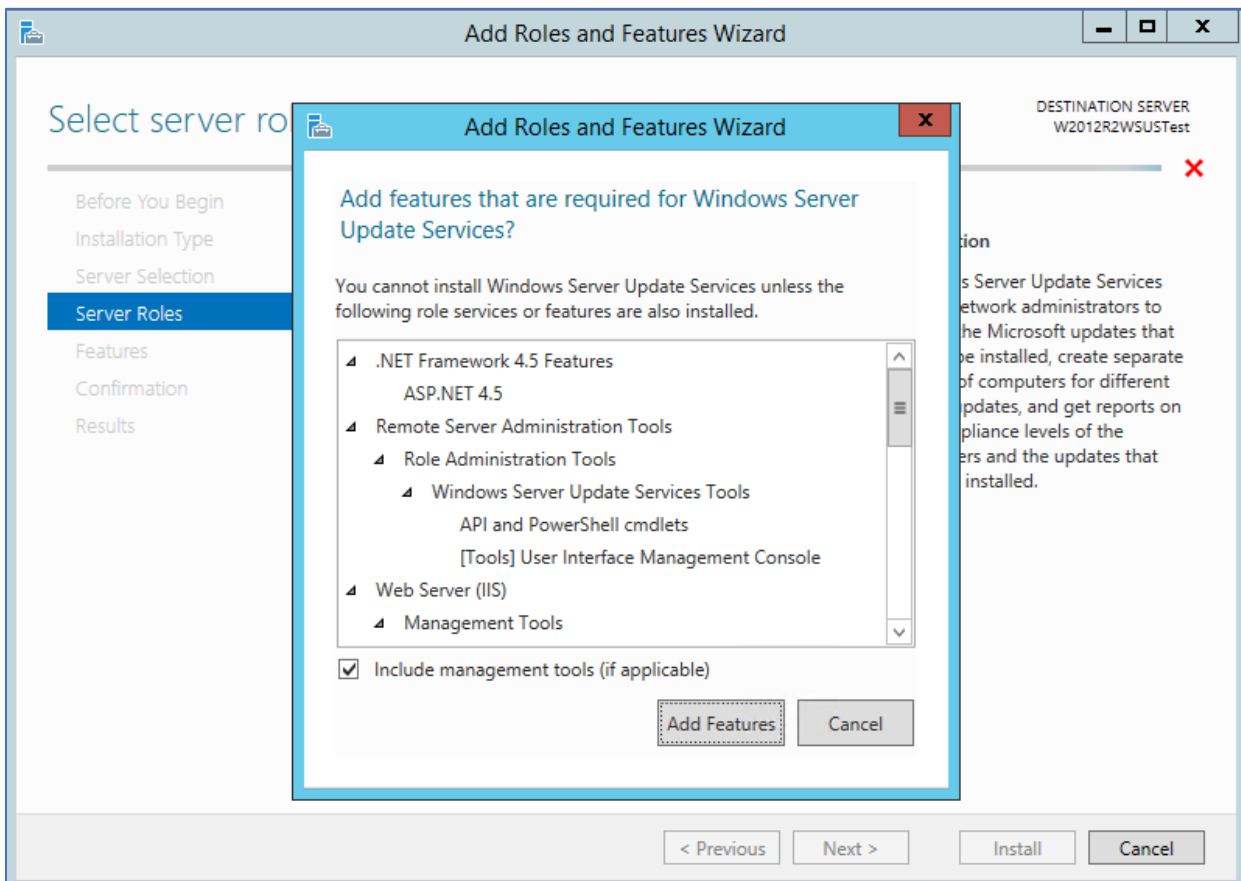
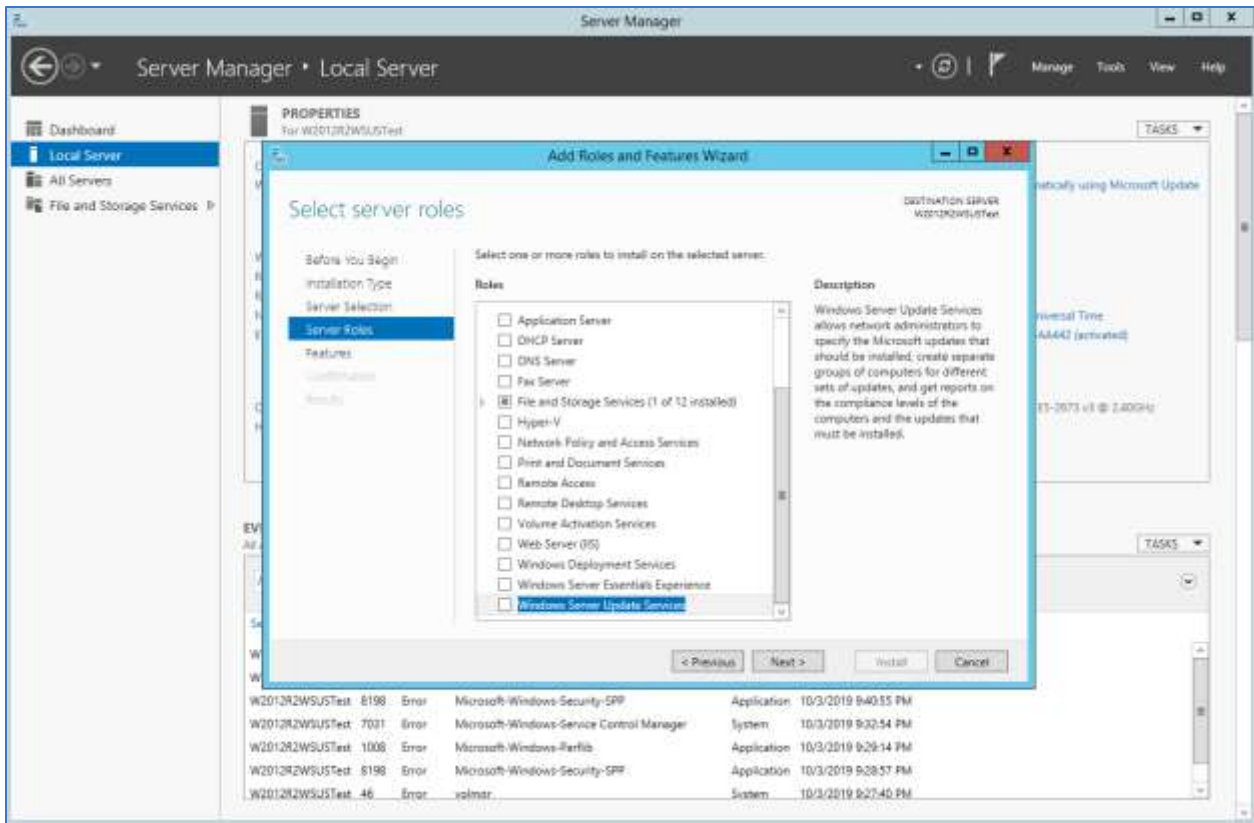
Do all Windows Updates (including any required reboots) on this new VM.

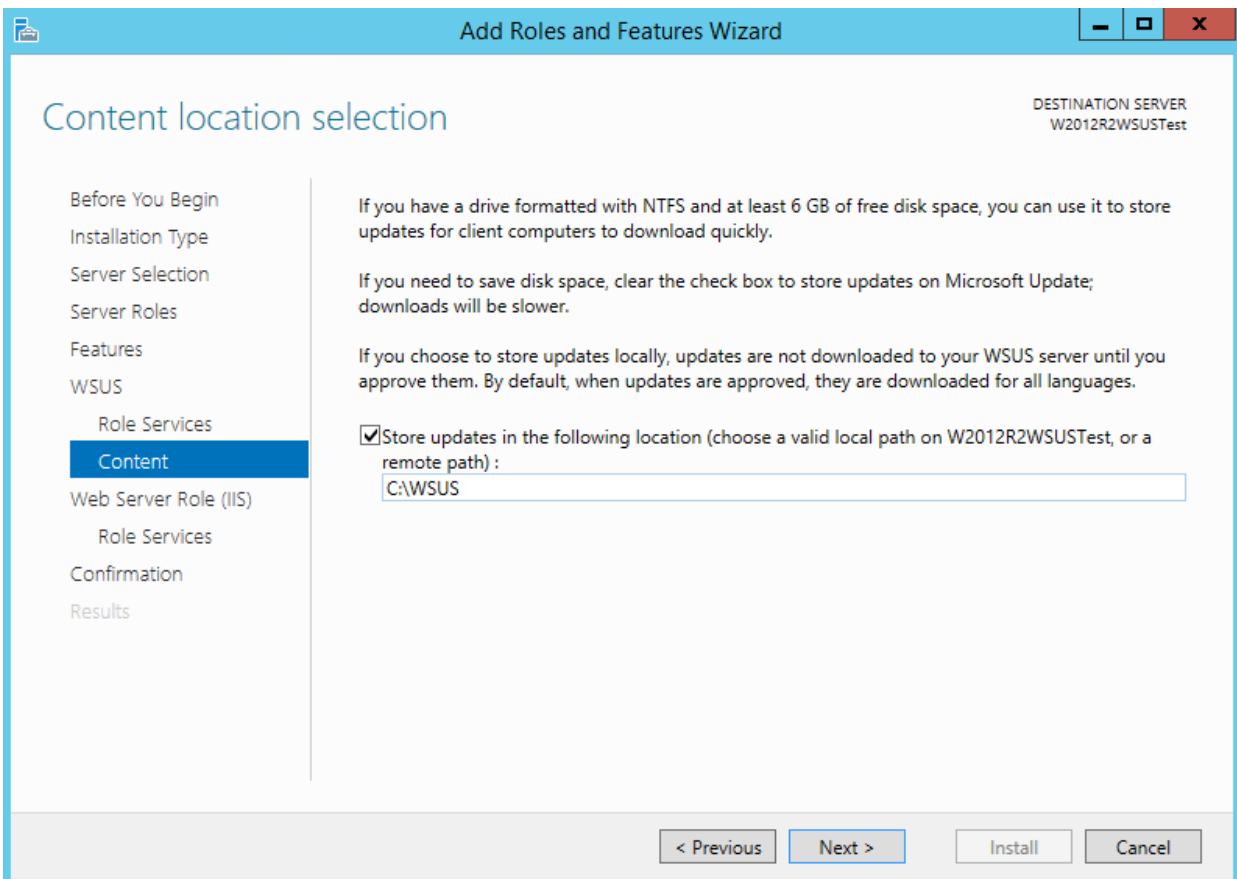
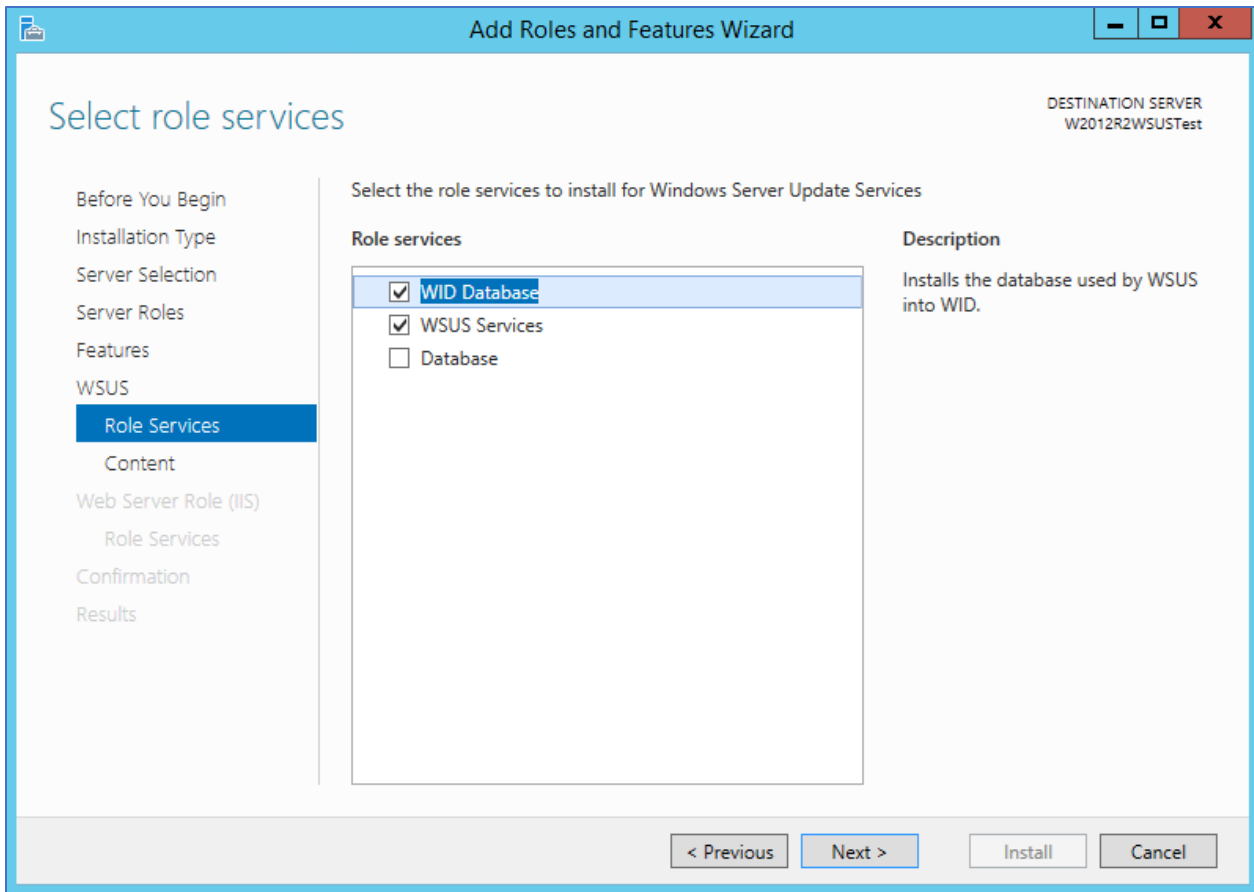
- Create a C:\CPSTemp folder on the CPSWSUS VM
- Create a C:\WSUS folder on the CPSWSUS VM
- Create a C:\WSUS\_Export folder on the CPSWSUS VM



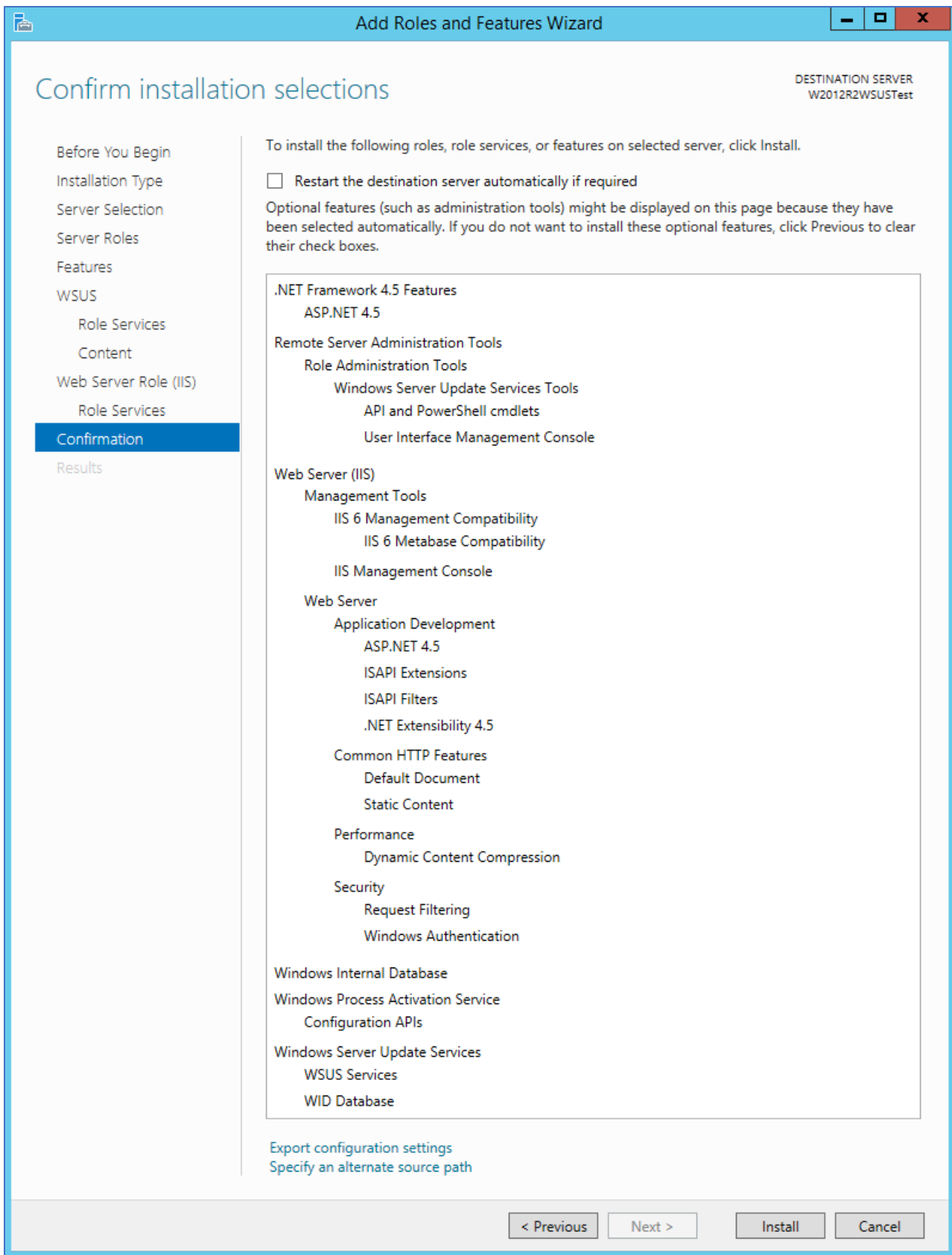
Add the WSUS server role in Server Manager



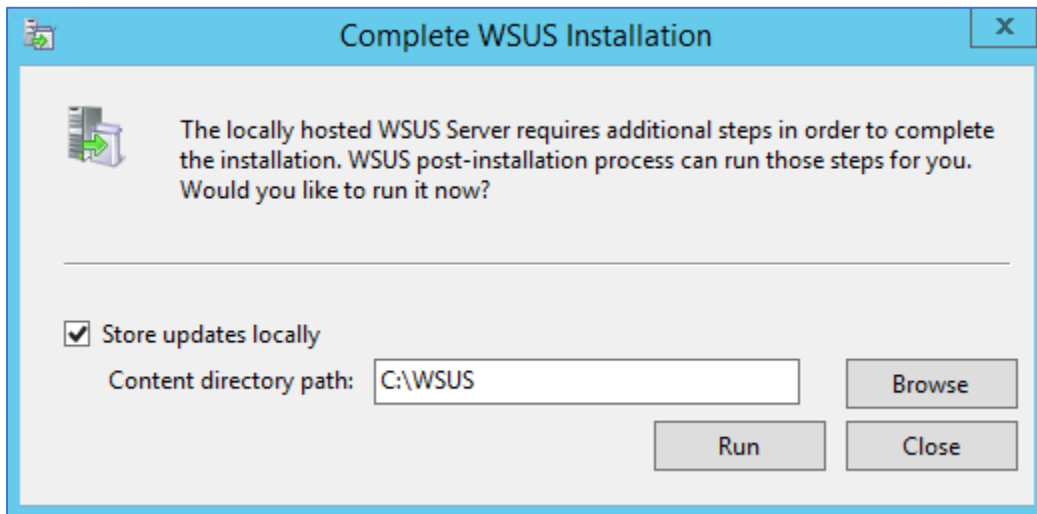
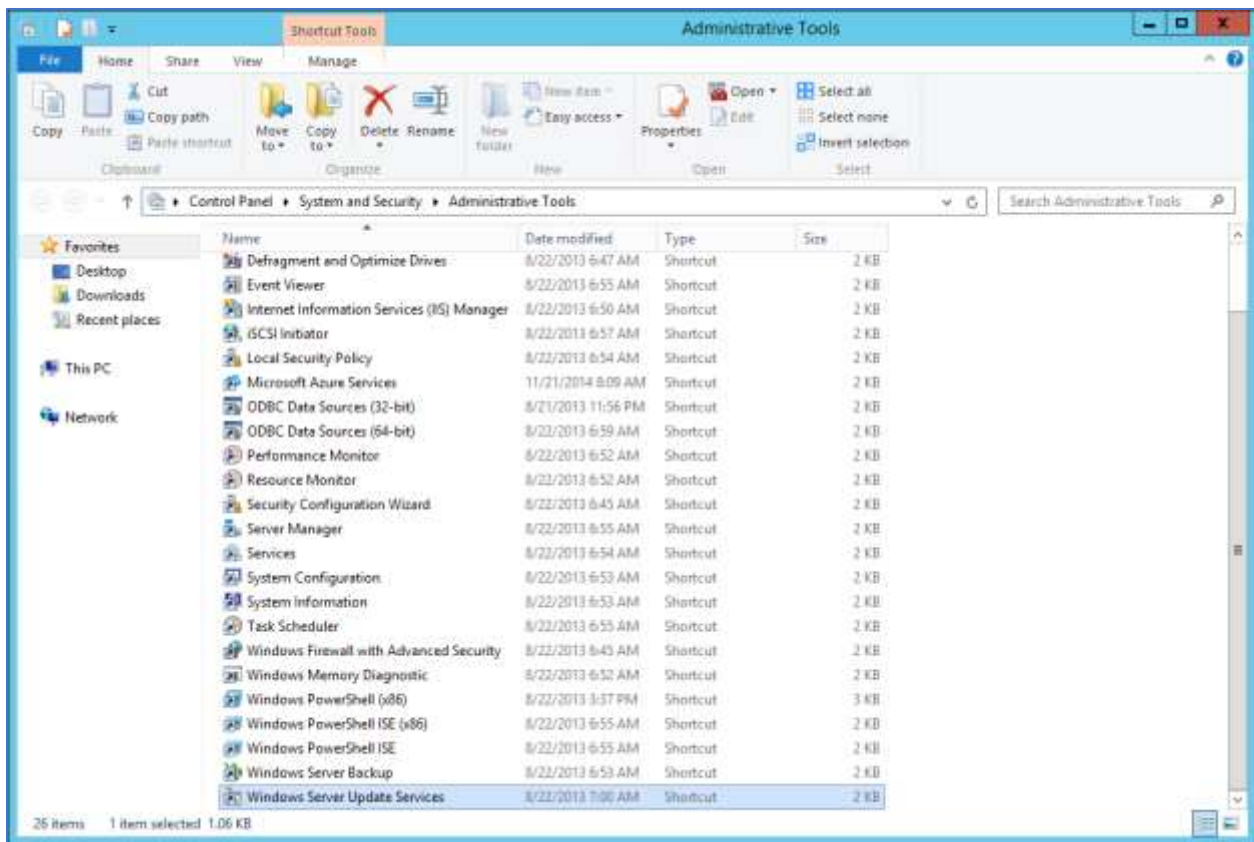




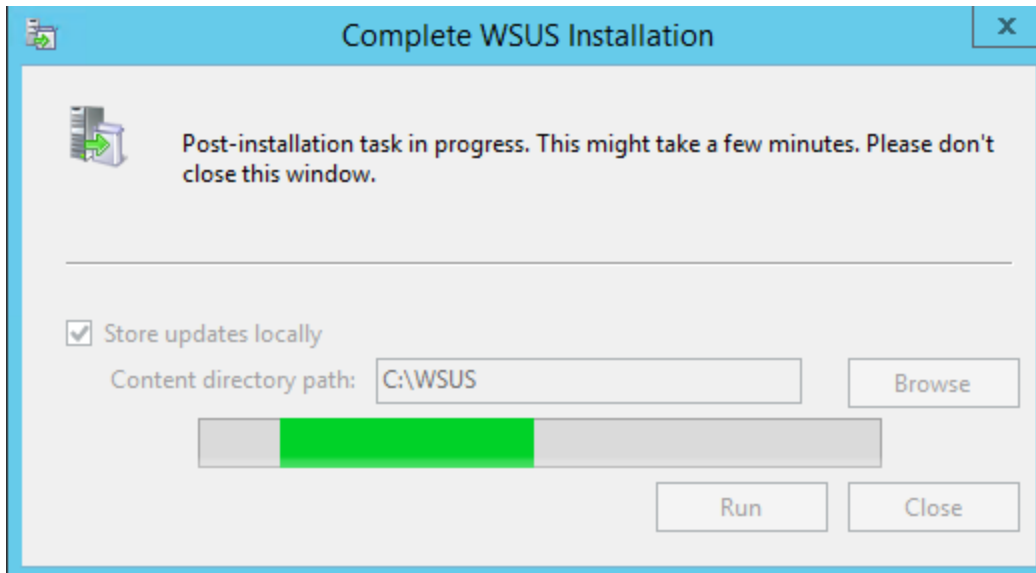
Install Summary:



Launch the WSUS Admin Console

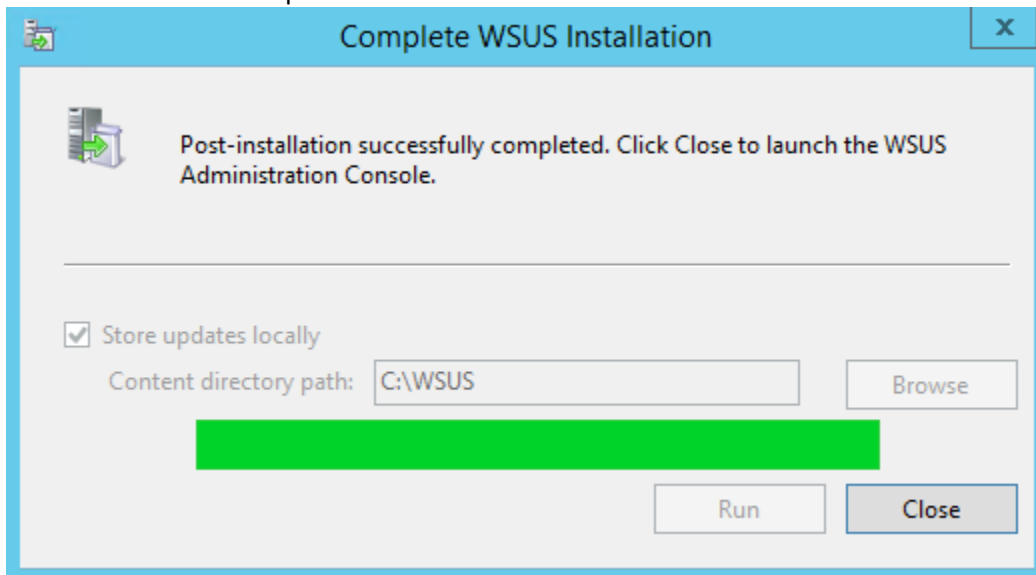


Click "Run"

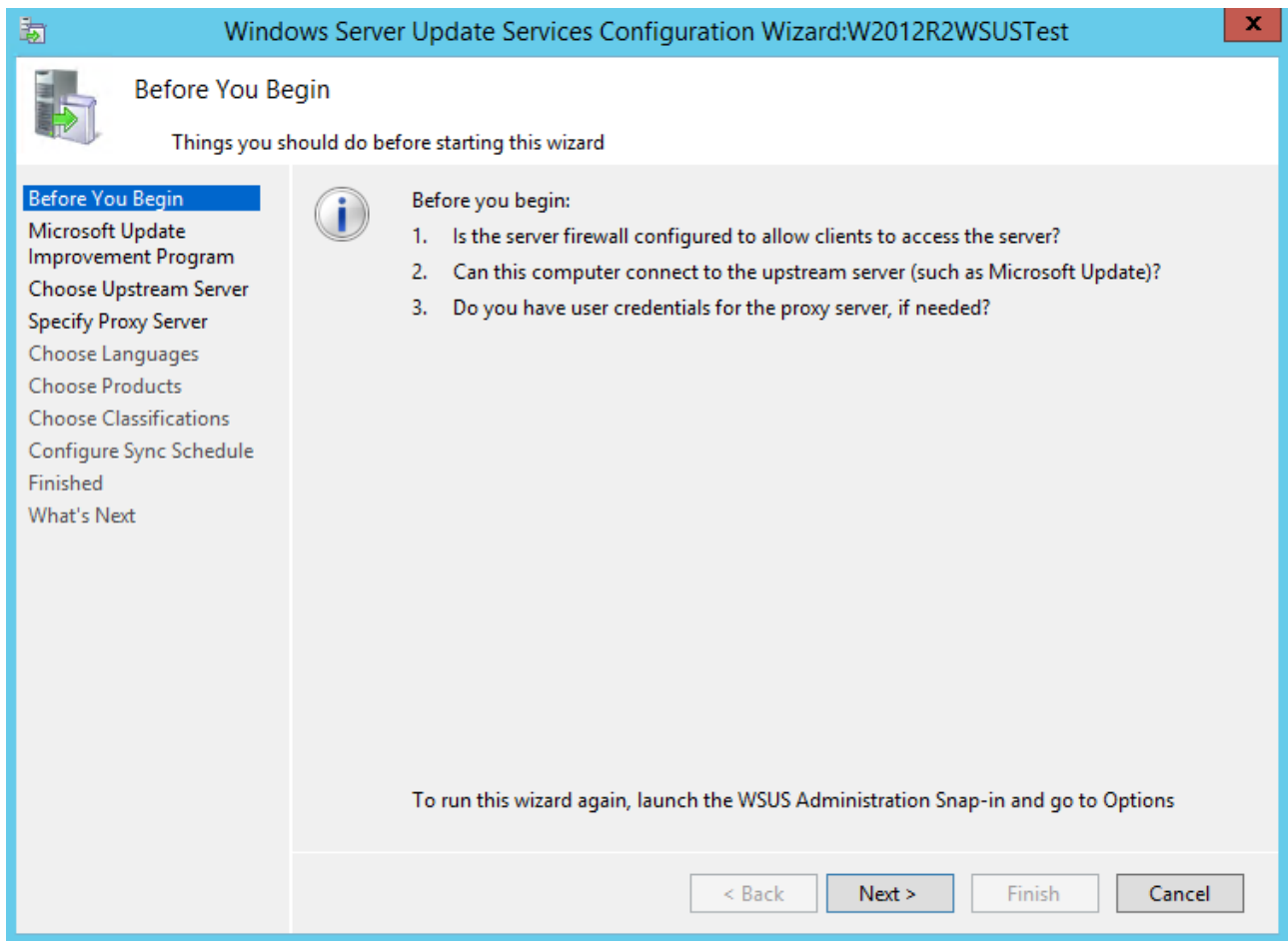


This process will take about 5 minutes to complete

Click "Close" when complete



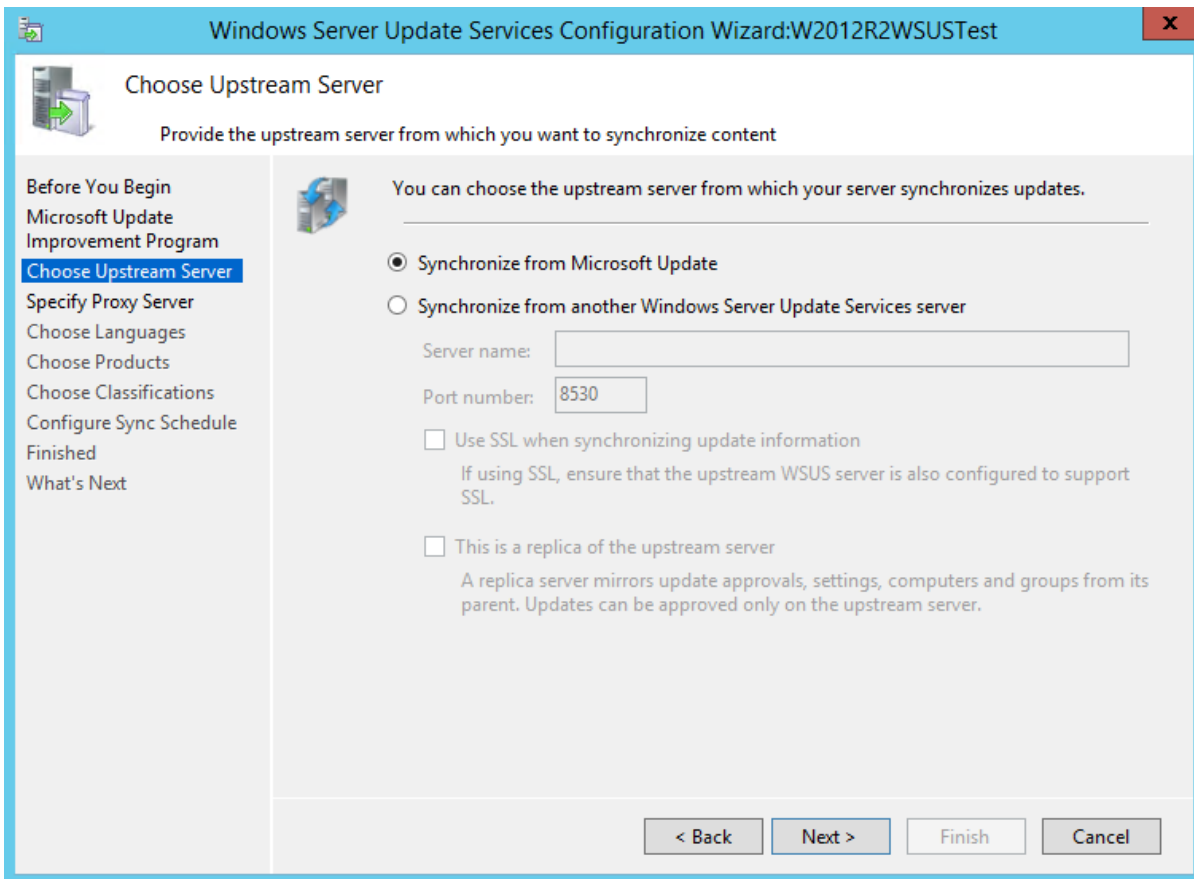
Then, the First Run Configuration Wizard will open



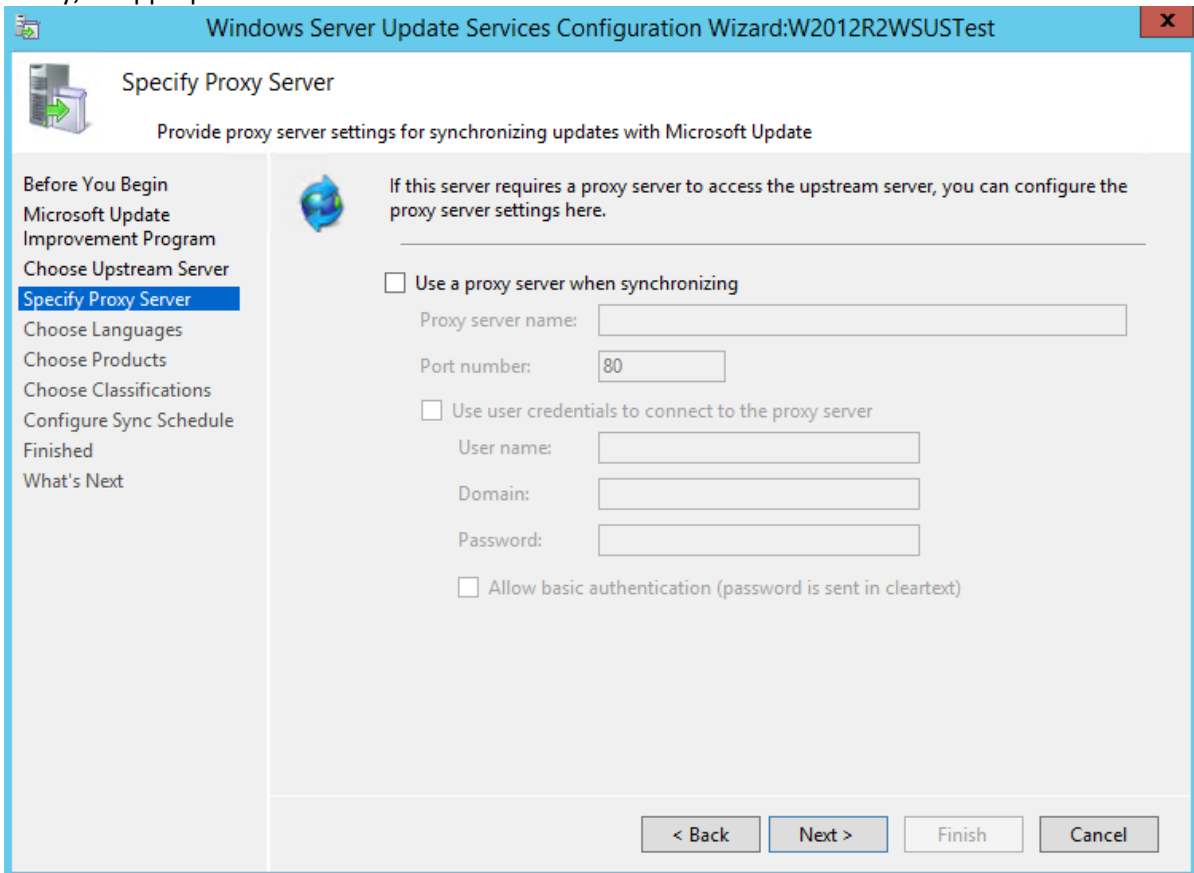
This VM must be able to connect to the Internet, including any Proxy credentials as necessary.

Configure WSUS to download the Microsoft Update directly

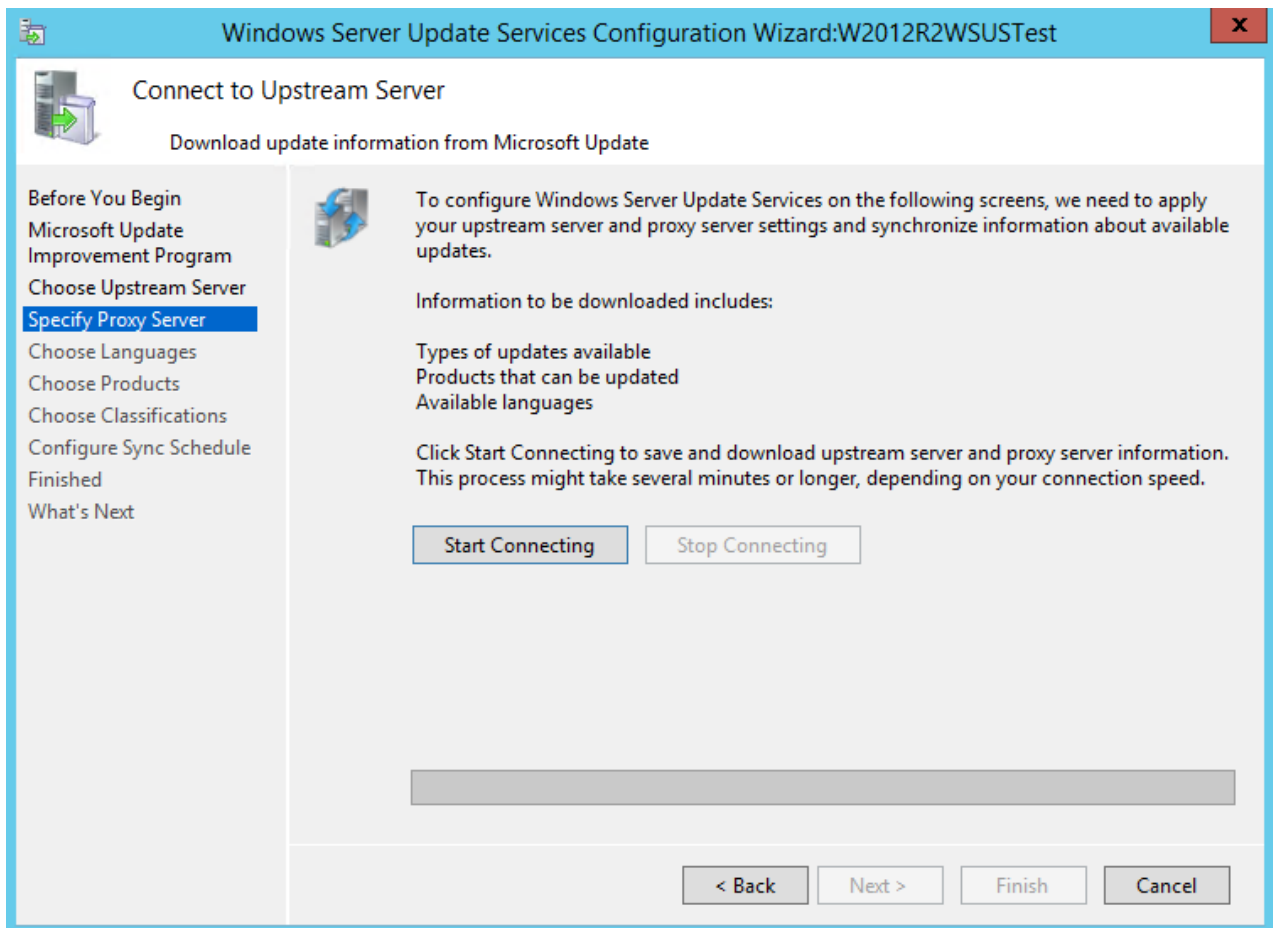




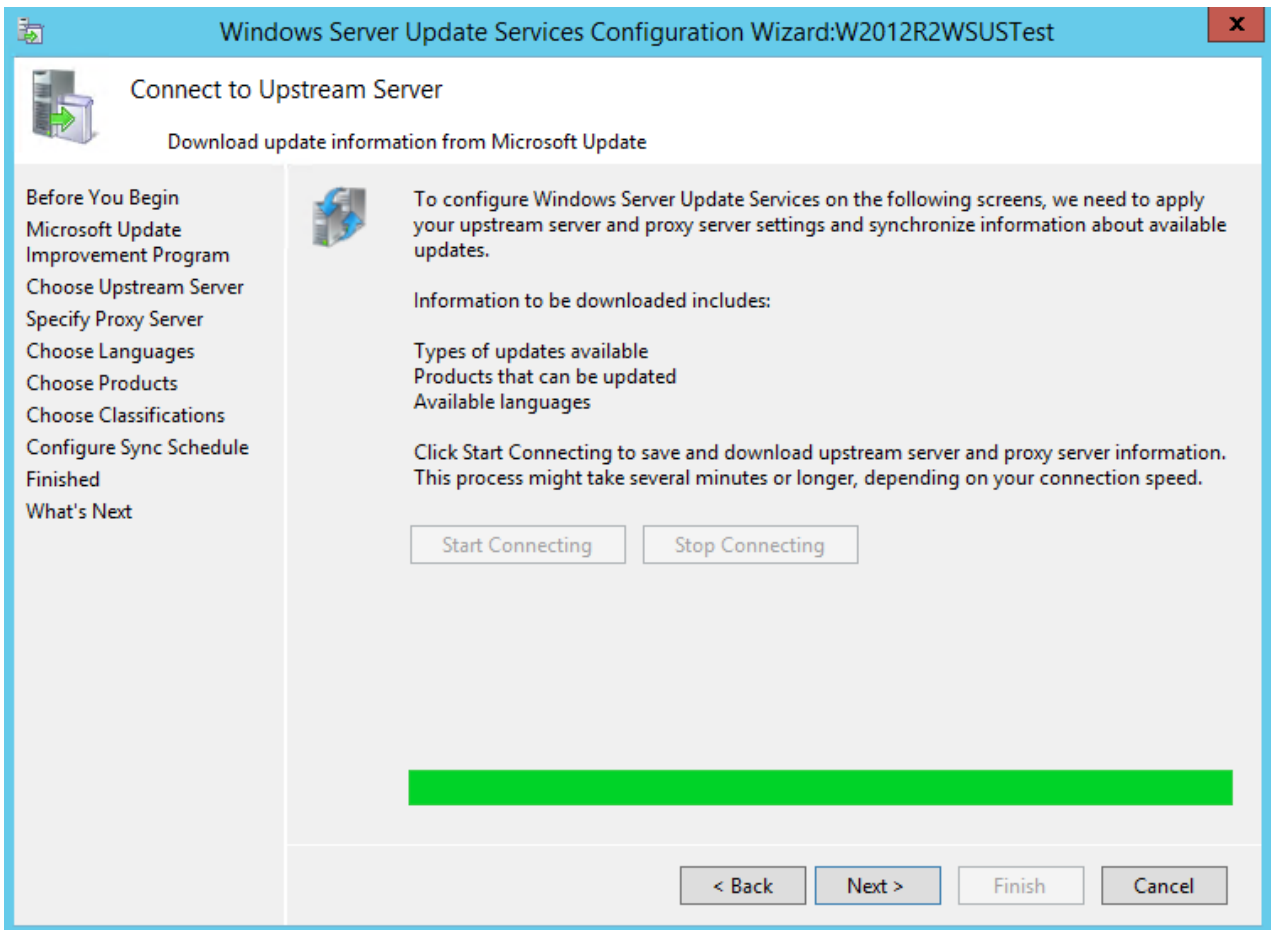
Setup Proxy, as appropriate



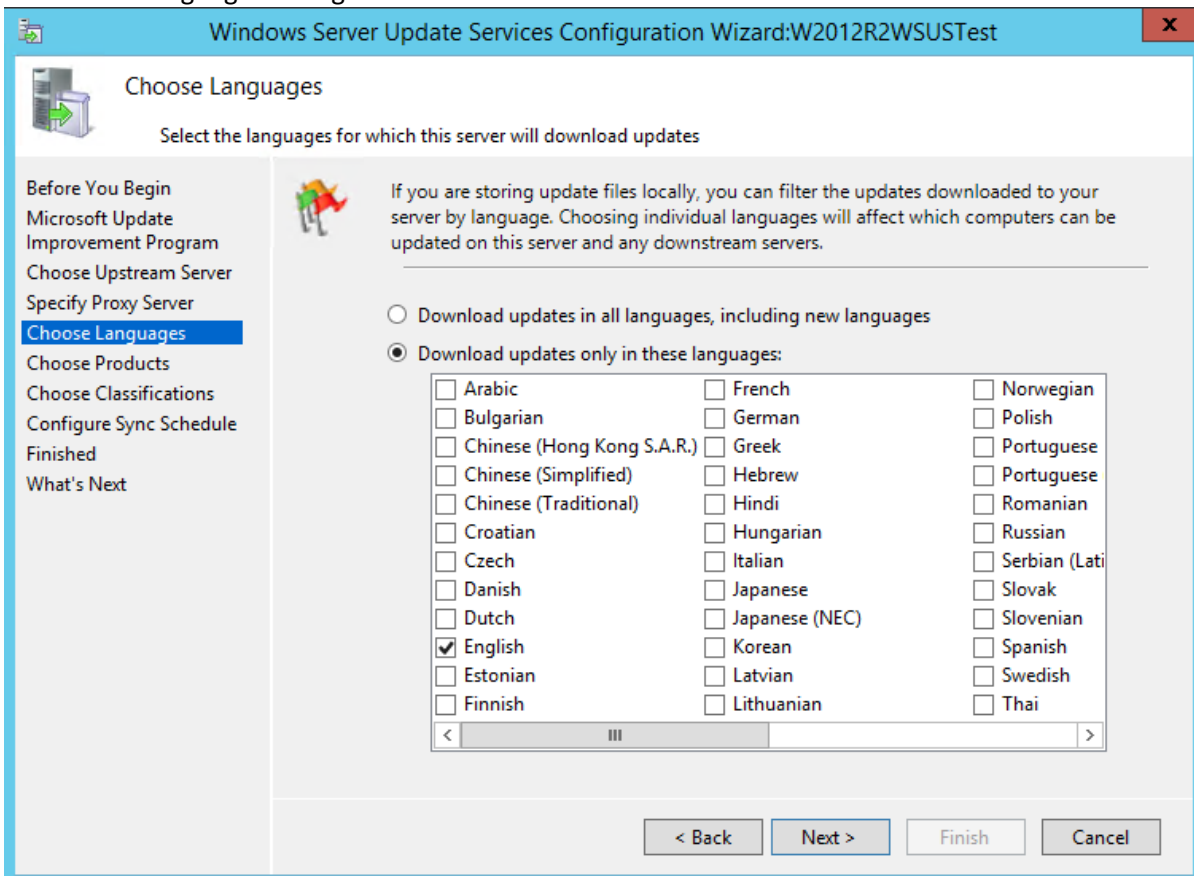
Connection screen



When complete, click "Next" to continue



Leave the default language of "English"



On the "Choose Products" screen, uncheck all of the defaults

Uncheck - Office and Windows

Check these products specifically (not their folder level categories):

"ASP.NET Web Frameworks"

"Visual Studio 2008"

"Visual Studio 2010"

"Microsoft SQL Server 2012"

"Microsoft SQL Server 2014"

"System Center 2012 R2 - Operations Manager"

"Windows Server 2012 R2"

On the "Choose Classifications", ensure that only the following are checked:

"Critical Updates"

"Definition Updates"

"Feature Packs"

"Security Updates"

"Service Packs"

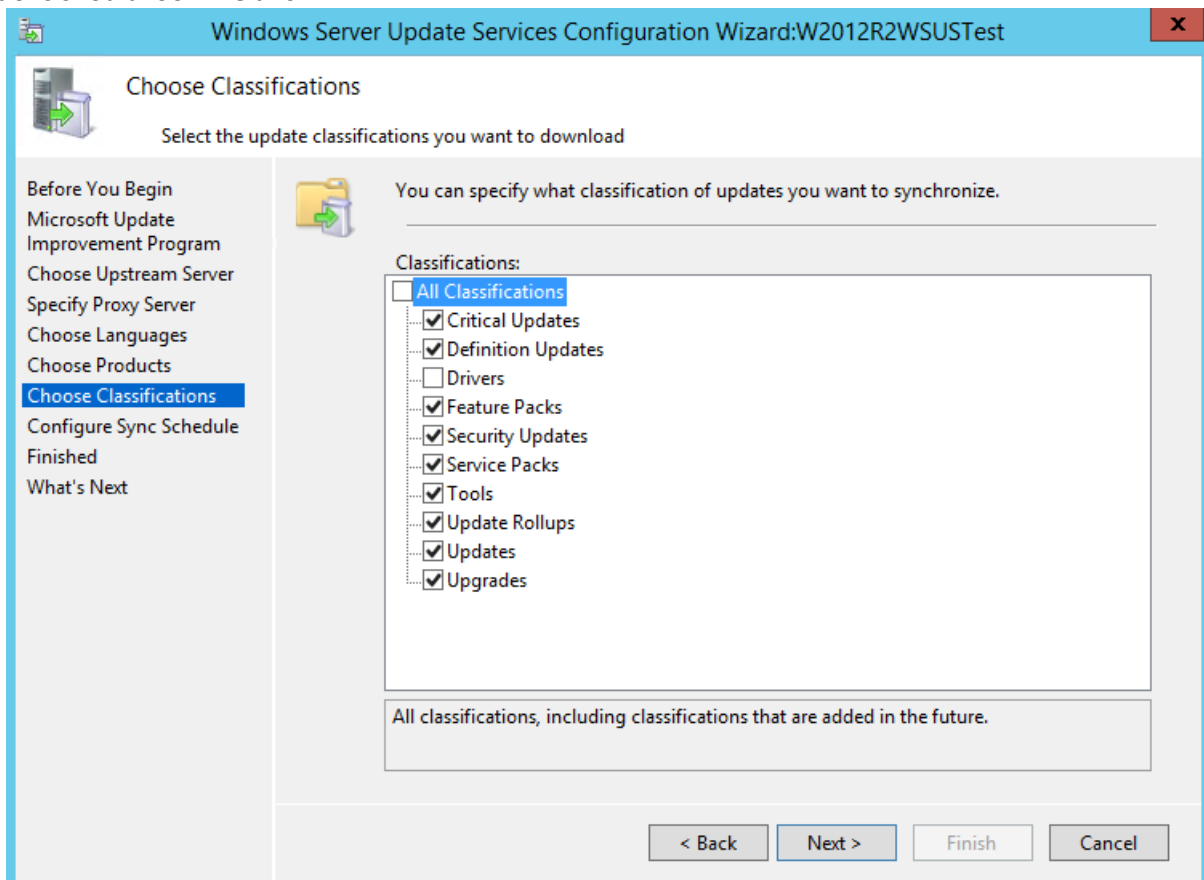
"Tools"

"Update Rollups"

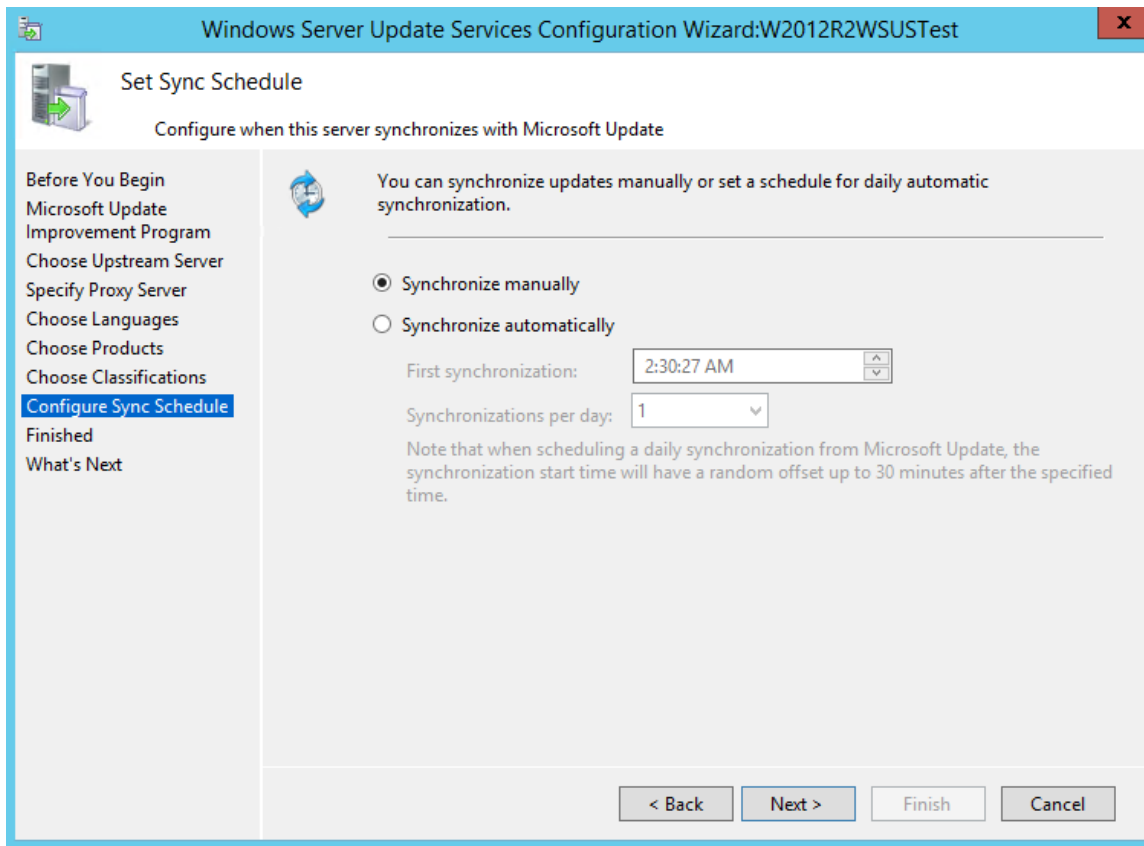
"Updates"

"Upgrades"

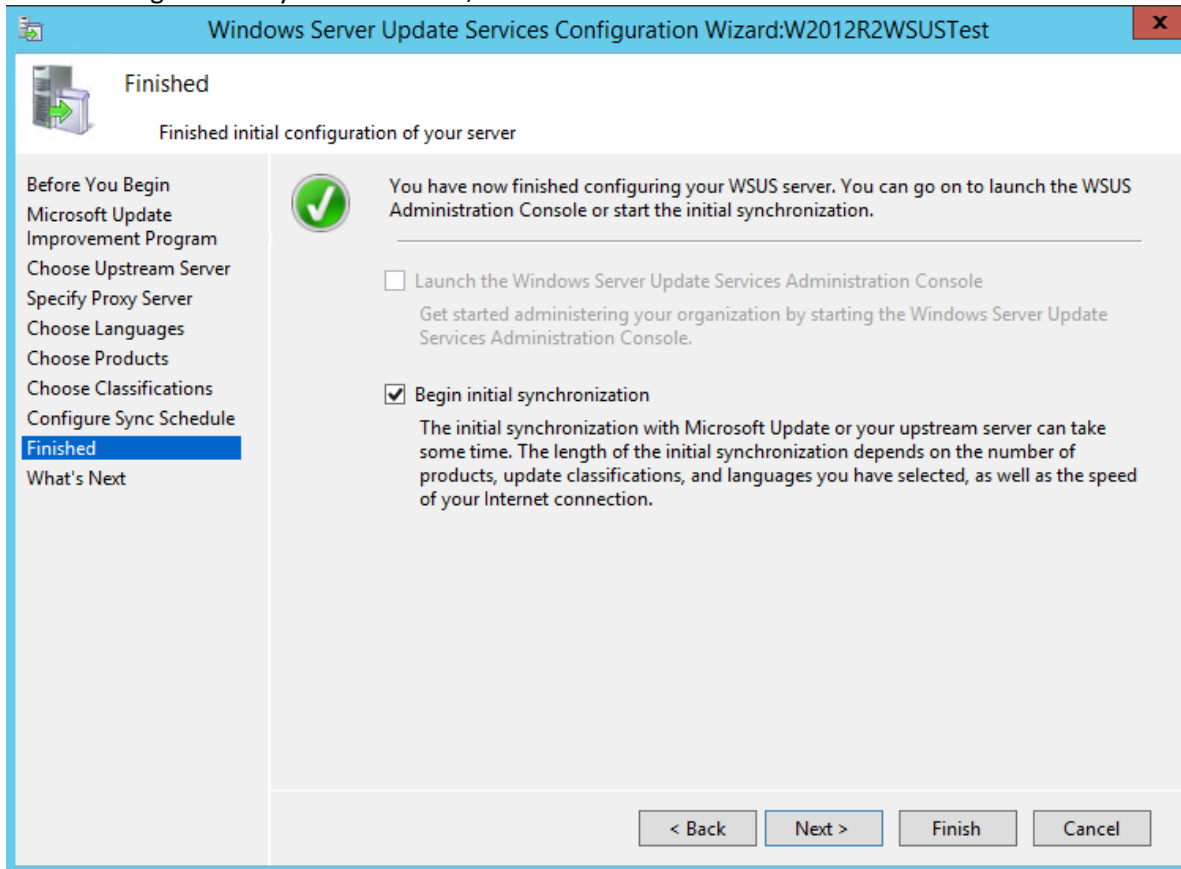
Selections should look like this:



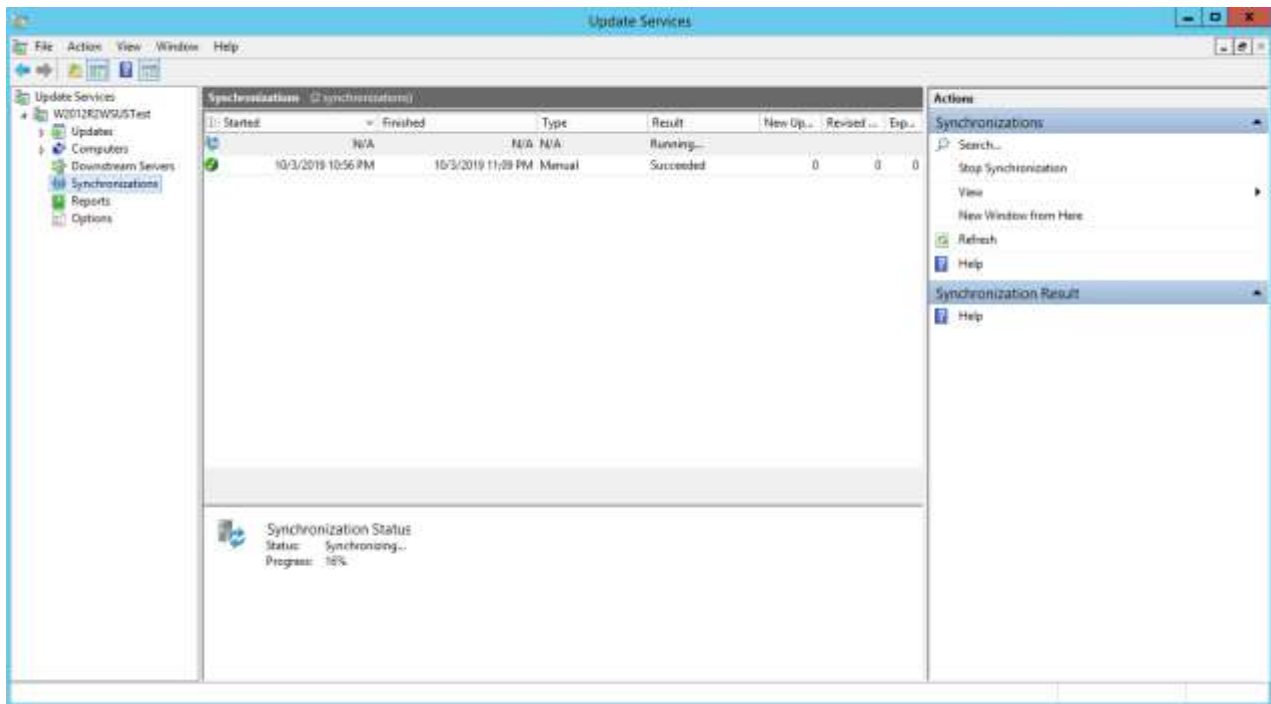
Leave schedule to manual:



Check the box "Begin initial synchronization", and click "Finish"

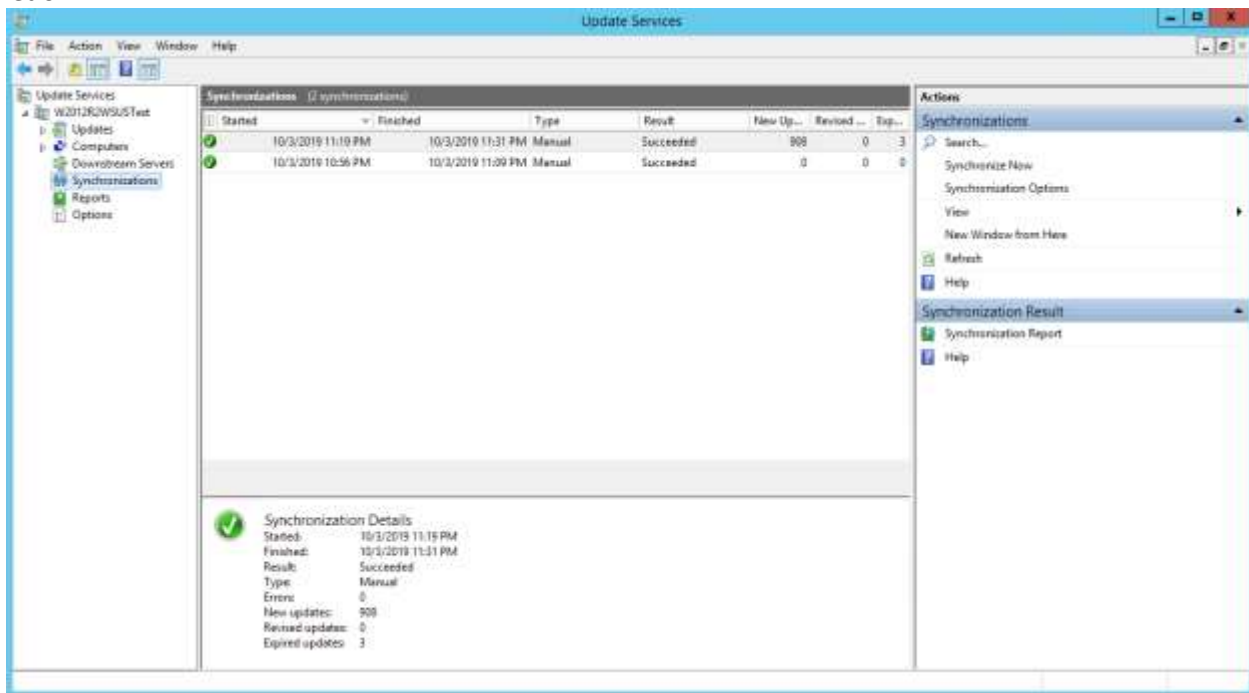


Expand the server on the left pane, and click on "Synchronizations" to see the sync in progress



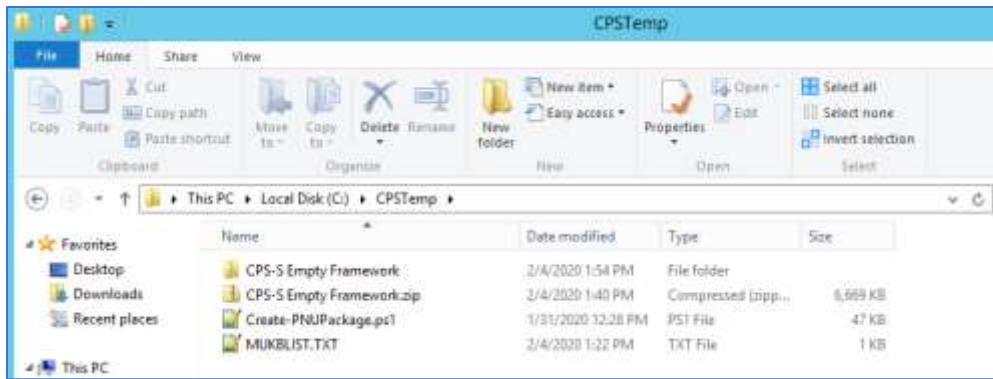
This could take some time to complete.

Completion:

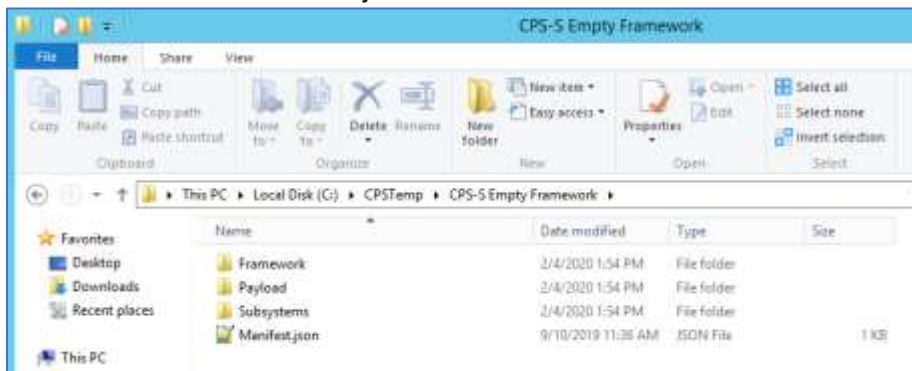


## Script Setup

Copy the provided script, Framework files (extract to a folder), and MUKBLIST.TXT into the C:\CPSTemp folder



Extract “CPS-S Empty Framework” folder in C:\CPSTemp. It contains a “blank” P&U package that is ready for payload files and a version number in the Manifest.json file.



These files along with the WSUS install, and the directories created earlier are the requirements for creating the CPS P&U payload using the Create-PNUPackage.ps1 script.

## Script Execution

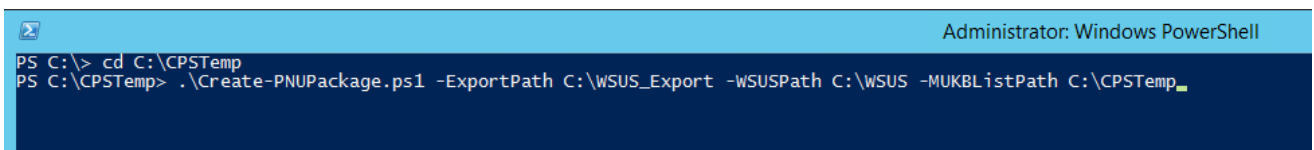
The Create-PNUPackage.ps1 script is executed to download the WSUS patch payload for CPS P&U, and that payload is exported for use with P&U.

Example MUKBLIST.TXT (1909 content, pre-check):

```
KB890830
KB4514604
KB4516067
KB4516115
```

Example Syntax for an Administrative PowerShell session:

```
CD C:\CPSTemp
.\Create-PNUPackage.ps1 -ExportPath C:\WSUS_Export -WSUSPath C:\WSUS -MUKBLListPath C:\CPSTemp
```



Sample output (details may vary):

```
PS C:\Programme -> .\Create-Package.ps1 -ExportPath C:\WSUS_Export -WSUSPath C:\WSUS -HttpUrlPath C:\WSUS_Export

*** Starting Create-Package.ps1 script

Deleting content from C:\WSUS_Export
WSUS02: Performing the operation "Remove Directory" on target "C:\WSUS_Export\Payload"
WSUS02: Performing the operation "Remove Directory" on target "C:\WSUS_Export\Payload\WSUSExport"
WSUS02: Performing the operation "Remove Directory" on target "C:\WSUS_Export\Payload\WSUSExport\WSUS"
WSUS02: Performing the operation "Remove Directory" on target "C:\WSUS_Export\Payload\WSUSExport\WSUS\WsusContent"
WSUS02: Performing the operation "Remove Directory" on target "C:\WSUS_Export\Payload\WSUSExport\WSUS\WsusContent\01"
WSUS02: Performing the operation "Remove File" on target "C:\WSUS_Export\Payload\WSUSExport\WSUS\WsusContent\01\6344F6A0C1CC100814CE5AC41C91F1011E81931 cab"
WSUS02: Performing the operation "Remove Directory" on target "C:\WSUS_Export\Payload\WSUSExport\WSUS\WsusContent\02"
WSUS02: Performing the operation "Remove File" on target "C:\WSUS_Export\Payload\WSUSExport\WSUS\WsusContent\02\77_K7818D852CE1C9566012871624E1A623520FA77 cab"
WSUS02: Performing the operation "Remove Directory" on target "C:\WSUS_Export\Payload\WSUSExport\WSUS\WsusContent\03"
WSUS02: Performing the operation "Remove File" on target "C:\WSUS_Export\Payload\WSUSExport\WSUS\WsusContent\03\002240A8C40F3CC83578215E879BC0A00028F10 cab"
WSUS02: Performing the operation "Remove Directory" on target "C:\WSUS_Export\Payload\WSUSExport\WSUS\WsusContent\04"
WSUS02: Performing the operation "Remove File" on target "C:\WSUS_Export\Payload\WSUSExport\WSUS\WsusContent\04\01E23381E18E2C209955109129C5F80C0CE0F1 exe"
WSUS02: Performing the operation "Remove Directory" on target "C:\WSUS_Export\Payload\WSUSExport\WSUS\WsusContent\05"
WSUS02: Performing the operation "Remove File" on target "C:\WSUS_Export\Payload\WSUSExport\WSUS\WsusContent\05\8BA7E403780431E80C8X81C1C88423F9E80479C cab"
WSUS02: Performing the operation "Remove Directory" on target "C:\WSUS_Export\Payload\WSUSExport\WSUS\WsusContent\06"
WSUS02: Performing the operation "Remove File" on target "C:\WSUS_Export\Payload\WSUSExport\WSUS\WsusContent\06\AA791229AED10F8E78E8F8F200108344ACC07AA cab"
WSUS02: Performing the operation "Remove Directory" on target "C:\WSUS_Export\Payload\WSUSExport\WSUS\WsusContent\07"
WSUS02: Performing the operation "Remove File" on target "C:\WSUS_Export\Payload\WSUSExport\WSUS\WsusContent\07\80C18665548881308840C253D8160992805F0D exe"
WSUS02: Performing the operation "Remove File" on target "C:\WSUS_Export\Payload\WSUSExport\WSUS\WsusContent\anonymousCheckFile.txt"
WSUS02: Performing the operation "Remove File" on target "C:\WSUS_Export\Payload\WSUSExport\WSUSExport.cab"
WSUS02: Performing the operation "Remove File" on target "C:\WSUS_Export\Payload\WSUSExport\WSUSExport.cab"
Success: Cleaning folder "C:\WSUS_Export" is complete

Syncing all updates from WSUS and deleting local (downloaded) WSUS content
Cleaning, deleting 4 updates
Cleaning needed directory C:\WSUS\WsusContent
Checking for emptyWsusContent folder
Success: www.wsuscheckfile.txt is there, good to go
Success: local WsusContent folder is cleaned up

Setting to sync against Microsoft Update (MU)
The Update Server was successfully configured with the following parameters:
Synchronize from Microsoft update

Setting Approved Products and Classifications as defined in this script
Disabling all products and classifications
Re-enabling all products and classifications
Approved Product type Windows Server 2012 R2 Found in MU, enabling
Approved Product type System Center 2012 R2 - Operations Manager Found in MU, enabling
Approved Product type Microsoft SQL Server 2012 Found in MU, enabling
Approved Product type Microsoft SQL Server 2012 Found in MU, enabling
Approved Product type Visual Studio 2010 Found in MU, enabling
Approved Product type Visual Studio 2010 Found in MU, enabling
Approved Product type AMP .NET Web Frameworks Found in MU, enabling
Approved Classification type Found in MU, enabling Critical Updates
Approved Classification type Found in MU, enabling Security Updates
Approved Classification type Found in MU, enabling Service Packs
Approved Classification type Found in MU, enabling Update Rollups
Approved Classification type Found in MU, enabling Updates
Approved Classification type Found in MU, enabling Updates
Approved Classification type Found in MU, enabling Tools
Approved Classification type Found in MU, enabling Feature Packs
Approved Classification type Found in MU, enabling Definition Updates

Starting WSUS catalog sync
WSUS is configured to sync from MU with HttpUrl 'https://wus.update.microsoft.com', without Proxy setting.
2/4/2020 1:10 PM -- Sync start in progress, current state 'Running', 0 total items to sync, 0 items already processed.
Sleeping for 300 seconds and checking again.
2/4/2020 1:13 PM -- Sync start in progress, current state 'Running', 3488 total items to sync, 1378 items already processed.
Sleeping for 300 seconds and checking again.
2/4/2020 1:16 PM -- Sync start in progress, current state 'Running', 3488 total items to sync, 2574 items already processed.
Sleeping for 300 seconds and checking again.
2/4/2020 1:19 PM -- Sync start in progress, current state 'Running', 3488 total items to sync, 3202 items already processed.
Sleeping for 300 seconds and checking again.
WSUS sync was successful

Cleaning up expired, obsolete and superseded updates
Results from the cleanup:
Disk Space Freed: 0
Expired Updates Declined: 0
Obsolete Updates Declined: 0
Superseded Updates Declined: 0
Updates Compressed (old revisions removed): 1
Cleaning, deleting 0 updates
```



```
Administrator: Windows PowerShell
Searching kb update list for superseded updates
*** Supersedence Check #1
update KB4492912 is in the approved KB list but it has been superseded by 'KB4503276'
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB4499400 is in the approved KB list but it has been superseded by KB4507422'
update KB4497932 is in the approved KB list but it has been superseded by KB4516115'
update KB4497932 is in the approved KB list but it has been superseded by KB4503308'
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
Match found against Approved KB KB890830
Match found against Approved KB KB4516115
*** Supersedence Check #2
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB4507422 is in the approved KB list but it has been superseded by 'KB4514604'
update KB4503308 is in the approved KB list but it has been superseded by KB4507448'
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
Match found against Approved KB KB890830
Match found against Approved KB KB4516115
*** Supersedence Check #3
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB4507448 is in the approved KB list but it has been superseded by KB4511488'
Match found against Approved KB KB890830
Match found against Approved KB KB4516115
*** Supersedence Check #4
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
Match found against Approved KB KB4514604
update KB451488 is in the approved KB list but it has been superseded by 'KB4516067'
Match found against Approved KB KB890830
Match found against Approved KB KB4516115
*** Supersedence Check #5
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB4514604 is in the approved KB list but it has been superseded by 'KB4524136'
Match found against Approved KB KB4514604
Match found against Approved KB KB890830
Match found against Approved KB KB4516115
*** Supersedence Check #6
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
update KB890830 is in the approved KB list but it has been superseded by a newer version of this same KB
Match found against Approved KB KB4514604
Match found against Approved KB KB890830
Match found against Approved KB KB4524136
Match found against Approved KB KB4516115
Approving KB updates in WSUS server catalog
Match found against Approved KB KB4514604
Approving update '2019-09 Security and Quality Rollup for .NET Framework 3.5, 4.5.2, 4.6, 4.6.1, 4.6.2, 4.7, 4.7.1, 4.7.2, 4.8 for Windows 8.1 and Server 2012 R2 for x64 (KB4514604)'
Match found against Approved KB KB890830
Approving update 'Windows Malicious Software Removal Tool x64 - August 2019 (KB890830)'
Match found against Approved KB KB4524136
Approving update '2019-09 Security Monthly Quality Rollup for Windows Server 2012 R2 for x64-based Systems (KB4524136)'
Match found against Approved KB KB4516115
Approving update '2019-09 Security Update for Adobe Flash Player for Windows Server 2012 R2 for x64-based Systems (KB4516115)'
Successfully deleting 594 updates
KB4514604 was found to be in WSUS
KB4516115 was found to be in WSUS
KB4524136 was found to be in WSUS
KB890830 was found to be in WSUS
KB updates approved in WSUS server catalog
Beginning wait or download for approved updates
Download of updates is complete for this server!
Validating that all Windows Server updates have their installable files downloaded into the WSUS content folder
KB4514604: Found update file C:\WSUS\wsusContent\0B1E41D1F9747820E8DA494AD81DAF96B556ED4A06_cab
KB4514604: Found update file C:\WSUS\wsusContent\215247C9B74D37E89F8C327EDFAE39112C8991C11_cab
KB4514604: Found update file C:\WSUS\wsusContent\F814652369D18CED493EE804F95448B978C8A14EF8_cab
KB4514604: Found update file C:\WSUS\wsusContent\86138A90FED8D5A1D050085FB26A190551212CDB8_cab
KB890830: No update file of type SelfContained was found.
KB4524136: Found update file C:\WSUS\wsusContent\DC1A169E0893F2963E3239AA8B0182F8FAC567280C_cab
KB4516115: Found update file C:\WSUS\wsusContent\AA17933299AE010F8E8E8F88FD082E93646CC07AA_cab
Success: All approved updates in WSUS have been downloaded and verified.
Creating export folders in C:\WSUS_Export
Exporting the export cab to C:\WSUS_Export\Payload\WSUSExport
Exporting the WSUS content binaries to C:\WSUS_Export\Payload\WSUSExport\WSUS
WSUS content exported to C:\WSUS_Export\Payload\WSUSExport\WSUS
Updating BOM.XML file in C:\WSUS_Export\Payload
BOM.XML update complete
*** Create-PNIPackage.ps1 script is complete
PS C:\CPSTemp >
```

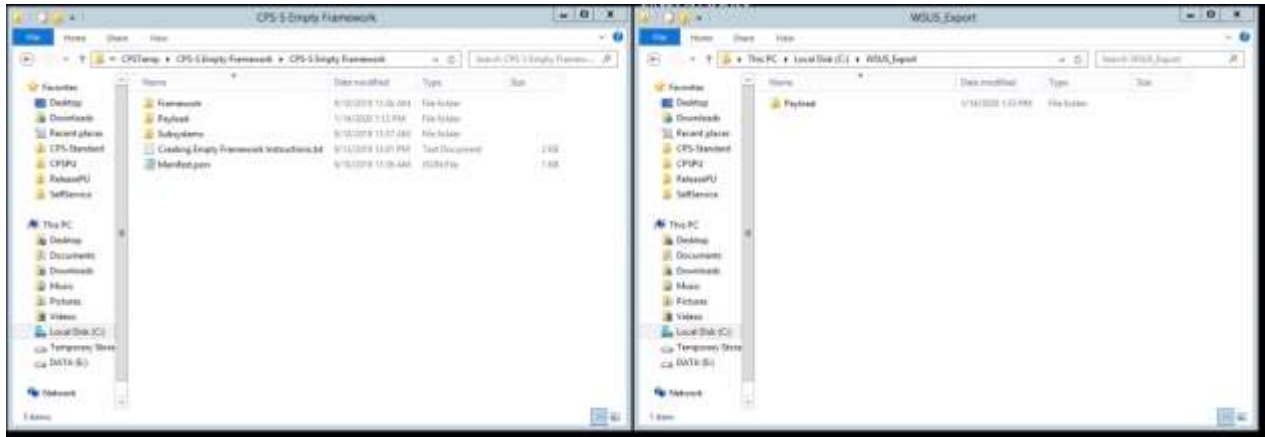
Note: After script completion, the original C:\CPSTemp\MUKBLIST.TXT is updated to contain the list of updates downloaded for the P&U package. Those KB updates are downloaded for inclusion into the CPS P&U Export binaries (C:\WSUS\_Export in the above example).

Example Final MUKBLIST.TXT (1910 updated content, post-check):

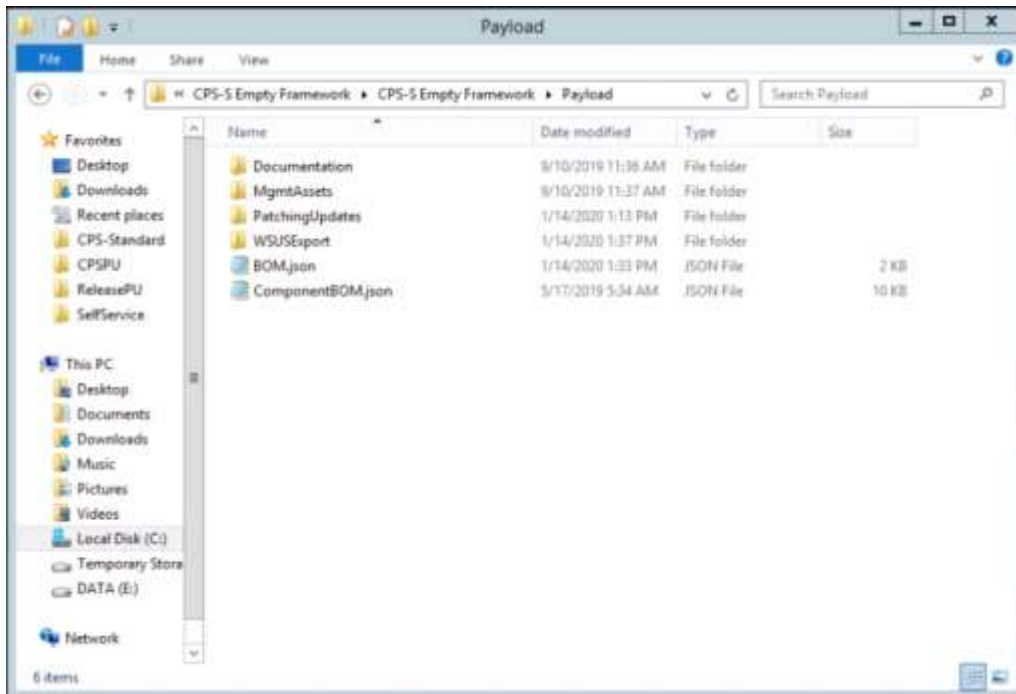
KB4516115  
KB4520005  
KB4524104  
KB890830

## File Copy and Versioning

In the WSUS\_Export folder, is the exported WSUS payload for P&U. Copy the Payload folder in WSUS\_Export into the “CPS-S Empty Framework” folder in C:\CPSTemp. It should already have a Payload folder to match.

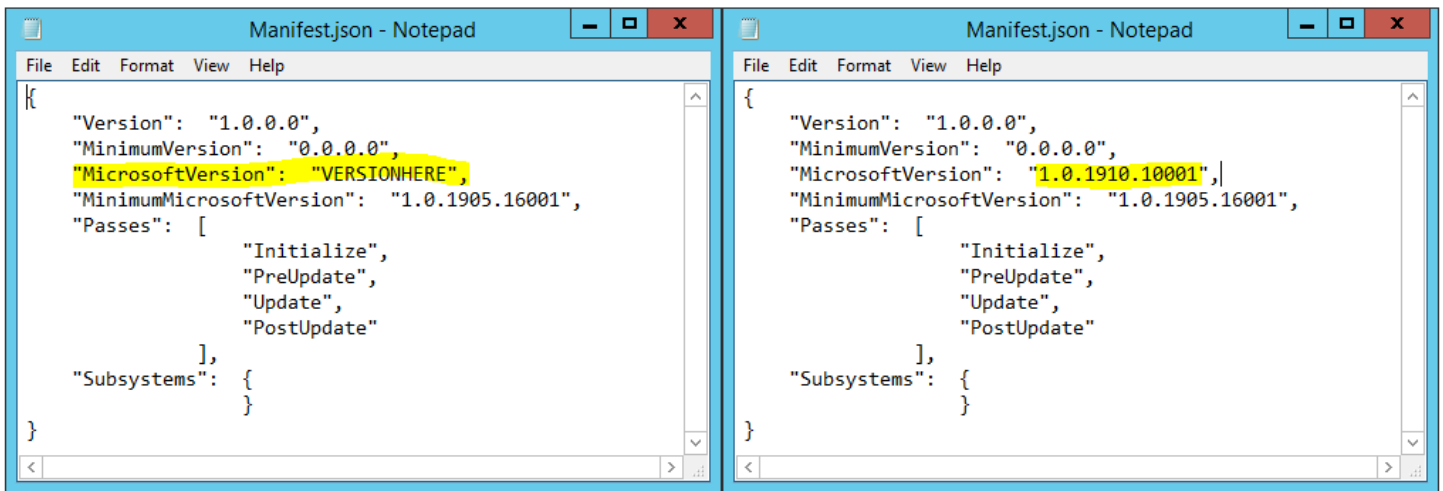


Contents of the combined Payload folder should look like this:



P&U package versioning needs to be done manually. The Manifest.json file should be updated with a version number. The version number should keep the same format as other P&U packages, with the date.

Example for October 10<sup>th</sup>, 2019 would be: 1.0.1910.10001  
Example for February 11<sup>th</sup>, 2020 would be: 1.0.2002.11001  
Example for June 9<sup>th</sup>, 2020 would be: 1.0.2006.09001



Make sure that the package version adheres to the general examples above so that future packages will install correctly.

## Results

The resulting package should contain payload files and an appropriate P&U package version. This package can now be used for a P&U install.