Windows Server 2022

Different system versions have different packaging methods. The packaging process includes: "Language pack: add, associate, delete", "Driver: add, delete", "Cumulative update: add, delete", "InBox Appx: add, Update, mark" etc.

There are many hidden stories hidden behind this. If you want to unlock these, are you ready to start trying to encapsulate them?

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## **[deployment image](#_top)**

### **[PREREQUISITES](#_Customize_the_deployment)**

#### [**ISO tools**](#_PREREQUISITES)

Use a software that can edit ISO files, such as: PowerISO, DAEMON Tools, ISO Workshop;

#### **[Requirements](#_PREREQUISITES)**

Learn "Attachment: OS" and view the "Windows Server 2022",

1. [**System installation package**](#_Get_related_packages)
   1. Prepare: en-us\_windows\_server\_2022\_x64\_dvd\_620d7eac.iso
   2. Unzip to: D:\en-us\_windows\_server\_2022\_x64\_dvd\_620d7eac
   3. After decompression is complete, change the directory en-us\_windows\_server\_2022\_x64\_dvd\_620d7eac to D:\OS\_2022
   4. All scripts and all paths have been set to D:\OS\_2022 by default as the image source.

##### [**Language Pack**](#_Get_related_packages)

###### **Learn**

* + 1. [Add languages to a Windows 11 image](https://learn.microsoft.com/en-us/azure/virtual-desktop/windows-11-language-packs)
    2. [Language and region Features on Demand (FOD)](https://learn.microsoft.com/en-us/windows-hardware/manufacture/desktop/features-on-demand-language-fod?view=windows-11)
       1. **Regional association**

What are regional connections?

* When the image language is only in English, after adding the zh-HK language pack, the image language will not be added. You should install zh-TW first, and then install zh-HK to obtain the corresponding association.
* Please refer to Microsoft's official original version: Windows 10, Windows 11 Traditional Chinese version.

**Known regional associations:**

* + - * 1. Region: zh-TW, Optional associated areas: zh-HK
      1. **Fonts**

When adding a language pack, when the corresponding region is triggered, the required font functions need to be added, download "[List of all available language FODs](https://download.microsoft.com/download/7/6/0/7600F9DC-C296-4CF8-B92A-2D85BAFBD5D2/Windows-10-1809-FOD-to-LP-Mapping-Table.xlsx)" learn more.

In "[Language Pack: Extraction](#_Language_Pack:_Extraction_1)", the automatic recognition function has been added, and you can understand the functions: Function Match\_Required\_Fonts

###### **Language pack: Download**

[20348.1.210507-1500.fe\_release\_amd64fre\_SERVER\_LOF\_PACKAGES\_OEM.iso](https://software-download.microsoft.com/download/sg/20348.1.210507-1500.fe_release_amd64fre_SERVER_LOF_PACKAGES_OEM.iso)

1. When running the PS command line:
2. Optional "Terminal" or "PowerShell ISE", if "Terminal" is not installed, please go to: <https://github.com/microsoft/terminal/releases> After downloading;
3. Open "Terminal" or "PowerShell ISE" as administrator, it is recommended to set the PowerShell execution policy: bypass, PS command line:

Set-ExecutionPolicy -ExecutionPolicy Bypass -Force

1. In this article, PS command line, green part, please copy it, paste it into the "Terminal" dialog box, press Enter and start running;
2. When there is .ps1, right-click the file and select Run with PowerShell, or copy the path and paste it into Terminal to run.

### **[LANGUAGE PACKAGE: EXTRACT](#_Customize_the_deployment)**

1. [**Prepare the language pack**](#_2、提取所需语言包)

Mounted 20348.1.210507-1500.fe\_release\_amd64fre\_SERVER\_LOF\_PACKAGES\_OEM.iso or unzip it to any location;

1. **Extract language pack scheme**

##### **Add**

* 1. Language name: Simplified Chinese - China, language tag: zh-CN, Scope of application: Install.Wim，Boot.Wim，WinRE.Wim

##### **Delete**

* 1. Language name: English - United States, language tag: en-US, Scope of application: Install.Wim，Boot.Wim，WinRE.Wim

1. **[Execute the extract command](#_2、提取所需语言包)**

* Auto = automatically search all local disks, default;
* Customize the path, for example, specify the E drive: $ISO = "E:\"

Copy the code or view the source file: Extract.ps1 ( [Local](Expand/Extract.ps1), [Github](https://github.com/ilikeyi/solutions/blob/main/_Documents/Attachment/OS.2022/Expand/Extract.ps1) )

$ISO = "Auto"

$SaveTo = "D:\OS\_2022\_Custom"

$Extract\_language\_Pack = @(

@{ Tag = "zh-CN"; Act = "Add"; Scope = @( "Install\Install"; "Install\WinRE"; "Boot\Boot" ) }

@{ Tag = "en-US"; Act = "Del"; Scope = @( "Install\Install"; "Install\WinRE"; "Boot\Boot" ) }

)

Function Extract\_Language

{

param( $Act, $NewLang, $Expand )

Function Match\_Required\_Fonts

{

param( $Lang )

$Fonts = @(

@{ Match = @("as", "ar-SA", "ar", "ar-AE", "ar-BH", "ar-DJ", "ar-DZ", "ar-EG", "ar-ER", "ar-IL", "ar-IQ", "ar-JO", "ar-KM", "ar-KW", "ar-LB", "ar-LY", "ar-MA", "ar-MR", "ar-OM", "ar-PS", "ar-QA", "ar-SD", "ar-SO", "ar-SS", "ar-SY", "ar-TD", "ar-TN", "ar-YE", "arz-Arab", "ckb-Arab", "fa", "fa-AF", "fa-IR", "glk-Arab", "ha-Arab", "ks-Arab", "ks-Arab-IN", "ku-Arab", "ku-Arab-IQ", "mzn-Arab", "pa-Arab", "pa-Arab-PK", "pnb-Arab", "prs", "prs-AF", "prs-Arab", "ps", "ps-AF", "sd-Arab", "sd-Arab-PK", "tk-Arab", "ug", "ug-Arab", "ug-CN", "ur", "ur-IN", "ur-PK", "uz-Arab", "uz-Arab-AF"); Name = "Arab"; }

@{ Match = @("bn-IN", "as-IN", "bn", "bn-BD", "bpy-Beng"); Name = "Beng"; }

@{ Match = @("da-dk", "iu-Cans", "iu-Cans-CA"); Name = "Cans"; }

@{ Match = @("chr-Cher-US", "chr-Cher"); Name = "Cher"; }

@{ Match = @("hi-IN", "bh-Deva", "brx", "brx-Deva", "brx-IN", "hi", "ks-Deva", "mai", "mr", "mr-IN", "ne", "ne-IN", "ne-NP", "new-Deva", "pi-Deva", "sa", "sa-Deva", "sa-IN"); Name = "Deva"; }

@{ Match = @("am", "am-ET", "byn", "byn-ER", "byn-Ethi", "ti", "ti-ER", "ti-ET", "tig", "tig-ER", "tig-Ethi", "ve-Ethi", "wal", "wal-ET", "wal-Ethi"); Name = "Ethi"; }

@{ Match = @("gu", "gu-IN"); Name = "Gujr"; }

@{ Match = @("pa", "pa-IN", "pa-Guru"); Name = "Guru"; }

@{ Match = @("zh-CN", "cmn-Hans", "gan-Hans", "hak-Hans", "wuu-Hans", "yue-Hans", "zh-gan-Hans", "zh-hak-Hans", "zh-Hans", "zh-SG", "zh-wuu-Hans", "zh-yue-Hans"); Name = "Hans"; }

@{ Match = @("zh-TW", "cmn-Hant", "hak-Hant", "lzh-Hant", "zh-hak-Hant", "zh-Hant", "zh-HK", "zh-lzh-Hant", "zh-MO", "zh-yue-Hant"); Name = "Hant"; }

@{ Match = @("he", "he-IL", "yi"); Name = "Hebr"; }

@{ Match = @("ja", "ja-JP"); Name = "Jpan"; }

@{ Match = @("km", "km-KH"); Name = "Khmr"; }

@{ Match = @("kn", "kn-IN"); Name = "Knda"; }

@{ Match = @("ko", "ko-KR"); Name = "Kore"; }

@{ Match = @("de-de", "lo", "lo-LA"); Name = "Laoo"; }

@{ Match = @("ml", "ml-IN"); Name = "Mlym"; }

@{ Match = @("or", "or-IN"); Name = "Orya"; }

@{ Match = @("si", "si-LK"); Name = "Sinh"; }

@{ Match = @("tr-tr", "arc-Syrc", "syr", "syr-SY", "syr-Syrc"); Name = "Syrc"; }

@{ Match = @("ta", "ta-IN", "ta-LK", "ta-MY", "ta-SG"); Name = "Taml"; }

@{ Match = @("te", "te-IN"); Name = "Telu"; }

@{ Match = @("th", "th-TH"); Name = "Thai"; }

)

ForEach ($item in $Fonts) {

if (($item.Match) -Contains $Lang) {

return $item.Name

}

}

return "Not\_matched"

}

Function Match\_Other\_Region\_Specific\_Requirements

{

param( $Lang )

$RegionSpecific = @(

@{ Match = @("zh-TW"); Name = "Taiwan"; }

)

ForEach ($item in $RegionSpecific) {

if (($item.Match) -Contains $Lang) {

return $item.Name

}

}

return "Skip\_specific\_packages"

}

Function Extract\_Process

{

param( $Package, $Name, $NewSaveTo )

$NewSaveTo = "$($SaveTo)\$($NewSaveTo)\Language\$($Act)\$($NewLang)"

New-Item -Path $NewSaveTo -ItemType Directory -ErrorAction SilentlyContinue | Out-Null

if ($ISO -eq "Auto") {

Get-PSDrive -PSProvider FileSystem -ErrorAction SilentlyContinue | ForEach-Object {

ForEach ($item in $Package) {

$TempFilePath = Join-Path -Path $\_.Root -ChildPath $item -ErrorAction SilentlyContinue

if (Test-Path $TempFilePath -PathType Leaf) {

Write-host "`n Find: " -NoNewLine; Write-host $TempFilePath -ForegroundColor Green

Write-host " Copy to: " -NoNewLine; Write-host $NewSaveTo

Copy-Item -Path $TempFilePath -Destination $NewSaveTo -Force

}

}

}

} else {

ForEach ($item in $Package) {

$TempFilePath = Join-Path -Path $ISO -ChildPath $item -ErrorAction SilentlyContinue

Write-host "`n Find: " -NoNewline; Write-host $TempFilePath -ForegroundColor Green

if (Test-Path $TempFilePath -PathType Leaf) {

Write-host " Copy to: " -NoNewLine; Write-host $NewSaveTo

Copy-Item -Path $TempFilePath -Destination $NewSaveTo -Force

} else {

Write-host " Not found"

}

}

}

Write-host "`n Verify the language pack file"

ForEach ($item in $Package) {

$Path = "$($NewSaveTo)\$([IO.Path]::GetFileName($item))"

if (Test-Path $Path -PathType Leaf) {

Write-host " Discover: " -NoNewLine; Write-host $Path -ForegroundColor Green

} else {

Write-host " Not found: " -NoNewLine; Write-host $Path -ForegroundColor Red

}

}

}

$AdvLanguage = @(

@{

Path = "Install\Install"

Rule = @(

"LanguagesAndOptionalFeatures\Microsoft-Windows-LanguageFeatures-Fonts-{DiyLang}-Package~31bf3856ad364e35~amd64~~.cab"

"LanguagesAndOptionalFeatures\Microsoft-Windows-Server-Language-Pack\_x64\_{Lang}.cab"

"LanguagesAndOptionalFeatures\Microsoft-Windows-LanguageFeatures-Basic-{Lang}-Package~31bf3856ad364e35~amd64~~.cab"

"LanguagesAndOptionalFeatures\Microsoft-Windows-LanguageFeatures-Handwriting-{Lang}-Package~31bf3856ad364e35~amd64~~.cab"

"LanguagesAndOptionalFeatures\Microsoft-Windows-LanguageFeatures-OCR-{Lang}-Package~31bf3856ad364e35~amd64~~.cab"

"LanguagesAndOptionalFeatures\Microsoft-Windows-LanguageFeatures-Speech-{Lang}-Package~31bf3856ad364e35~amd64~~.cab"

"LanguagesAndOptionalFeatures\Microsoft-Windows-LanguageFeatures-TextToSpeech-{Lang}-Package~31bf3856ad364e35~amd64~~.cab"

"LanguagesAndOptionalFeatures\Microsoft-Windows-MSPaint-FoD-Package~31bf3856ad364e35~amd64~{Lang}~.cab"

"LanguagesAndOptionalFeatures\Microsoft-Windows-MSPaint-FoD-Package~31bf3856ad364e35~wow64~{Lang}~.cab"

"LanguagesAndOptionalFeatures\Microsoft-Windows-Notepad-FoD-Package~31bf3856ad364e35~amd64~{Lang}~.cab"

"LanguagesAndOptionalFeatures\Microsoft-Windows-Notepad-FoD-Package~31bf3856ad364e35~wow64~{Lang}~.cab"

"LanguagesAndOptionalFeatures\Microsoft-Windows-PowerShell-ISE-FOD-Package~31bf3856ad364e35~amd64~{Lang}~.cab"

"LanguagesAndOptionalFeatures\Microsoft-Windows-PowerShell-ISE-FOD-Package~31bf3856ad364e35~wow64~{Lang}~.cab"

"LanguagesAndOptionalFeatures\Microsoft-Windows-StepsRecorder-Package~31bf3856ad364e35~amd64~{Lang}~.cab"

"LanguagesAndOptionalFeatures\Microsoft-Windows-StepsRecorder-Package~31bf3856ad364e35~wow64~{Lang}~.cab"

"LanguagesAndOptionalFeatures\Microsoft-Windows-WordPad-FoD-Package~31bf3856ad364e35~amd64~{Lang}~.cab"

"LanguagesAndOptionalFeatures\Microsoft-Windows-WordPad-FoD-Package~31bf3856ad364e35~wow64~{Lang}~.cab"

)

}

@{

Path = "Install\WinRE"

Rule = @(

"Windows Preinstallation Environment\x64\WinPE\_OCs\WinPE-FontSupport-{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\lp.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-securestartup\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-atbroker\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-audiocore\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-audiodrivers\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-enhancedstorage\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-narrator\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-scripting\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-speech-tts\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-srh\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-srt\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-wds-tools\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-wmi\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-appxpackaging\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-storagewmi\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-wifi\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-rejuv\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-opcservices\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-hta\_{Lang}.cab"

)

}

@{

Path = "Boot\Boot"

Rule = @(

"Windows Preinstallation Environment\x64\WinPE\_OCs\WinPE-FontSupport-{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\lp.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\WinPE-Setup\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\WINPE-SETUP-Server\_{Lang}.CAB"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-securestartup\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-atbroker\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-audiocore\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-audiodrivers\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-enhancedstorage\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-narrator\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-scripting\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-speech-tts\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-srh\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-srt\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-wds-tools\_{Lang}.cab"

"Windows Preinstallation Environment\x64\WinPE\_OCs\{Lang}\winpe-wmi\_{Lang}.cab"

)

}

)

$NewFonts = Match\_Required\_Fonts -Lang $NewLang

$SpecificPackage = Match\_Other\_Region\_Specific\_Requirements -Lang $NewLang

Foreach ($item in $Expand) {

$Language = @()

Foreach ($itemList in $AdvLanguage) {

if ($itemList.Path -eq $item) {

Foreach ($PrintLang in $itemList.Rule) {

$Language += "$($PrintLang)".Replace("{Lang}", $NewLang).Replace("{DiyLang}", $NewFonts).Replace("{Specific}", $SpecificPackage)

}

Extract\_Process -NewSaveTo $itemList.Path -Package $Language -Name $item

}

}

}

}

ForEach ($item in $Extract\_language\_Pack) { Extract\_Language -Act $item.Act -NewLang $item.Tag -Expand $item.Scope }

### **[Customize the deployment image](#_Customize_the_deployment)**

#### [**Custom deployment image: Install.wim**](#_LANGUAGE_PACK:_INSTALL)

##### [**View Install.wim details**](#_3.1__)

Image name, image description, image size, architecture, version, index number, etc.;

$ViewFile = "D:\OS\_2022\Sources\Install.wim"

Get-WindowsImage -ImagePath $ViewFile | Foreach-Object { Get-WindowsImage -ImagePath $ViewFile -index $\_.ImageIndex }

CYCLIC OPERATION AREA, START,

##### **[Specify the path to mount install.wim](#_3.1__)**

New-Item -Path "D:\OS\_2022\_Custom\Install\Install\Mount" -ItemType directory -ea SilentlyContinue

##### [**Start mounting Install.wim**](#_Custom_deployment_image:)

Default index number: 1

Mount-WindowsImage -ImagePath "D:\OS\_2022\sources\install.wim" -Index "1" -Path "D:\OS\_2022\_Custom\Install\Install\Mount"

PROCESS FILES INSIDE THE INSTALL.WIM IMAGE, OPTIONALLY, START

###### **[Custom deployment image: WinRE.wim](#_3.1__)**

WARNING:

* WinRE.wim is a file within the Install.wim image;
* When Install.wim has multiple index numbers, only process any WinRE.wim;
* Synchronizing to all index numbers reduces the Install.wim volume, Learn "[How to bulk replace WinRE.wim in all index numbers in Install.wim](#_How_to_extract)".
  + 1. [**View WinRE.wim details**](#_3.1.2.1__)

Image name, image description, image size, architecture, version, index number, etc.;

$ViewFile = "D:\OS\_2022\_Custom\Install\Install\Mount\Windows\System32\Recovery\WinRE.wim"

Get-WindowsImage -ImagePath $ViewFile | Foreach-Object { Get-WindowsImage -ImagePath $ViewFile -index $\_.ImageIndex }

* + 1. [**Specify the path to mount WinRE.wim**](#_3.1.2.1__)

New-Item -Path "D:\OS\_2022\_Custom\Install\WinRE\Mount" -ItemType directory -ea SilentlyContinue

* + 1. [**Start mounting WinRE.wim**](#_3.1.2.1__)

Default index number: 1

$FileName = "D:\OS\_2022\_Custom\Install\Install\Mount\Windows\System32\Recovery\WinRE.wim"

Mount-WindowsImage -ImagePath $FileName -Index "1" -Path "D:\OS\_2022\_Custom\Install\WinRE\Mount"

* + 1. **Language pack**

Automatically install language packs: Get "Component: All installed packages in the image" and match them. After matching the corresponding names, install the local corresponding language pack files.

* + - 1. **Language pack: add**

Copy the code or view the source file: WinRE.Instl.lang.ps1 ( [Local](Expand/Install/WinRE/WinRE.Instl.lang.ps1), [Github](https://github.com/ilikeyi/solutions/blob/main/_Documents/Attachment/OS.2022/Expand/Install/WinRE/WinRE.Instl.lang.ps1) )

$Mount = "D:\OS\_2022\_Custom\Install\WinRE\Mount"

$Sources = "D:\OS\_2022\_Custom\Install\WinRE\Language\Add\zh-CN"

$Initl\_install\_Language\_Component = @()

Get-WindowsPackage -Path $Mount | ForEach-Object {

$Initl\_install\_Language\_Component += $\_.PackageName

}

Add-WindowsPackage -Path $Mount -PackagePath "$($Sources)\WinPE-FontSupport-zh-CN.cab"

$Language\_List = @(

@{ Match = "\*WinPE-LanguagePack-Package\*"; File = "lp.cab"; }

@{ Match = "\*SecureStartup\*"; File = "winpe-securestartup\_zh-CN.cab"; }

@{ Match = "\*ATBroker\*"; File = "winpe-atbroker\_zh-CN.cab"; }

@{ Match = "\*AudioCore\*"; File = "winpe-audiocore\_zh-CN.cab"; }

@{ Match = "\*AudioDrivers\*"; File = "winpe-audiodrivers\_zh-CN.cab"; }

@{ Match = "\*EnhancedStorage\*"; File = "winpe-enhancedstorage\_zh-CN.cab"; }

@{ Match = "\*Narrator\*"; File = "winpe-narrator\_zh-CN.cab"; }

@{ Match = "\*scripting\*"; File = "winpe-scripting\_zh-CN.cab"; }

@{ Match = "\*Speech-TTS\*"; File = "winpe-speech-tts\_zh-CN.cab"; }

@{ Match = "\*srh\*"; File = "winpe-srh\_zh-CN.cab"; }

@{ Match = "\*srt\*"; File = "winpe-srt\_zh-CN.cab"; }

@{ Match = "\*wds-tools\*"; File = "winpe-wds-tools\_zh-CN.cab"; }

@{ Match = "\*-WMI-Package\*"; File = "winpe-wmi\_zh-CN.cab"; }

@{ Match = "\*WinPE-AppxPackaging\*"; File = "winpe-appxpackaging\_zh-CN.cab"; }

@{ Match = "\*StorageWMI\*"; File = "winpe-storagewmi\_zh-CN.cab"; }

@{ Match = "\*WiFi\*"; File = "winpe-wifi\_zh-CN.cab"; }

@{ Match = "\*rejuv\*"; File = "winpe-rejuv\_zh-CN.cab"; }

@{ Match = "\*opcservices\*"; File = "winpe-opcservices\_zh-CN.cab"; }

@{ Match = "\*hta\*"; File = "winpe-hta\_zh-CN.cab"; }

)

ForEach ($Rule in $Language\_List) {

Write-host "`n Rule name: $($Rule.Match)" -ForegroundColor Yellow; Write-host " $('-' \* 80)"

ForEach ($Component in $Initl\_install\_Language\_Component) {

if ($Component -like "\*$($Rule.Match)\*") {

Write-host " Component name: " -NoNewline

Write-host $Component -ForegroundColor Green

Write-host " Language pack file: " -NoNewline

Write-host "$($Sources)\$($Rule.File)" -ForegroundColor Green

Write-Host " Installing ".PadRight(22) -NoNewline

try {

Add-WindowsPackage -Path $Mount -PackagePath "$($Sources)\$($Rule.File)" | Out-Null

Write-host "Finish" -ForegroundColor Green

} catch {

Write-host "Failed" -ForegroundColor Red

}

break

}

}

}

* + - 1. **Offline image language: change**
         1. **Change default language, regional settings, and other international settings**

Language Tag: zh-CN

Dism /Image:"D:\OS\_2022\_Custom\Install\WinRE\Mount" /Set-AllIntl:zh-CN

* + - * 1. **View available language settings**

Dism /Image:"D:\OS\_2022\_Custom\Install\WinRE\Mount" /Get-Intl

* + - 1. [**Language packs: Removed, optional**](#_执行安装命令后安装语言包到：WinRE)
* After you add languages, if you want to deploy to a non-English locale, you can save space by removing the English language component. When you remove a language, uninstall the language components in the reverse order in which you added them.
* After adding the Chinese, delete "English - United States" in reverse, the language tag: en-US, you need to extract the language pack in advance

Copy the code or view the source files: WinRE.Del.Specified.lang.Tag.ps1 ( [Local](Expand/Install/WinRE/WinRE.Del.Specified.lang.Tag.ps1), [Github](https://github.com/ilikeyi/solutions/blob/main/_Documents/Attachment/OS.2022/Expand/Install/WinRE/WinRE.Del.Specified.lang.Tag.ps1) )

$Lang = "en-US"

$Mount = "D:\OS\_2022\_Custom\Install\WinRE\Mount"

$Sources = "D:\OS\_2022\_Custom\Install\WinRE\Language\Del\en-US"

$Initl\_install\_Language\_Component = @()

Get-WindowsPackage -Path $Mount | ForEach-Object {

$Initl\_install\_Language\_Component += $\_.PackageName

}

$Language = @(

@{ Match = "\*windowsupdate\*"; File = "winpe-windowsupdate\_$($Lang).cab"; }

@{ Match = "\*appxdeployment\*"; File = "winpe-appxdeployment\_$($Lang).cab"; }

@{ Match = "\*hta\*"; File = "winpe-hta\_$($Lang).cab"; }

@{ Match = "\*opcservices\*"; File = "winpe-opcservices\_$($Lang).cab"; }

@{ Match = "\*rejuv\*"; File = "winpe-rejuv\_$($Lang).cab"; }

@{ Match = "\*WiFi\*"; File = "winpe-wifi\_$($Lang).cab"; }

@{ Match = "\*StorageWMI\*"; File = "winpe-storagewmi\_$($Lang).cab"; }

@{ Match = "\*WinPE-AppxPackaging\*"; File = "winpe-appxpackaging\_$($Lang).cab"; }

@{ Match = "\*-WMI-Package\*"; File = "winpe-wmi\_$($Lang).cab"; }

@{ Match = "\*wds-tools\*"; File = "winpe-wds-tools\_$($Lang).cab"; }

@{ Match = "\*srt\*"; File = "winpe-srt\_$($Lang).cab"; }

@{ Match = "\*srh\*"; File = "winpe-srh\_$($Lang).cab"; }

@{ Match = "\*Speech-TTS\*"; File = "winpe-speech-tts\_$($Lang).cab"; }

@{ Match = "\*scripting\*"; File = "winpe-scripting\_$($Lang).cab"; }

@{ Match = "\*Narrator\*"; File = "winpe-narrator\_$($Lang).cab"; }

@{ Match = "\*EnhancedStorage\*"; File = "winpe-enhancedstorage\_$($Lang).cab"; }

@{ Match = "\*AudioDrivers\*"; File = "winpe-audiodrivers\_$($Lang).cab"; }

@{ Match = "\*AudioCore\*"; File = "winpe-audiocore\_$($Lang).cab"; }

@{ Match = "\*ATBroker\*"; File = "winpe-atbroker\_$($Lang).cab"; }

@{ Match = "\*SecureStartup\*"; File = "winpe-securestartup\_$($Lang).cab"; }

@{ Match = "\*WinPE-LanguagePack-Package\*"; File = "lp.cab"; }

)

ForEach ($Rule in $Language) {

Write-host "`n Rule name: $($Rule.Match)" -ForegroundColor Yellow; Write-host " $('-' \* 80)"

ForEach ($Component in $Initl\_install\_Language\_Component) {

if ($Component -like "\*$($Rule.Match)\*$($Lang)\*") {

Write-host " Component name: " -NoNewline

Write-host $Component -ForegroundColor Green

Write-host " Language pack file: " -NoNewline

Write-host "$($Sources)\$($Rule.File)" -ForegroundColor Green

Write-Host " Deleting ".PadRight(22) -NoNewline

try {

Remove-WindowsPackage -Path $Mount -PackagePath "$($Sources)\$($Rule.File)" -ErrorAction SilentlyContinue | Out-Null

Write-host "Finish" -ForegroundColor Green

} catch {

Write-host "Failed" -ForegroundColor Red

Write-host " $($\_)" -ForegroundColor Red

}

break

}

}

}

$InitlClearLanguagePackage = @()

Get-WindowsPackage -Path $Mount | ForEach-Object {

if ($\_.PackageName -like "\*$($Lang)\*") { InitlClearLanguagePackage += $\_.PackageName }

}

if ($InitlClearLanguagePackage.count -gt 0) {

ForEach ($item in $InitlClearLanguagePackage) {

Write-Host "`n $($item)" -ForegroundColor Green

Write-Host " Deleting ".PadRight(22) -NoNewline

try {

Remove-AppxProvisionedPackage -Path $Mount -PackageName $item -ErrorAction SilentlyContinue | Out-Null

Write-host "Finish" -ForegroundColor Green

} catch {

Write-host "Failed" -ForegroundColor Red

Write-host " $($\_)" -ForegroundColor Red

}

}

}

* + - 1. **Components: All packages installed in the image**
         1. **View**

Get-WindowsPackage -Path "D:\OS\_2022\_Custom\Install\WinRE\Mount" | Out-GridView

* + - * 1. **Export to Csv**

$SaveTo = "D:\OS\_2022\_Custom\Install\WinRE\Report.$(Get-Date -Format "yyyyMMddHHmmss").csv"

Get-WindowsPackage -Path "D:\OS\_2022\_Custom\Install\WinRE\Mount" | Export-CSV -NoType -Path $SaveTo

Write-host $SaveTo -ForegroundColor Green

* + 1. [**Cumulative updates, optional**](#_3.1.2.1__)

To prepare the cumulative updates file available, change the example file name: KB\_WinRE.cab

* + - 1. **Add**

$KBPath = "D:\OS\_2022\_Custom\Install\WinRE\Update\KB\_WinRE.cab"

Add-WindowsPackage -Path "D:\OS\_2022\_Custom\Install\WinRE\Mount" -PackagePath $KBPath

* + - 1. **Delete**

$KBPath = "D:\OS\_2022\_Custom\Install\WinRE\Update\KB\_WinRE.cab"

Remove-WindowsPackage -Path "D:\OS\_2022\_Custom\Install\WinRE\Mount" -PackagePath $KBPath

* + - 1. **Solid update, optional**

It cannot be uninstalled after curing, which cleans the recovery image and resets the basis of any superseded components.

Dism /image:"D:\OS\_2022\_Custom\Install\WinRE\Mount" /cleanup-image /StartComponentCleanup /ResetBase

* + - * 1. [**Clean components after curing and updating, optional**](#_固化更新，可选项)

$Mount = "D:\OS\_2022\_Custom\Install\WinRE\Mount"

Get-WindowsPackage -Path $Mount -ErrorAction SilentlyContinue | ForEach-Object {

if ($\_.PackageState -eq "Superseded") {

Write-Host " $($\_.PackageName)" -ForegroundColor Green

Remove-WindowsPackage -Path $Mount -PackageName $\_.PackageName | Out-Null

}

}

* + 1. [**Driver, optional**](#_3.1.2.1__)
    2. [**Save image**](#_3.1.2.1__)

Save-WindowsImage -Path "D:\OS\_2022\_Custom\Install\WinRE\Mount"

* + 1. [**Unmount image**](#_3.1.2.1__)

Close any applications that may be accessing files in the image, including File Explorer.

Dismount-WindowsImage -Path "D:\OS\_2022\_Custom\Install\WinRE\Mount" -Discard

* + 1. [**After rebuilding WinRE.wim, the file size can be reduced**](#_3.1.2.1__)

Copy the code or view the source file: WinRE.Rebuild.ps1 ( [Local](Expand/Install/WinRE/WinRE.Rebuild.ps1), [Github](https://github.com/ilikeyi/solutions/blob/main/_Documents/Attachment/OS.2022/Expand/Install/WinRE/WinRE.Rebuild.ps1) )

$FileName = "D:\OS\_2022\_Custom\Install\Install\Mount\Windows\System32\Recovery\WinRE.wim"

Get-WindowsImage -ImagePath $Filename -ErrorAction SilentlyContinue | ForEach-Object {

Write-Host " Image name: " -NoNewline

Write-Host $\_.ImageName -ForegroundColor Yellow

Write-Host " The index number: " -NoNewline

Write-Host $\_.ImageIndex -ForegroundColor Yellow

Write-Host "`n Rebuilding ".PadRight(28) -NoNewline

Export-WindowsImage -SourceImagePath $Filename -SourceIndex $\_.ImageIndex -DestinationImagePath "$($FileName).New" -CompressionType max

Write-Host "Finish`n" -ForegroundColor Green

}

if (Test-Path "$($FileName).New" -PathType Leaf) {

Remove-Item -Path $Filename

Move-Item -Path "$($FileName).New" -Destination $Filename

Write-Host "Finish" -ForegroundColor Green

} else {

Write-host "Failed" -ForegroundColor Red

}

* + 1. [**Backup WinRE.wim**](#_3.1.2.1__)

Copy the code or view the source file: WinRE.Backup.ps1 ( [Local](Expand/Install/WinRE/WinRE.Backup.ps1), [Github](https://github.com/ilikeyi/solutions/blob/main/_Documents/Attachment/OS.2022/Expand/Install/WinRE/WinRE.Backup.ps1) )

$WimLibPath = "D:\OS\_2022\_Custom\Install\Install\Update\Winlib"

$FileName = "D:\OS\_2022\_Custom\Install\Install\Mount\Windows\System32\Recovery\WinRE.wim"

New-Item -Path $WimLibPath -ItemType Directory -ea SilentlyContinue

Copy-Item -Path $FileName -Destination $WimLibPath -Force

* + 1. [**Replace WinRE.wim within the Install.wim image**](#_3.1.2.1__)
* After each installation of Install.wim, use item "[Replace the WinRE.wim](#_Replace_the_WinRE.wim)";
* Learning "[After obtaining all the index numbers of Install.wim and replace the old WinRE.wim](#_After_getting_all)".

PROCESS FILES INSIDE THE INSTALL.WIM IMAGE, END

##### **Language pack**

Automatically install language packs: Get "Component: All installed packages in the image" and match them. After matching the corresponding names, install the local corresponding language pack files.

###### **Language pack: add**

Copy the code or view the source file: Install.Instl.lang.ps1 ( [Local](Expand/Install/Install.Instl.lang.ps1), [Github](https://github.com/ilikeyi/solutions/blob/main/_Documents/Attachment/OS.2022/Expand/Install/Install.Instl.lang.ps1) )

Function Language\_Install

{

param($Mount, $Sources, $Lang)

$Initl\_install\_Language\_Component = @()

if (Test-Path $Mount -PathType Container) {

Get-WindowsPackage -Path $Mount | ForEach-Object { $Initl\_install\_Language\_Component += $\_.PackageName }

} else {

Write-Host "Not mounted: $($Mount)"

return

}

$Script:Init\_Folder\_All\_File = @()

if (Test-Path "$($Sources)\$($Lang)" -PathType Container) {

Get-ChildItem -Path $Sources -Recurse -Include "\*.cab" -ErrorAction SilentlyContinue | ForEach-Object {

$Script:Init\_Folder\_All\_File += $\_.FullName

}

Write-host "`n Available language pack installation files"

if ($Script:Init\_Folder\_All\_File.Count -gt 0 ) {

ForEach ($item in $Script:Init\_Folder\_All\_File) {

Write-host " $($item)"

}

} else {

Write-host "There are no language pack files locally"

return

}

} else {

Write-Host "Path does not exist: $($Sources)\$($Lang)"

return

}

$Script:Init\_Folder\_All\_File\_Match\_Done = @()

$Script:Init\_Folder\_All\_File\_Exclude = @()

$Global:Search\_File\_Order = @(

@{

Name = "Fonts"

Description = "Fonts"

Rule = @(

@{ Match\_Name = "\*Fonts\*"; IsMatch = "No"; Capability = ""; }

)

}

@{

Name = "Basic"

Description = "Basic"

Rule = @(

@{ Match\_Name = "\*LanguageFeatures-Basic\*"; IsMatch = "Yes"; Capability = "Language.Basic~~~lb-LU~0.0.1.0"; }

@{ Match\_Name = "\*Server-LanguagePack-Package\*"; IsMatch = "Yes"; Capability = "Language.Basic~~~lb-LU~0.0.1.0"; }

)

}

@{

Name = "OCR"

Description = "Optical character recognition"

Rule = @(

@{ Match\_Name = "\*LanguageFeatures-OCR\*"; IsMatch = "Yes"; Capability = "Language.OCR~~~fr-FR~0.0.1.0"; }

)

}

@{

Name = "Handwriting"

Description = "Handwriting recognition"

Rule = @(

@{ Match\_Name = "\*LanguageFeatures-Handwriting\*"; IsMatch = "Yes"; Capability = "Language.Handwriting~~~fr-FR~0.0.1.0"; }

)

}

@{

Name = "TextToSpeech"

Description = "Text-to-speech"

Rule = @(

@{ Match\_Name = "\*LanguageFeatures-TextToSpeech\*"; IsMatch = "Yes"; Capability = "Language.TextToSpeech~~~fr-FR~0.0.1.0"; }

)

}

@{

Name = "Speech"

Description = "Speech recognition"

Rule = @(

@{ Match\_Name = "\*LanguageFeatures-Speech\*"; IsMatch = "Yes"; Capability = "Language.Speech~~~fr-FR~0.0.1.0"; }

)

}

@{

Name = "RegionSpecific"

Description = "Other region-specific requirements"

Rule = @(

@{ Match\_Name = "\*InternationalFeatures\*zh-TW\*"; IsMatch = "Yes"; Capability = ""; }

)

}

@{

Name = "Retail"

Description = "Retail demo experience"

Rule = @(

@{ Match\_Name = "\*RetailDemo\*"; IsMatch = "Yes"; Capability = ""; }

)

}

@{

Name = "Features\_On\_Demand"

Description = "Features on demand"

Rule = @(

@{ Match\_Name = "\*MSPaint\*amd64\*"; IsMatch = "Yes"; Capability = "Microsoft.Windows.MSPaint~~~~0.0.1.0"; }

@{ Match\_Name = "\*MSPaint\*wow64\*"; IsMatch = "Yes"; Capability = "Microsoft.Windows.MSPaint~~~~0.0.1.0"; }

@{ Match\_Name = "\*Notepad\*amd64\*"; IsMatch = "Yes"; Capability = "Microsoft.Windows.Notepad~~~~0.0.1.0"; }

@{ Match\_Name = "\*Notepad\*wow64\*"; IsMatch = "Yes"; Capability = "Microsoft.Windows.Notepad~~~~0.0.1.0"; }

@{ Match\_Name = "\*PowerShell-ISE-FOD-Package\*amd64\*"; IsMatch = "Yes"; Capability = "Microsoft.Windows.PowerShell.ISE~~~~0.0.1.0"; }

@{ Match\_Name = "\*PowerShell-ISE-FOD-Package\*wow64\*"; IsMatch = "Yes"; Capability = "Microsoft.Windows.PowerShell.ISE~~~~0.0.1.0"; }

@{ Match\_Name = "\*StepsRecorder\*amd64\*"; IsMatch = "Yes"; Capability = "App.StepsRecorder~~~~0.0.1.0"; }

@{ Match\_Name = "\*StepsRecorder\*wow64\*"; IsMatch = "Yes"; Capability = "App.StepsRecorder~~~~0.0.1.0"; }

@{ Match\_Name = "\*WordPad\*amd64\*"; IsMatch = "Yes"; Capability = "Microsoft.Windows.WordPad~~~~0.0.1.0"; }

@{ Match\_Name = "\*WordPad\*wow64\*"; IsMatch = "Yes"; Capability = "Microsoft.Windows.WordPad~~~~0.0.1.0"; }

)

}

)

ForEach ($item in $Global:Search\_File\_Order) {

New-Variable -Scope global -Name "Init\_File\_Type\_$($item.Name)" -Value @() -Force

}

ForEach ($WildCard in $Script:Init\_Folder\_All\_File) {

ForEach ($item in $Global:Search\_File\_Order) {

ForEach ($TTT in $item.Rule) {

if ($WildCard -like "\*$($TTT.Match\_Name)\*") {

Write-host "`n Fuzzy matching: " -NoNewline; Write-host $TTT.Match\_Name -ForegroundColor Green

Write-host " Language pack file: " -NoNewline; Write-host $WildCard -ForegroundColor Green

$OSDefaultUser = (Get-Variable -Scope global -Name "Init\_File\_Type\_$($item.Name)" -ErrorAction SilentlyContinue).Value

$TempSave = @{ Match\_Name = $TTT.Match\_Name; Capability = $TTT.Capability; FileName = $WildCard }

$new = $OSDefaultUser + $TempSave

if ($TTT.IsMatch -eq "Yes") {

ForEach ($Component in $Initl\_install\_Language\_Component) {

if ($Component -like "\*$($TTT.Match\_Name)\*") {

Write-host " Component name: " -NoNewline; Write-host $Component -ForegroundColor Green

New-Variable -Scope global -Name "Init\_File\_Type\_$($item.Name)" -Value $new -Force

$Script:Init\_Folder\_All\_File\_Match\_Done += $WildCard

break

}

}

} else {

Write-host " Do not match, install directly" -ForegroundColor Yellow

New-Variable -Scope global -Name "Init\_File\_Type\_$($item.Name)" -Value $new -Force

$Script:Init\_Folder\_All\_File\_Match\_Done += $WildCard

}

}

}

}

}

Write-host "`n Grouping is complete, pending installation" -ForegroundColor Yellow

Write-host " $('-' \* 80)"

ForEach ($WildCard in $Global:Search\_File\_Order) {

$OSDefaultUser = (Get-Variable -Scope global -Name "Init\_File\_Type\_$($WildCard.Name)" -ErrorAction SilentlyContinue).Value

Write-host "`n $($WildCard.Description) ( $($OSDefaultUser.Count) item )"

if ($OSDefaultUser.Count -gt 0) {

ForEach ($item in $OSDefaultUser) {

Write-host " $($item.FileName)" -ForegroundColor Green

}

} else {

Write-host " Not available" -ForegroundColor Red

}

}

Write-host "`n Not matched, no longer installed" -ForegroundColor Yellow

Write-host " $('-' \* 80)"

ForEach ($item in $Script:Init\_Folder\_All\_File) {

if ($Script:Init\_Folder\_All\_File\_Match\_Done -notcontains $item) {

$Script:Init\_Folder\_All\_File\_Exclude += $item

Write-host " $($item)" -ForegroundColor Red

}

}

Write-host "`n Install" -ForegroundColor Yellow

Write-host " $('-' \* 80)"

ForEach ($WildCard in $Global:Search\_File\_Order) {

$OSDefaultUser = (Get-Variable -Scope global -Name "Init\_File\_Type\_$($WildCard.Name)" -ErrorAction SilentlyContinue).Value

Write-host "`n $($WildCard.Description) ( $($OSDefaultUser.Count) item )"; Write-host " $('-' \* 80)"

if ($OSDefaultUser.Count -gt 0) {

ForEach ($item in $OSDefaultUser) {

Write-host " Language pack file: " -NoNewline; Write-host $item.FileName -ForegroundColor Green

Write-Host " Installing ".PadRight(22) -NoNewline

if (Test-Path $item.FileName -PathType Leaf) {

try {

Add-WindowsPackage -Path $Mount -PackagePath $item.FileName | Out-Null

Write-host "Finish`n" -ForegroundColor Green

} catch {

Write-host "Failed" -ForegroundColor Red

Write-host " $($\_)" -ForegroundColor Red

}

} else {

Write-host "Does not exist`n"

}

}

} else {

Write-host " Not available`n" -ForegroundColor Red

}

}

}

Language\_Install -Mount "D:\OS\_2022\_Custom\Install\Install\Mount" -Sources "D:\OS\_2022\_Custom\Install\Install\Language\Add" -Lang "zh-CN"

###### **Offline image language: change**

* tarting Windows 11, the [default System UI Language](https://learn.microsoft.com/en-us/windows/win32/intl/user-interface-language-management) set by DISM is left unaltered on all editions except for Home edition. For all [commercial editions](https://www.microsoft.com/windowsforbusiness/compare) the language chosen during the Out-of-Box Experience (OOBE) is set as the [System Preferred UI language](https://learn.microsoft.com/en-us/windows/win32/intl/user-interface-language-management) and Windows will be displayed in this language and for Home edition the language chosen at OOBE will continue to be the default System UI Language.
* As of Windows 10, version 2004, if an .appx-based Language Experience Pack (LXP) backed language is passed as an argument then the language will be set as the System Preferred UI language and its parent language will be set as the Default System UI language. In prior versions only .cab based language packs were supported.
  + 1. **Change default language, regional settings, and other international settings**

Language Tag: zh-CN

Dism /Image:"D:\OS\_2022\_Custom\Install\Install\Mount" /Set-AllIntl:zh-CN

* + 1. **View available language settings**

Dism /Image:"D:\OS\_2022\_Custom\Install\Install\Mount" /Get-Intl

###### [**Language packs: Removed, optional**](#_执行安装命令后安装语言包到：WinRE)

* After you add languages, if you want to deploy to a non-English locale, you can save space by removing the English language component. When you remove a language, uninstall the language components in the reverse order in which you added them.
* After adding the Chinese, delete "English - United States" in reverse, the language tag: en-US, you need to extract the language pack in advance

Copy the code or view the source files: Install.Del.Specified.lang.Tag.ps1 ( [Local](Expand/Install/Install.Del.Specified.lang.Tag.ps1), [Github](https://github.com/ilikeyi/solutions/blob/main/_Documents/Attachment/OS.2022/Expand/Install/Install/WinRE.Del.Specified.lang.Tag.ps1) )

$Lang = "en-US"

$Mount = "D:\OS\_2022\_Custom\Install\Install\Mount"

$Sources = "D:\OS\_2022\_Custom\Install\Install\Language\Del\en-US"

$Initl\_install\_Language\_Component = @()

Get-WindowsPackage -Path $Mount | ForEach-Object {

$Initl\_install\_Language\_Component += $\_.PackageName

}

$Language = @(

@{ Match = "\*WordPad\*wow64\*"; File = "Microsoft-Windows-WordPad-FoD-Package~31bf3856ad364e35~wow64~$($Lang)~.cab"; }

@{ Match = "\*WordPad\*amd64\*"; File = "Microsoft-Windows-WordPad-FoD-Package~31bf3856ad364e35~amd64~$($Lang)~.cab"; }

@{ Match = "\*WMIC\*FoD\*Package\*wow64\*"; File = "Microsoft-Windows-WMIC-FoD-Package~31bf3856ad364e35~wow64~$($Lang)~.cab"; }

@{ Match = "\*WMIC\*FoD\*Package\*amd64\*"; File = "Microsoft-Windows-WMIC-FoD-Package~31bf3856ad364e35~AMD64~$($Lang)~.cab"; }

@{ Match = "\*StepsRecorder\*wow64\*"; File = "Microsoft-Windows-StepsRecorder-Package~31bf3856ad364e35~wow64~$($Lang)~.cab"; }

@{ Match = "\*StepsRecorder\*amd64\*"; File = "Microsoft-Windows-StepsRecorder-Package~31bf3856ad364e35~amd64~$($Lang)~.cab"; }

@{ Match = "\*Printing\*PMCPPC\*amd64\*"; File = "Microsoft-Windows-Printing-PMCPPC-FoD-Package~31bf3856ad364e35~AMD64~$($Lang)~.cab"; }

@{ Match = "\*PowerShell\*wow64\*"; File = "Microsoft-Windows-PowerShell-ISE-FOD-Package~31bf3856ad364e35~wow64~$($Lang)~.cab"; }

@{ Match = "\*PowerShell\*amd64\*"; File = "Microsoft-Windows-PowerShell-ISE-FOD-Package~31bf3856ad364e35~amd64~$($Lang)~.cab"; }

@{ Match = "\*MediaPlayer\*wow64\*"; File = "Microsoft-Windows-MediaPlayer-Package-wow64-$($Lang).cab"; }

@{ Match = "\*MediaPlayer\*amd64\*"; File = "Microsoft-Windows-MediaPlayer-Package-AMD64-$($Lang).cab"; }

@{ Match = "\*Notepad\*wow64\*"; File = "Microsoft-Windows-Notepad-System-FoD-Package~31bf3856ad364e35~wow64~$($Lang)~.cab"; }

@{ Match = "\*Notepad\*amd64\*"; File = "Microsoft-Windows-Notepad-System-FoD-Package~31bf3856ad364e35~AMD64~$($Lang)~.cab"; }

@{ Match = "\*InternetExplorer\*"; File = "Microsoft-Windows-InternetExplorer-Optional-Package~31bf3856ad364e35~AMD64~$($Lang)~.cab"; }

@{ Match = "\*TextToSpeech\*"; File = "Microsoft-Windows-LanguageFeatures-TextToSpeech-$($Lang)-Package~31bf3856ad364e35~amd64~~.cab"; }

@{ Match = "\*LanguageFeatures-Speech\*"; File = "Microsoft-Windows-LanguageFeatures-Speech-$($Lang)-Package~31bf3856ad364e35~amd64~~.cab"; }

@{ Match = "\*OCR\*"; File = "Microsoft-Windows-LanguageFeatures-OCR-$($Lang)-Package~31bf3856ad364e35~amd64~~.cab"; }

@{ Match = "\*Handwriting\*"; File = "Microsoft-Windows-LanguageFeatures-Handwriting-$($Lang)-Package~31bf3856ad364e35~amd64~~.cab"; }

@{ Match = "\*LanguageFeatures-Basic\*"; File = "Microsoft-Windows-LanguageFeatures-Basic-$($Lang)-Package~31bf3856ad364e35~amd64~~.cab"; }

@{ Match = "\*Client-LanguagePack-Package\*"; File = "Microsoft-Windows-Client-Language-Pack\_x64\_$($Lang).cab"; }

)

ForEach ($Rule in $Language) {

Write-host "`n Rule name: $($Rule.Match)" -ForegroundColor Yellow; Write-host " $('-' \* 80)"

ForEach ($Component in $Initl\_install\_Language\_Component) {

if ($Component -like "\*$($Rule.Match)\*$($Lang)\*") {

Write-host " Component name: " -NoNewline

Write-host $Component -ForegroundColor Green

Write-host " Language pack file: " -NoNewline

Write-host "$($Sources)\$($Rule.File)" -ForegroundColor Green

Write-Host " Deleting ".PadRight(22) -NoNewline

try {

Remove-WindowsPackage -Path $Mount -PackagePath "$($Sources)\$($Rule.File)" -ErrorAction SilentlyContinue | Out-Null

Write-host "Finish" -ForegroundColor Green

} catch {

Write-host "Failed" -ForegroundColor Red

Write-host " $($\_)" -ForegroundColor Red

}

break

}

}

}

$InitlClearLanguagePackage = @()

Get-WindowsPackage -Path $Mount | ForEach-Object {

if ($\_.PackageName -like "\*$($Lang)\*") {

$InitlClearLanguagePackage += $\_.PackageName

}

}

if ($InitlClearLanguagePackage.count -gt 0) {

ForEach ($item in $InitlClearLanguagePackage) {

Write-Host "`n $($item)" -ForegroundColor Green

Write-Host " Deleting ".PadRight(22) -NoNewline

try {

Remove-AppxProvisionedPackage -Path $Mount -PackageName $item -ErrorAction SilentlyContinue | Out-Null

Write-host "Finish" -ForegroundColor Green

} catch {

Write-host "Failed" -ForegroundColor Red

Write-host " $($\_)" -ForegroundColor Red

}

}

}

* 1. **Components: All packages installed in the image**
     1. **View**

Get-WindowsPackage -Path "D:\OS\_2022\_Custom\Install\Install\Mount" | Out-GridView

* + 1. **Export to Csv**

$SaveTo = "D:\OS\_2022\_Custom\Install\Install\Report.$(Get-Date -Format "yyyyMMddHHmmss").csv"

Get-WindowsPackage -Path "D:\OS\_2022\_Custom\Install\Install\Mount" | Export-CSV -NoType -Path $SaveTo

Write-host $SaveTo -ForegroundColor Green

##### **[Cumulative updates, optional](#_3.1__)**

###### [**Download**](#_Updates,_optional)

Check the "[Windows Server 2022 Update History](https://support.microsoft.com/en-gb/topic/windows-server-2022-update-history-e1caa597-00c5-4ab9-9f3e-8212fe80b2ee) ", for example, install the cumulative update: KB5030216

Go to the download page: <https://www.catalog.update.microsoft.com/Search.aspx?q=Kb5030216> Or "[Direct download](https://catalog.s.download.windowsupdate.com/c/msdownload/update/software/secu/2023/09/windows10.0-kb5030216-x64_cbe587155f9818548b75f65d5cd41d341ed2fc61.msu)" (If you cannot download, please go to the download page), save to

D:\OS\_2022\_Custom\Install\Install\Update\windows10.0-kb5030216-x64\_cbe587155f9818548b75f65d5cd41d341ed2fc61.msu

###### [**Add**](#_Updates,_optional)

$KBPath = "D:\OS\_2022\_Custom\Install\Install\Update\windows10.0-kb5030216-x64\_cbe587155f9818548b75f65d5cd41d341ed2fc61.msu"

Add-WindowsPackage -Path "D:\OS\_2022\_Custom\Install\Install\Mount" -PackagePath $KBPath

###### **[Solid update, optional](#_Updates,_optional)**

It cannot be uninstalled after curing, which cleans the recovery image and resets the basis of any superseded components.

Dism /Image:"D:\OS\_2022\_Custom\Install\Install\Mount" /cleanup-image /StartComponentCleanup /ResetBase

* + 1. [**Clean up components after curing updates**](#_Solid_update,_optional)

Copy the code or view the source file: Install.Update.Curing.ps1 ( [Local](Expand/Install/Install.Update.Curing.ps1), [Github](https://github.com/ilikeyi/solutions/blob/main/_Documents/Attachment/OS.2022/Expand/Install/Install.Update.Curing.ps1) )

$Mount = "D:\OS\_2022\_Custom\Install\Install\Mount"

Get-WindowsPackage -Path $Mount -ErrorAction SilentlyContinue | ForEach-Object {

if ($\_.PackageState -eq "Superseded") {

Write-Host " $($\_.PackageName)" -ForegroundColor Green

Remove-WindowsPackage -Path $Mount -PackageName $\_.PackageName | Out-Null

}

}

##### [**Drive, optional**](#_3.1__)

##### **Add deployment engine, optional**

* Learn "Deployment Engine", if added to ISO installation media, can skip adding to mounted.
* After adding the deployment engine, continue at the current location.

##### [**Health**](#_3.1__)

Check whether there is any damage before saving. When the health status is abnormal, abort saving

Repair-WindowsImage -Path "D:\OS\_2022\_Custom\Install\Install\Mount" -ScanHealth

##### **[Replace the WinRE.wim](#_3.1__)**

WinRE.wim in all index numbers in Install.wim has been replaced in batches. Please skip this step.

$WinRE = "D:\OS\_2022\_Custom\Install\Install\Update\Winlib\WinRE.wim"

$CopyTo = "D:\OS\_2022\_Custom\Install\Install\Mount\Windows\System32\Recovery"

Copy-Item -Path $WinRE -Destination $CopyTo -Force

##### [**Save image**](#_3.1__)

Save-WindowsImage -Path "D:\OS\_2022\_Custom\Install\Install\Mount"

##### [**Unmount image**](#_3.1__)

Close any applications that may be accessing files in the image, including File Explorer.

Dismount-WindowsImage -Path "D:\OS\_2022\_Custom\Install\Install\Mount" -Discard

CYCLIC OPERATION AREA, END.

##### [**Replace WinRE.wim in all index numbers in Install.wim**](#_3.1__)

###### [**Get WimLib**](#_Replace_WinRE.wim_in)

After going to the official website of <https://wimlib.net>, select a different version: [arm64](https://wimlib.net/downloads/wimlib-1.14.3-windows-aarch64-bin.zip), [x64](https://wimlib.net/downloads/wimlib-1.14.3-windows-x86_64-bin.zip), [x86](https://wimlib.net/downloads/wimlib-1.14.3-windows-i686-bin.zip), and extract it to: D:Wimlib after downloading.

###### **[How to extract and update WinRE.wim in Install.wim](#_Replace_WinRE.wim_in)**

* + 1. [**Extract the WinRE.wim file from Install.wim**](#_How_to_extract_1)

Copy the code or view the source file: Install.WinRE.Extract.ps1 ( [Local](Code/Install/Install.WinRE.Extract.ps1), [Github](https://github.com/ilikeyi/solutions/blob/main/_Documents/Attachment/OS.2022/Code/Install/Install.WinRE.Extract.ps1) )

$Arguments = @(

"extract",

"D:\OS\_2022\sources\install.wim", "1",

"\Windows\System32\Recovery\Winre.wim",

"--dest-dir=""D:\OS\_2022\_Custom\Install\Install\Update\Winlib"""

)

New-Item -Path "D:\OS\_2022\_Custom\Install\Install\Update\Winlib" -ItemType Directory -ea SilentlyContinue

Start-Process -FilePath "d:\wimlib\wimlib-imagex.exe" -ArgumentList $Arguments -wait -nonewwindow

* + 1. **[After getting all index numbers of Install.wim and replacing the old WinRE.wim](#_How_to_extract_1)**

Copy the code or view the source file: Install.WinRE.Replace.wim.ps1 ( [Local](Expand/Install/Install.WinRE.Replace.wim.ps1), [Github](https://github.com/ilikeyi/solutions/blob/main/_Documents/Attachment/OS.2022/Expand/Install/Install.WinRE.Replace.wim.ps1) )

Get-WindowsImage -ImagePath "D:\OS\_2022\sources\install.wim" -ErrorAction SilentlyContinue | ForEach-Object {

Write-Host " Image name: " -NoNewline

Write-Host $\_.ImageName -ForegroundColor Yellow

Write-Host " The index number: " -NoNewline

Write-Host $\_.ImageIndex -ForegroundColor Yellow

Write-Host "`n Replacement "

$Arguments = @(

"update",

"D:\OS\_2022\sources\install.wim",

$\_.ImageIndex,

"--command=""add 'D:\OS\_2022\_Custom\Install\Install\Update\Winlib\WinRE.wim' '\Windows\System32\Recovery\WinRe.wim'"""

)

Start-Process -FilePath "d:\wimlib\wimlib-imagex.exe" -ArgumentList $Arguments -wait -nonewwindow

Write-Host " Finish`n" -ForegroundColor Green

}

##### [**Rebuilding Install.wim reduces file size**](#_Install_language_pack)

Copy the code or view the source file: Install.Rebuild.wim.ps1 ( [Local](Expand/Install/Install.Rebuild.wim.ps1), [Github](https://github.com/ilikeyi/solutions/blob/main/_Documents/Attachment/OS.2022/Expand/Install/Install.Rebuild.wim.ps1) )

$InstallWim = "D:\OS\_2022\sources\install.wim"

Get-WindowsImage -ImagePath $InstallWim -ErrorAction SilentlyContinue | ForEach-Object {

Write-Host " Image name: " -NoNewline

Write-Host $\_.ImageName -ForegroundColor Yellow

Write-Host " The index number: " -NoNewline

Write-Host $\_.ImageIndex -ForegroundColor Yellow

Write-Host "`n Rebuilding".PadRight(28) -NoNewline

Export-WindowsImage -SourceImagePath $InstallWim -SourceIndex $\_.ImageIndex -DestinationImagePath "$($InstallWim).New" -CompressionType max | Out-Null

Write-Host "Finish`n" -ForegroundColor Green

}

if (Test-Path "$($InstallWim).New" -PathType Leaf) {

Remove-Item -Path $InstallWim

Move-Item -Path "$($InstallWim).New" -Destination $InstallWim

Write-Host "Finish" -ForegroundColor Green

} else {

Write-host "Failed" -ForegroundColor Red

}

#### **[Custom deployment image: boot.wim](#_INSTALL_LANGUAGE_PACK)**

##### [**View Boot.wim details**](#_Install_language_pack_1)

Image name, image description, image size, architecture, version, index number, etc.;

$ViewFile = "D:\OS\_2022\Sources\Boot.wim"

Get-WindowsImage -ImagePath $ViewFile | Foreach-Object { Get-WindowsImage -ImagePath $ViewFile -index $\_.ImageIndex }

##### [**Specify the path to mount Boot.wim**](#_Install_language_pack_1)

New-Item -Path "D:\OS\_2022\_Custom\Boot\Boot\Mount" -ItemType directory -ea SilentlyContinue

##### [**Start mounting Boot.wim**](#_Install_language_pack_1)

Default index number: 2

Mount-WindowsImage -ImagePath "D:\OS\_2022\sources\boot.wim" -Index "2" -Path "D:\OS\_2022\_Custom\Boot\Boot\Mount"

##### **Language pack**

Automatically install language packs: Get "Component: All installed packages in the image" and match them. After matching the corresponding names, install the local corresponding language pack files.

###### **Language pack: add**

Copy the code or view the source file: Boot.Instl.lang.ps1 ( [Local](Expand/Boot/Boot.Instl.lang.ps1), [Github](https://github.com/ilikeyi/solutions/blob/main/_Documents/Attachment/OS.2022/Expand/Boot/Boot.Instl.lang.ps1) )

$Mount = "D:\OS\_2022\_Custom\Boot\Boot\Mount"

$Sources = "D:\OS\_2022\_Custom\Boot\Boot\Language\Add\zh-CN"

$Initl\_install\_Language\_Component = @()

Get-WindowsPackage -Path $Mount | ForEach-Object {

$Initl\_install\_Language\_Component += $\_.PackageName

}

Add-WindowsPackage -Path $Mount -PackagePath "$($Sources)\WinPE-FontSupport-zh-CN.cab"

$Language = @(

@{ Match = "\*WinPE\*Setup\*Server\*Package\*"; File = "WINPE-SETUP-Server\_zh-CN.CAB"; }

@{ Match = "\*WinPE\*Setup\*Package\*"; File = "WinPE-Setup\_zh-CN.cab"; }

@{ Match = "\*WinPE-LanguagePack-Package\*"; File = "lp.cab"; }

@{ Match = "\*SecureStartup\*"; File = "winpe-securestartup\_zh-CN.cab"; }

@{ Match = "\*ATBroker\*"; File = "winpe-atbroker\_zh-CN.cab"; }

@{ Match = "\*AudioCore\*"; File = "winpe-audiocore\_zh-CN.cab"; }

@{ Match = "\*AudioDrivers\*"; File = "winpe-audiodrivers\_zh-CN.cab"; }

@{ Match = "\*EnhancedStorage\*"; File = "winpe-enhancedstorage\_zh-CN.cab"; }

@{ Match = "\*Narrator\*"; File = "winpe-narrator\_zh-CN.cab"; }

@{ Match = "\*scripting\*"; File = "winpe-scripting\_zh-CN.cab"; }

@{ Match = "\*Speech-TTS\*"; File = "winpe-speech-tts\_zh-CN.cab"; }

@{ Match = "\*srh\*"; File = "winpe-srh\_zh-CN.cab"; }

@{ Match = "\*srt\*"; File = "winpe-srt\_zh-CN.cab"; }

@{ Match = "\*wds-tools\*"; File = "winpe-wds-tools\_zh-CN.cab"; }

@{ Match = "\*-WMI-Package\*"; File = "winpe-wmi\_zh-CN.cab"; }

)

ForEach ($Rule in $Language) {

Write-host "`n Rule name: $($Rule.Match)" -ForegroundColor Yellow; Write-host " $('-' \* 80)"

ForEach ($Component in $Initl\_install\_Language\_Component) {

if ($Component -like "\*$($Rule.Match)\*") {

Write-host " Component name: " -NoNewline

Write-host $Component -ForegroundColor Green

Write-host " Language pack file: " -NoNewline

Write-host "$($Sources)\$($Rule.File)" -ForegroundColor Green

Write-Host " Installing ".PadRight(22) -NoNewline

try {

Add-WindowsPackage -Path $Mount -PackagePath "$($Sources)\$($Rule.File)" | Out-Null

Write-host "Finish" -ForegroundColor Green

} catch {

Write-host "Failed" -ForegroundColor Red

}

break

}

}

}

###### **Offline image language: change**

* + 1. **Change default language, regional settings, and other international settings**

Language Tag: zh-CN

Dism /Image:"D:\OS\_2022\_Custom\Boot\Boot\Mount" /Set-AllIntl:zh-CN

* + 1. **View available language settings**

Dism /Image:"D:\OS\_2022\_Custom\Boot\Boot\Mount" /Get-Intl

###### [**Language packs: Removed, optional**](#_执行安装命令后安装语言包到：WinRE)

* After you add languages, if you want to deploy to a non-English locale, you can save space by removing the English language component. When you remove a language, uninstall the language components in the reverse order in which you added them.
* After adding the Chinese, delete "English - United States" in reverse, the language tag: en-US, you need to extract the language pack in advance

Copy the code or view the source files: Boot.Del.Specified.lang.Tag.ps1 ( [Local](Expand/Boot/Boot.Del.Specified.lang.Tag.ps1), [Github](https://github.com/ilikeyi/solutions/blob/main/_Documents/Attachment/OS.2022/Expand/Boot/Boot/Boot.Del.Specified.lang.Tag.ps1) )

$Lang = "en-US"

$Mount = "D:\OS\_2022\_Custom\Boot\Boot\Mount"

$Sources = "D:\OS\_2022\_Custom\Boot\Boot\Language\Del\en-US"

$Initl\_install\_Language\_Component = @()

Get-WindowsPackage -Path $Mount | ForEach-Object {

$Initl\_install\_Language\_Component += $\_.PackageName

}

$Language = @(

@{ Match = "\*WordPad\*wow64\*"; File = "Microsoft-Windows-WordPad-FoD-Package~31bf3856ad364e35~wow64~$($Lang)~.cab"; }

@{ Match = "\*WordPad\*amd64\*"; File = "Microsoft-Windows-WordPad-FoD-Package~31bf3856ad364e35~amd64~$($Lang)~.cab"; }

@{ Match = "\*WMIC\*FoD\*Package\*wow64\*"; File = "Microsoft-Windows-WMIC-FoD-Package~31bf3856ad364e35~wow64~$($Lang)~.cab"; }

@{ Match = "\*WMIC\*FoD\*Package\*amd64\*"; File = "Microsoft-Windows-WMIC-FoD-Package~31bf3856ad364e35~AMD64~$($Lang)~.cab"; }

@{ Match = "\*StepsRecorder\*wow64\*"; File = "Microsoft-Windows-StepsRecorder-Package~31bf3856ad364e35~wow64~$($Lang)~.cab"; }

@{ Match = "\*StepsRecorder\*amd64\*"; File = "Microsoft-Windows-StepsRecorder-Package~31bf3856ad364e35~amd64~$($Lang)~.cab"; }

@{ Match = "\*Printing\*PMCPPC\*amd64\*"; File = "Microsoft-Windows-Printing-PMCPPC-FoD-Package~31bf3856ad364e35~AMD64~$($Lang)~.cab"; }

@{ Match = "\*PowerShell\*wow64\*"; File = "Microsoft-Windows-PowerShell-ISE-FOD-Package~31bf3856ad364e35~wow64~$($Lang)~.cab"; }

@{ Match = "\*PowerShell\*amd64\*"; File = "Microsoft-Windows-PowerShell-ISE-FOD-Package~31bf3856ad364e35~amd64~$($Lang)~.cab"; }

@{ Match = "\*MediaPlayer\*wow64\*"; File = "Microsoft-Windows-MediaPlayer-Package-wow64-$($Lang).cab"; }

@{ Match = "\*MediaPlayer\*amd64\*"; File = "Microsoft-Windows-MediaPlayer-Package-AMD64-$($Lang).cab"; }

@{ Match = "\*Notepad\*wow64\*"; File = "Microsoft-Windows-Notepad-System-FoD-Package~31bf3856ad364e35~wow64~$($Lang)~.cab"; }

@{ Match = "\*Notepad\*amd64\*"; File = "Microsoft-Windows-Notepad-System-FoD-Package~31bf3856ad364e35~AMD64~$($Lang)~.cab"; }

@{ Match = "\*InternetExplorer\*"; File = "Microsoft-Windows-InternetExplorer-Optional-Package~31bf3856ad364e35~AMD64~$($Lang)~.cab"; }

@{ Match = "\*TextToSpeech\*"; File = "Microsoft-Windows-LanguageFeatures-TextToSpeech-$($Lang)-Package~31bf3856ad364e35~amd64~~.cab"; }

@{ Match = "\*LanguageFeatures-Speech\*"; File = "Microsoft-Windows-LanguageFeatures-Speech-$($Lang)-Package~31bf3856ad364e35~amd64~~.cab"; }

@{ Match = "\*OCR\*"; File = "Microsoft-Windows-LanguageFeatures-OCR-$($Lang)-Package~31bf3856ad364e35~amd64~~.cab"; }

@{ Match = "\*Handwriting\*"; File = "Microsoft-Windows-LanguageFeatures-Handwriting-$($Lang)-Package~31bf3856ad364e35~amd64~~.cab"; }

@{ Match = "\*LanguageFeatures-Basic\*"; File = "Microsoft-Windows-LanguageFeatures-Basic-$($Lang)-Package~31bf3856ad364e35~amd64~~.cab"; }

@{ Match = "\*Client-LanguagePack-Package\*"; File = "Microsoft-Windows-Client-Language-Pack\_x64\_$($Lang).cab"; }

@{ Match = "\*Fonts-Hans\*"; File = "Microsoft-Windows-LanguageFeatures-Fonts-Hans-Package~31bf3856ad364e35~amd64~~.cab"; }

)

ForEach ($Rule in $Language) {

Write-host "`n Rule name: $($Rule.Match)" -ForegroundColor Yellow; Write-host " $('-' \* 80)"

ForEach ($Component in $Initl\_install\_Language\_Component) {

if ($Component -like "\*$($Rule.Match)\*$($Lang)\*") {

Write-host " Component name: " -NoNewline

Write-host $Component -ForegroundColor Green

Write-host " Language pack file: " -NoNewline

Write-host "$($Sources)\$($Rule.File)" -ForegroundColor Green

Write-Host " Deleting ".PadRight(22) -NoNewline

try {

Remove-WindowsPackage -Path $Mount -PackagePath "$($Sources)\$($Rule.File)" -ErrorAction SilentlyContinue | Out-Null

Write-host "Finish" -ForegroundColor Green

} catch {

Write-host "Failed" -ForegroundColor Red

Write-host " $($\_)" -ForegroundColor Red

}

break

}

}

}

$InitlClearLanguagePackage = @()

Get-WindowsPackage -Path $Mount | ForEach-Object {

if ($\_.PackageName -like "\*$($Lang)\*") {

$InitlClearLanguagePackage += $\_.PackageName

}

}

if ($InitlClearLanguagePackage.count -gt 0) {

ForEach ($item in $InitlClearLanguagePackage) {

Write-Host "`n $($item)" -ForegroundColor Green

Write-Host " Deleting ".PadRight(22) -NoNewline

try {

Remove-AppxProvisionedPackage -Path $Mount -PackageName $item -ErrorAction SilentlyContinue | Out-Null

Write-host "Finish" -ForegroundColor Green

} catch {

Write-host "Failed" -ForegroundColor Red

Write-host " $($\_)" -ForegroundColor Red

}

}

}

###### **Components: All packages installed in the image**

* + 1. **View**

Get-WindowsPackage -Path "D:\OS\_2022\_Custom\Boot\Boot\Mount" | Out-GridView

* + 1. **Export to Csv**

$SaveTo = "D:\OS\_2022\_Custom\Boot\Boot\Report.$(Get-Date -Format "yyyyMMddHHmmss").csv"

Get-WindowsPackage -Path "D:\OS\_2022\_Custom\Boot\Boot\Mount" | Export-CSV -NoType -Path $SaveTo

Write-host $SaveTo -ForegroundColor Green

###### [**Language packs: sync to ISO installer**](#_Install_language_pack_1)

Copy-Item -Path "D:\OS\_2022\_Custom\Boot\Boot\Mount\sources\zh-CN" -Destination "D:\OS\_2022\sources\zh-CN" -Recurse -Force

###### **[Regenerate Lang.ini](#_Install_language_pack_1)**

After regeneration, you can adjust the "Installation Interface", the order when selecting "Language", open lang.ini, the default preferred value = 3, non-default value = 2.

* + 1. [**Regenerate the mounted directory lang.ini**](#_Regenerate_Lang.ini)

Re-generated Lang.ini file location: D:\OS\_2022\_Custom\Boot\Boot\Mount\Sources\lang.ini

Dism /image:"D:\OS\_2022\_Custom\Boot\Boot\Mount" /gen-langini /distribution:"D:\OS\_2022\_Custom\Boot\Boot\Mount"

* + 1. [**After regenerating lang.ini, synchronize to the installer**](#_Regenerate_Lang.ini)

Re-generated Lang.ini file location: D:\OS\_2022\Sources\lang.ini

Dism /image:"D:\OS\_2022\_Custom\Boot\Boot\Mount" /gen-langini /distribution:"D:\OS\_2022"

##### [**Cumulative updates, optional**](#_安装语言包到：boot.wim)

To prepare the cumulative updates file available, change the example file name: KB\_Boot.cab

* 1. **Add**

$KBPath = "D:\OS\_2022\_Custom\Boot\Boot\Update\KB\_Boot.cab"

Add-WindowsPackage -Path "D:\OS\_2022\_Custom\Boot\Boot\Mount" -PackagePath $KBPath

* 1. **Delete**

$KBPath = "D:\OS\_2022\_Custom\Boot\Boot\Update\KB\_Boot.cab"

Remove-WindowsPackage -Path "D:\OS\_2022\_Custom\Boot\Boot\Mount" -PackagePath $KBPath

* 1. **Solid update, optional**

It cannot be uninstalled after curing, which cleans the recovery image and resets the basis of any superseded components.

Dism /image:"D:\OS\_2022\_Custom\Boot\Boot\Mount" /cleanup-image /StartComponentCleanup /ResetBase

* + 1. [**Clean components after curing and updating, optional**](#_固化更新，可选项)

$Mount = "D:\OS\_2022\_Custom\Boot\Boot\Mount"

Get-WindowsPackage -Path $Mount -ErrorAction SilentlyContinue | ForEach-Object {

if ($\_.PackageState -eq "Superseded") {

Write-Host " $($\_.PackageName)" -ForegroundColor Green

Remove-WindowsPackage -Path $Mount -PackageName $\_.PackageName | Out-Null

}

}

##### [**Drive, optional**](#_Install_language_pack_1)

##### [**Save image**](#_Install_language_pack_1)

Save-WindowsImage -Path "D:\OS\_2022\_Custom\Boot\Boot\Mount"

##### [**Unmount image**](#_Install_language_pack_1)

Close any applications that may be accessing files in the image, including File Explorer.

Dismount-WindowsImage -Path "D:\OS\_2022\_Custom\Boot\Boot\Mount" -Discard

#### **Deployment engine**

* + - * Learn about "Automatically Adding Languages Installed in Windows Systems", learn: <https://github.com/ilikeyi/Multilingual>, how to download:
      * After entering the website, click "Code", "Download Compressed Package", and after the download is completed, you will get the main.zip compressed package file.
      * Go to the <https://github.com/ilikeyi/Multilingual/releases> download page, select the available version: 1.1.0.4, select the download source code format: zip, and get the Multilingual-1.1.0.4.zip compressed package file after the download is completed;
      * Unzip the downloaded main.zip or Multilingual-1.1.0.4.zip to: D:\Multilingual-1.1.0.4, and rename: D:\Multilingual
      * Learn "[Unattended Windows Setup Reference](https://learn.microsoft.com/en-us/windows-hardware/customize/desktop/unattend/)", Intervene in the installation process by leaving it unattended.

##### **Add method**

###### **Add to ISO installation media**

* + 1. **Unattended**
       1. **Add to: [ISO]:\Autounattend.xml**

Autounattend.xml interferes with the WinPE installer when booting an ISO installation.

Copy D:\Multilingual\Unattend\Mul.Unattend.xml to D:\OS\_2022\Autounattend.xml

Copy-Item "D:\Multilingual\Unattend\Mul.Unattend.xml" -Destination "D:\OS\_2022\Autounattend.xml" -Force

* + - 1. **Add to: [ISO]:\Sources\Unattend.xml**

When mounting or unpacking an ISO, after running the [ISO]:\Setup.exe installer, [ISO]:\Sources\Unattend.xml will intervene in the installation process.

Copy D:\Multilingual\Unattend\Mul.Unattend.xml to D:\OS\_2022\Sources\Unattend.xml

Copy-Item "D:\Multilingual\Unattend\Mul.Unattend.xml" -Destination "D:\OS\_2022\Sources\Unattend.xml" -Force

* + - 1. **Add to: [ISO]:\sources\$OEM$\$$\Panther\unattend.xml**

Copy it to the system disk during the installation process, copy to: {system disk}:\Windows\Panther\unattend.xml

* + - * 1. **Create $OEM$ path**

New-Item -Path "D:\OS\_2022\sources\`$OEM$\`$$\Panther" -ItemType Directory

* + - * 1. **Copy**

Copy D:\Multilingual\Unattend\Mul.Unattend.xml to D:\OS\_2022\Sources\$OEM$\Panther\Unattend.xml

Copy-Item "D:\Multilingual\Unattend\Mul.Unattend.xml" -Destination "D:\OS\_2022\sources\`$OEM$\`$$\Panther\Unattend.xml" -Force

* + 1. **Deployment engine: add**

Add "Automatically add installed languages for Windows systems" to D:\OS\_2022\sources\$OEM$\$1\Yi\Engine in the directory.

* + - 1. **Deployment Engine: Copy**

Copy D:\Multilingual\Engine to D:\OS\_2022\Sources\$OEM$\$1\Yi\Engine

Copy-Item "D:\Multilingual\Engine" -Destination "D:\OS\_2022\sources\`$OEM$\`$1\Yi\Engine" -Recurse -Force

* + - 1. **Deployment engine: custom deployment tags**

$Flag = @(

"Is\_Mark\_Sync" # Allow global search and synchronization of deployment tags

# Prerequisite deployment

# "Auto\_Update" # Allow automatic updates

# "Use\_UTF8" # Beta: Global language support using Unicode UTF-8

"Disable\_Network\_Location\_Wizard" # Network Location Wizard

"Disable\_Cleanup\_Appx\_Tasks" # Appx Cleanup and maintenance tasks

"Disable\_Cleanup\_On\_Demand\_Language" # Prevent cleanup of unused on-demand feature language packs

"Disable\_Cleanup\_Unsed\_Language" # Prevent cleaning of unused language packs

"Prerequisites\_Reboot" # Restart your computer

# Complete first deployment

# "Popup\_Engine" # Allow the deployment engine main interface to pop up for the first time

# "Allow\_First\_Pre\_Experience" # Allow first preview, as planned

"Reset\_Execution\_Policy" # Restore PowerShell execution policy: Restricted

"Clear\_Solutions" # Delete the entire solution

"Clear\_Engine" # Delete the deployment engine and keep the others

# "First\_Experience\_Reboot" # Restart your computer

)

ForEach ($item in $Flag) {

Write-host " $($item)" -ForegroundColor Green

New-Item -Path "D:\OS\_2022\sources\`$OEM$\`$1\Yi\Engine\Deploy\Allow" -ItemType Directory -ErrorAction SilentlyContinue | Out-Null

Out-File -FilePath "D:\OS\_2022\sources\`$OEM$\`$1\Yi\Engine\Deploy\Allow\$($item)" -Encoding utf8 -ErrorAction SilentlyContinue

}

###### **Add to mounted**

Through "[Customized deployment image: Install.wim](#_INSTALL_LANGUAGE_PACK)", execute "[Start mounting Install.wim](#_Start_mounting_Install.wim)" and mount to: D:\OS\_2022\_Custom\Install\Install\Mount

* + 1. **Unattended**

Copy D:\Multilingual\Unattend\Mul.Unattend.xml to D:\OS\_2022\_Custom\Install\Install\Mount\Panther\Unattend.xml

Copy-Item "D:\Multilingual\Unattend\Mul.Unattend.xml" -Destination "D:\OS\_2022\_Custom\Install\Install\Mount\Panther" -Force

* + 1. **Deployment engine: add**

Add "Automatically add languages installed on Windows systems" to the D:\OS\_2022\_Custom\Install\Install\Mount\Yi\Engine directory.

* + - 1. **Deployment Engine: Copy**

Copy D:\Multilingual\Engine to D:\OS\_2022\_Custom\Install\Install\Mount\Yi\Engine

Copy-Item "D:\Multilingual\Engine" -Destination "D:\OS\_2022\_Custom\Install\Install\Mount\Yi\Engine" -Recurse -Force

* + - 1. **Deployment engine: custom deployment tags**

$Flag = @(

"Is\_Mark\_Sync" # Allow global search and synchronization of deployment tags

# Prerequisite deployment

# "Auto\_Update" # Allow automatic updates

# "Use\_UTF8" # Beta: Global language support using Unicode UTF-8

"Disable\_Network\_Location\_Wizard" # Network Location Wizard

"Disable\_Cleanup\_Appx\_Tasks" # Appx Cleanup and maintenance tasks

"Disable\_Cleanup\_On\_Demand\_Language" # Prevent cleanup of unused on-demand feature language packs

"Disable\_Cleanup\_Unsed\_Language" # Prevent cleaning of unused language packs

"Prerequisites\_Reboot" # Restart your computer

# Complete first deployment

# "Popup\_Engine" # Allow the deployment engine main interface to pop up for the first time

# "Allow\_First\_Pre\_Experience" # Allow first preview, as planned

"Reset\_Execution\_Policy" # Restore PowerShell execution policy: Restricted

"Clear\_Solutions" # Delete the entire solution

"Clear\_Engine" # Delete the deployment engine and keep the others

# "First\_Experience\_Reboot" # Restart your computer

)

ForEach ($item in $Flag) {

Write-host " $($item)" -ForegroundColor Green

New-Item -Path "D:\OS\_2022\sources\`$OEM$\`$1\Yi\Engine\Deploy\Allow" -ItemType Directory -ErrorAction SilentlyContinue | Out-Null

Out-File -FilePath "D:\OS\_2022\sources\`$OEM$\`$1\Yi\Engine\Deploy\Allow\$($item)" -Encoding utf8 -ErrorAction SilentlyContinue

}

##### **Deployment Engine: Advanced**

###### **Deployment engine: adding process**

After copying the deployment engine, you can add deployment tags to intervene in the installation process.

###### **Unattended solution**

When the customization is unattended, please modify it simultaneously if the following files exist:

* D:\OS\_2022\Autounattend.xml
* D:\OS\_2022\Sources\Unattend.xml
* D:\OS\_2022\sources\$OEM$\$$\Panther\unattend.xml
* D:\OS\_2022\_Custom\Install\Install\Mount\Panther\Unattend.xml
  + 1. **Multilingual or monolingual**

In multi-language and monolingual, you can switch between each other. When replacing, please replace all the same ones in the file.

* + - 1. **Multi-language**

<UILanguage>%OSDUILanguage%</UILanguage>

<InputLocale>%OSDInputLocale%</InputLocale>

<SystemLocale>%OSDSystemLocale%</SystemLocale>

<UILanguage>%OSDUILanguage%</UILanguage>

<UILanguageFallback>%OSDUILanguageFallback%</UILanguageFallback>

<UserLocale>%OSDUserLocale%</UserLocale>

* + - 1. **Monolingual**

A single language needs to specify a language tag, for example, specify a language tag: zh-CN

<UILanguage>zh-CN</UILanguage>

<InputLocale>zh-CN</InputLocale>

<SystemLocale>zh-CN</SystemLocale>

<UILanguage>zh-CN</UILanguage>

<UILanguageFallback>zh-CN</UILanguageFallback>

<UserLocale>zh-CN</UserLocale>

* + 1. **User plan**

By default, the self-created user Administrator is used and logged in automatically. It can be switched by modifying the following configuration: self-created or customized user.

* + - 1. **Self-created user Administrator**

By default, the self-created user: Administrator is used and logged in automatically, inserted between <OOBE> and </OOBE>.

<UserAccounts>

<LocalAccounts>

<LocalAccount wcm:action="add">

<Password>

<Value></Value>

<PlainText>true</PlainText>

</Password>

<Description>Administrator</Description>

<DisplayName>Administrator</DisplayName>

<Group>Administrators</Group>

<Name>Administrator</Name>

</LocalAccount>

</LocalAccounts>

</UserAccounts>

<AutoLogon>

<Password>

<Value></Value>

<PlainText>true</PlainText>

</Password>

<Enabled>true</Enabled>

<Username>Administrator</Username>

</AutoLogon>

* + - 1. **Custom user**

After setting up a custom user and installing the system, in OOBE, you can choose settings such as local and online users.

* + - * 1. **Delete**

Username: Removed from start <UserAccounts> to </UserAccounts>

Autologin: Remove from start <AutoLogon> to </AutoLogon>

* + - * 1. **Replace**

From the beginning <OOBE> to </OOBE>

<OOBE>

<ProtectYourPC>3</ProtectYourPC>

<HideEULAPage>true</HideEULAPage>

<HideWirelessSetupInOOBE>true</HideWirelessSetupInOOBE>

</OOBE>

### [Generate](#_Customize_the_deployment) **[ISO](#_Customize_the_deployment)**

1. After downloading oscdimg, save it to: C:\Windows\System32 directory, save it in another path, or please enter the absolute location of OScdimg.exe;
2. Use the oscdimg command line to generate an ISO file and save it to: D:\WS2022.iso

Copy the code or view the source file: ISO.ps1 ( [Local](Expand/ISO.ps1), [Github](https://github.com/ilikeyi/solutions/blob/main/_Documents/Attachment/OS.2022/Expand/ISO.ps1) )

$ISO = "D:\Win2022"

$Volume = "Win2022"

$SaveTo = "D:\Win2022.iso"

$Arguments = @("-m", "-o", "-u2", "-udfver102", "-l""$($Volume)""", "-bootdata:2#p0,e,b""$($ISO)\boot\etfsboot.com""#pEF,e,b""$($ISO)\efi\microsoft\boot\efisys.bin""", $ISO, $SaveTo)

Start-Process -FilePath "OSCdimg.exe" -ArgumentList $Arguments -wait -nonewwindow

## **COMMON PROBLEM**

1. Clean all mounts to

Close any applications that may be accessing files in the image, including File Explorer.

Dismount-WindowsImage -Path "D:\OS\_2022\_Custom\Install\Install\Mount" -Discard

Dismount-WindowsImage -Path "D:\OS\_2022\_Custom\Install\WinRE\Mount" -Discard

Dismount-WindowsImage -Path "D:\OS\_2022\_Custom\Boot\Boot\Mount" -Discard

1. **Fix the problem of abnormal mounting**
2. **View mounted**

Get-WindowsImage -Mounted

1. **Delete the DISM mount record saved in the registry**

Remove-Item -Path "HKLM:\SOFTWARE\Microsoft\WIMMount\Mounted Images\\*" -Force -Recurse -ErrorAction SilentlyContinue | Out-Null

1. **Delete all resources associated with the corrupted mounted image**

Clear-WindowsCorruptMountPoint

Dism /cleanup-wim

1. Clean directories

Remove-Item "D:\OS\_2022\_Custom" -Force -Recurse

Remove-Item "D:\OS\_2022\Sources\`$OEM$" -Force -Recurse

Remove-Item -Path "D:\OS\_2022\Autounattend.xml" -Force

Remove-Item -Path "D:\OS\_2022\Sources\Unattend.xml" -Force

## **[Known issues](#_top)**

1. Add Microsoft-Windows-PowerShell-ISE-FOD-Package~31bf3856ad364e35~amd64~zh-CN~.cab to Windows Server 2022 Standard Core, Windows Server 2022 Datacenter Core will add Microsoft-Windows-PowerShell-ISE-FOD -Package~31bf3856ad364e35~amd64~zh-CN~10.0.20348.1, an error will be reported when deleting it, and the operation is not recommended for the time being.

## [**component: All packages installed in the image, unchanged**](#_top)

System installation package: en-us\_windows\_server\_2022\_x64\_dvd\_620d7eac.iso, different versions, component list:

| Sn | Type | Windows Server 2022 Standard (Desktop Experience), Windows Server 2022 Datacenter (Desktop Experience) | Windows Server 2022 Standard Core, Windows Server 2022 Datacenter Core |
| --- | --- | --- | --- |
|  |  | Downlevel-NLS-Sorting-Versions-Server-FoD-Package~31bf3856ad364e35~amd64~~10.0.20348.1 | Downlevel-NLS-Sorting-Versions-Server-FoD-Package~31bf3856ad364e35~amd64~~10.0.20348.1 |
|  |  | Downlevel-NLS-Sorting-Versions-Server-FoD-Package~31bf3856ad364e35~wow64~~10.0.20348.1 | Downlevel-NLS-Sorting-Versions-Server-FoD-Package~31bf3856ad364e35~wow64~~10.0.20348.1 |
|  |  | Microsoft-OneCore-DirectX-Database-FOD-Package~31bf3856ad364e35~amd64~~10.0.20348.1 | Microsoft-OneCore-DirectX-Database-FOD-Package~31bf3856ad364e35~amd64~~10.0.20348.1 |
|  |  | Microsoft-OneCore-RasSstp-Api-Package~31bf3856ad364e35~amd64~~10.0.20348.1 | Microsoft-OneCore-RasSstp-Api-Package~31bf3856ad364e35~amd64~~10.0.20348.1 |
|  |  | Microsoft-Windows-FodMetadata-Package~31bf3856ad364e35~amd64~~10.0.20348.1 | Microsoft-Windows-FodMetadata-Package~31bf3856ad364e35~amd64~~10.0.20348.1 |
|  |  | Microsoft-Windows-Foundation-Package~31bf3856ad364e35~amd64~~10.0.20348.1 | Microsoft-Windows-Foundation-Package~31bf3856ad364e35~amd64~~10.0.20348.1 |
|  |  | Microsoft-Windows-InternetExplorer-Optional-Package~31bf3856ad364e35~amd64~~11.0.20348.1 |  |
|  |  | Microsoft-Windows-InternetExplorer-Optional-Package~31bf3856ad364e35~amd64~~11.0.20348.75 |  |
|  |  | Microsoft-Windows-LanguageFeatures-Basic-en-us-Package~31bf3856ad364e35~amd64~~10.0.20348.1 | Microsoft-Windows-LanguageFeatures-Basic-en-us-Package~31bf3856ad364e35~amd64~~10.0.20348.1 |
|  |  | Microsoft-Windows-LanguageFeatures-Handwriting-en-us-Package~31bf3856ad364e35~amd64~~10.0.20348.1 |  |
|  |  | Microsoft-Windows-LanguageFeatures-OCR-en-us-Package~31bf3856ad364e35~amd64~~10.0.20348.1 |  |
|  |  | Microsoft-Windows-LanguageFeatures-Speech-en-us-Package~31bf3856ad364e35~amd64~~10.0.20348.1 | Microsoft-Windows-LanguageFeatures-Speech-en-us-Package~31bf3856ad364e35~amd64~~10.0.20348.1 |
|  |  | Microsoft-Windows-LanguageFeatures-TextToSpeech-en-us-Package~31bf3856ad364e35~amd64~~10.0.20348.1 | Microsoft-Windows-LanguageFeatures-TextToSpeech-en-us-Package~31bf3856ad364e35~amd64~~10.0.20348.1 |
|  |  | Microsoft-Windows-MediaPlayer-Package~31bf3856ad364e35~amd64~~10.0.20348.1 |  |
|  |  | Microsoft-Windows-MediaPlayer-Package~31bf3856ad364e35~amd64~~10.0.20348.169 |  |
|  |  | Microsoft-Windows-MSPaint-FoD-Package~31bf3856ad364e35~amd64~en-US~10.0.20348.1 | Microsoft-Windows-MSPaint-FoD-Package~31bf3856ad364e35~amd64~en-US~10.0.20348.1 |
|  |  | Microsoft-Windows-MSPaint-FoD-Package~31bf3856ad364e35~amd64~~10.0.20348.1 | |
|  |  | Microsoft-Windows-MSPaint-FoD-Package~31bf3856ad364e35~wow64~en-US~10.0.20348.1 | Microsoft-Windows-MSPaint-FoD-Package~31bf3856ad364e35~wow64~en-US~10.0.20348.1 |
|  |  | Microsoft-Windows-MSPaint-FoD-Package~31bf3856ad364e35~wow64~~10.0.20348.1 | |
|  |  | Microsoft-Windows-Networking-RemoteAccess-PowerShell-Base-Package~31bf3856ad364e35~amd64~en-US~10.0.20348.1 | Microsoft-Windows-Networking-RemoteAccess-PowerShell-Base-Package~31bf3856ad364e35~amd64~en-US~10.0.20348.1 |
|  |  | Microsoft-Windows-Networking-RemoteAccess-PowerShell-Base-Package~31bf3856ad364e35~amd64~~10.0.20348.1 | Microsoft-Windows-Networking-RemoteAccess-PowerShell-Base-Package~31bf3856ad364e35~amd64~~10.0.20348.1 |
|  |  | Microsoft-Windows-Networking-RemoteAccess-PowerShell-Base-Package~31bf3856ad364e35~amd64~~10.0.20348.143 | Microsoft-Windows-Networking-RemoteAccess-PowerShell-Base-Package~31bf3856ad364e35~amd64~~10.0.20348.143 |
|  |  | Microsoft-Windows-Notepad-FoD-Package~31bf3856ad364e35~amd64~~10.0.20348.1 | |
|  |  | Microsoft-Windows-Notepad-FoD-Package~31bf3856ad364e35~amd64~en-US~10.0.20348.1 | Microsoft-Windows-Notepad-FoD-Package~31bf3856ad364e35~amd64~en-US~10.0.20348.1 |
|  |  | Microsoft-Windows-Notepad-FoD-Package~31bf3856ad364e35~wow64~~10.0.20348.1 | |
|  |  | Microsoft-Windows-Notepad-FoD-Package~31bf3856ad364e35~wow64~en-US~10.0.20348.1 | Microsoft-Windows-Notepad-FoD-Package~31bf3856ad364e35~wow64~en-US~10.0.20348.1 |
|  |  | Microsoft-Windows-PowerShell-ISE-FOD-Package~31bf3856ad364e35~amd64~en-US~10.0.20348.1 |  |
|  |  | Microsoft-Windows-PowerShell-ISE-FOD-Package~31bf3856ad364e35~amd64~~10.0.20348.1 |  |
|  |  | Microsoft-Windows-PowerShell-ISE-FOD-Package~31bf3856ad364e35~wow64~en-US~10.0.20348.1 |  |
|  |  | Microsoft-Windows-PowerShell-ISE-FOD-Package~31bf3856ad364e35~wow64~~10.0.20348.1 |  |
|  |  | Microsoft-Windows-Server-LanguagePack-Package~31bf3856ad364e35~amd64~en-US~10.0.20348.1 | Microsoft-Windows-Server-LanguagePack-Package~31bf3856ad364e35~amd64~en-US~10.0.20348.1 |
|  |  | Microsoft-Windows-Server-LanguagePack-Package~31bf3856ad364e35~amd64~en-US~10.0.20348.169 | Microsoft-Windows-Server-LanguagePack-Package~31bf3856ad364e35~amd64~en-US~10.0.20348.169 |
|  |  | Microsoft-Windows-ServerCore-Package~31bf3856ad364e35~amd64~~10.0.20348.1 | Microsoft-Windows-ServerCore-Package~31bf3856ad364e35~amd64~~10.0.20348.1 |
|  |  | Microsoft-Windows-StepsRecorder-Package~31bf3856ad364e35~amd64~en-US~10.0.20348.1 |  |
|  |  | Microsoft-Windows-StepsRecorder-Package~31bf3856ad364e35~amd64~~10.0.20348.1 |  |
|  |  | Microsoft-Windows-StepsRecorder-Package~31bf3856ad364e35~wow64~en-US~10.0.20348.1 |  |
|  |  | Microsoft-Windows-StepsRecorder-Package~31bf3856ad364e35~wow64~~10.0.20348.1 |  |
|  |  | Microsoft-Windows-TabletPCMath-Package~31bf3856ad364e35~amd64~~10.0.20348.1 |  |
|  |  | Microsoft-Windows-TabletPCMath-Package~31bf3856ad364e35~amd64~~10.0.20348.143 |  |
|  |  | Microsoft-Windows-UserExperience-Desktop-Package~31bf3856ad364e35~amd64~~10.0.20348.1 |  |
|  |  | Microsoft-Windows-WordPad-FoD-Package~31bf3856ad364e35~amd64~en-US~10.0.20348.1 | Microsoft-Windows-WordPad-FoD-Package~31bf3856ad364e35~amd64~en-US~10.0.20348.1 |
|  |  | Microsoft-Windows-WordPad-FoD-Package~31bf3856ad364e35~amd64~~10.0.20348.1 | Microsoft-Windows-WordPad-FoD-Package~31bf3856ad364e35~amd64~~10.0.20348.1 |
|  |  | Microsoft-Windows-WordPad-FoD-Package~31bf3856ad364e35~wow64~en-US~10.0.20348.1 | Microsoft-Windows-WordPad-FoD-Package~31bf3856ad364e35~wow64~en-US~10.0.20348.1 |
|  |  | Microsoft-Windows-WordPad-FoD-Package~31bf3856ad364e35~wow64~~10.0.20348.1 | Microsoft-Windows-WordPad-FoD-Package~31bf3856ad364e35~wow64~~10.0.20348.1 |
|  |  | Microsoft-Windows-Xps-Xps-Viewer-Opt-Package~31bf3856ad364e35~amd64~~10.0.20348.1 |  |
|  |  | OpenSSH-Client-Package~31bf3856ad364e35~amd64~~10.0.20348.1 | OpenSSH-Client-Package~31bf3856ad364e35~amd64~~10.0.20348.1 |
|  |  | Package\_for\_DotNetRollup~31bf3856ad364e35~amd64~~10.0.4400. | Package\_for\_DotNetRollup~31bf3856ad364e35~amd64~~10.0.4400.1 |
|  |  | Package\_for\_RollupFix~31bf3856ad364e35~amd64~~20348.169.1.7 | Package\_for\_RollupFix~31bf3856ad364e35~amd64~~20348.169.1.7 |
|  |  | Package\_for\_ServicingStack~31bf3856ad364e35~amd64~~20348.169.1.1 | Package\_for\_ServicingStack~31bf3856ad364e35~amd64~~20348.169.1.1 |

## [**component: All packages installed in the image, changes after addition**](#_top)

| Sn | Type | Windows Server 2022 Standard (Desktop Experience), Windows Server 2022 Datacenter (Desktop Experience) | Windows Server 2022 Standard Core, Windows Server 2022 Datacenter Core |
| --- | --- | --- | --- |
|  | Fonts | Microsoft-Windows-LanguageFeatures-Fonts-Hans-Package~31bf3856ad364e35~AMD64~~.cab | |
| Microsoft-Windows-LanguageFeatures-Fonts-Hans-Package~31bf3856ad364e35~amd64~~10.0.20348.1 | Microsoft-Windows-LanguageFeatures-Fonts-Hans-Package~31bf3856ad364e35~amd64~~10.0.20348.1 |
|  | Language pack | Microsoft-Windows-Server-Language-Pack\_x64\_zh-CN.cab | |
| Microsoft-Windows-Server-LanguagePack-Package~31bf3856ad364e35~amd64~zh-CN~10.0.20348.1 | Microsoft-Windows-Server-LanguagePack-Package~31bf3856ad364e35~amd64~zh-CN~10.0.20348.1 |
|  | Basic | Microsoft-Windows-LanguageFeatures-Basic-zh-CN-Package~31bf3856ad364e35~AMD64~~.cab | |
| Microsoft-Windows-LanguageFeatures-Basic-zh-cn-Package~31bf3856ad364e35~amd64~~10.0.20348.1 | Microsoft-Windows-LanguageFeatures-Basic-zh-cn-Package~31bf3856ad364e35~amd64~~10.0.20348.1 |
|  | Handwriting | Microsoft-Windows-LanguageFeatures-Handwriting-zh-CN-Package~31bf3856ad364e35~AMD64~~.cab | |
| Microsoft-Windows-LanguageFeatures-Handwriting-zh-cn-Package~31bf3856ad364e35~amd64~~10.0.20348.1 |  |
|  | OCR | Microsoft-Windows-LanguageFeatures-OCR-zh-CN-Package~31bf3856ad364e35~AMD64~~.cab | |
| Microsoft-Windows-LanguageFeatures-OCR-zh-cn-Package~31bf3856ad364e35~amd64~~10.0.20348.1 |  |
|  | Speech | Microsoft-Windows-LanguageFeatures-Speech-zh-CN-Package~31bf3856ad364e35~AMD64~~.cab | |
| Microsoft-Windows-LanguageFeatures-Speech-zh-cn-Package~31bf3856ad364e35~amd64~~10.0.20348.1 | Microsoft-Windows-LanguageFeatures-Speech-zh-cn-Package~31bf3856ad364e35~amd64~~10.0.20348.1 |
|  | Text to speech | Microsoft-Windows-LanguageFeatures-TextToSpeech-zh-CN-Package~31bf3856ad364e35~AMD64~~.cab | |
| Microsoft-Windows-LanguageFeatures-TextToSpeech-zh-cn-Package~31bf3856ad364e35~amd64~~10.0.20348.1 | Microsoft-Windows-LanguageFeatures-TextToSpeech-zh-cn-Package~31bf3856ad364e35~amd64~~10.0.20348.1 |
|  | Feature pack | Microsoft-Windows-MSPaint-FoD-Package~31bf3856ad364e35~amd64~zh-CN~.cab | |
| Microsoft-Windows-MSPaint-FoD-Package~31bf3856ad364e35~amd64~zh-CN~10.0.20348.1 | Microsoft-Windows-MSPaint-FoD-Package~31bf3856ad364e35~amd64~zh-CN~10.0.20348.1 |
|  | Feature pack | Microsoft-Windows-MSPaint-FoD-Package~31bf3856ad364e35~wow64~zh-CN~.cab | |
| Microsoft-Windows-MSPaint-FoD-Package~31bf3856ad364e35~wow64~zh-CN~10.0.20348.1 | Microsoft-Windows-MSPaint-FoD-Package~31bf3856ad364e35~wow64~zh-CN~10.0.20348.1 |
|  | Feature pack | Microsoft-Windows-Notepad-FoD-Package~31bf3856ad364e35~amd64~zh-CN~.cab | |
| Microsoft-Windows-Notepad-FoD-Package~31bf3856ad364e35~amd64~zh-CN~10.0.20348.1 | Microsoft-Windows-Notepad-FoD-Package~31bf3856ad364e35~amd64~zh-CN~10.0.20348.1 |
|  | Feature pack | Microsoft-Windows-Notepad-FoD-Package~31bf3856ad364e35~wow64~zh-CN~.cab | |
| Microsoft-Windows-Notepad-FoD-Package~31bf3856ad364e35~wow64~zh-CN~10.0.20348.1 | Microsoft-Windows-Notepad-FoD-Package~31bf3856ad364e35~wow64~zh-CN~10.0.20348.1 |
|  | Feature pack | Microsoft-Windows-PowerShell-ISE-FOD-Package~31bf3856ad364e35~amd64~zh-CN~.cab | |
| Microsoft-Windows-PowerShell-ISE-FOD-Package~31bf3856ad364e35~amd64~zh-CN~10.0.20348.1 |  |
|  | Feature pack | Microsoft-Windows-PowerShell-ISE-FOD-Package~31bf3856ad364e35~wow64~zh-CN~.cab | |
| Windows-PowerShell-ISE-FOD-Package~31bf3856ad364e35~wow64~zh-CN~10.0.20348.1 |  |
|  | On demand package | Microsoft-Windows-StepsRecorder-Package~31bf3856ad364e35~amd64~zh-CN~.cab | |
| Microsoft-Windows-StepsRecorder-Package~31bf3856ad364e35~amd64~zh-CN~10.0.20348.1 |  |
|  | On demand package | Microsoft-Windows-StepsRecorder-Package~31bf3856ad364e35~wow64~zh-CN~.cab | |
| Microsoft-Windows-StepsRecorder-Package~31bf3856ad364e35~wow64~zh-CN~10.0.20348.1 |  |
|  | Feature pack | Microsoft-Windows-WordPad-FoD-Package~31bf3856ad364e35~amd64~zh-CN~.cab | |
| Microsoft-Windows-WordPad-FoD-Package~31bf3856ad364e35~amd64~zh-CN~10.0.20348.1 | Microsoft-Windows-WordPad-FoD-Package~31bf3856ad364e35~amd64~zh-CN~10.0.20348.1 |
|  | Feature pack | Microsoft-Windows-WordPad-FoD-Package~31bf3856ad364e35~wow64~zh-CN~.cab | |
| Microsoft-Windows-WordPad-FoD-Package~31bf3856ad364e35~wow64~zh-CN~10.0.20348.1 | Microsoft-Windows-WordPad-FoD-Package~31bf3856ad364e35~wow64~zh-CN~10.0.20348.1 |