Yi’ Solutions

Microsoft Windows 11 23H2

封装教程：不同的系统版本，有着不同的封装方式，封装过程中包含：“语言包：添加、关联、删除”、“驱动：添加、删除”、“累积更新：添加、删除”、“InBox Apps：添加、更新、标记”等。

在这背后藏着很多的隐藏故事，想解开这些，你准备好开始这场封装之旅了吗？

版本记录：

1. Microsoft Windows 11 23H2，过时的，当前
2. [Microsoft Windows 11 24H2](https://github.com/ilikeyi/Solutions/tree/main/_Learn/Packaging.tutorial/OS.11/24H2)，过时的
3. [Microsoft Windows 11 25H2](https://github.com/ilikeyi/Solutions/tree/main/_Learn/Packaging.tutorial/OS.11/25H2)，最新

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## 封装

### 先决条件

#### 正在运行的系统

##### 使用 DISM 命令制作高版本镜像时

正在运行的操作系统是 Windows 10 或者低于 Windows 11 24H2 时，在某些情况下使用 DISM 命令在制作高版本镜像时，会引发一些未知的问题，例如：在 Windows 10 操作系统里运行 DISM 命令来处理 Windows Server 2025 脱机映像时，在封装过程中也许会收到报错信息：“此应用无法在你的电脑运行”，解决方法：

* 1. 升级正在运行的操作系统或重新安装到更高的版本（建议）；
  2. 升级或安装新版 ADK 或 PowerShell 版本（不建议）
     1. 可尝试升级到最新 PowerShell 7 以上的版本；
     2. 安装最新版 ADK 后并替换 DISM 命令后能解决 DISM 版本低的问题，但是：封装脚本主要使用的命令行是 PowerShell 命令行，所以不建议你使用以上方法，最佳的方法是：升级正在运行的操作系统或重新安装到更高的版本。

##### 磁盘分区

* 1. 挂载脱机映像到 REFS 磁盘分区后，执行部分 DISM 命令会出现异常，使用 NTFS 格式的磁盘分区不受此影响。
  2. ISO 解压后，所在的位置不受 REFS 分区影响。

##### 加速 Windows 操作系统的 N 种方法

在处理封装任务时，安装累积更新、安装驱动、安装 InBox Apps 里的应用时，会产生大量的临时文件，可用以下几种方法加速系统：

###### 关闭 Windows 安全中心

* 开启 Windows 安全中心会扫描文件、会占用大量的 CPU。
* 测试中：未关闭前耗时 1 小时 22 分，关闭后耗时 20 分钟。

如何关闭：

绿色为命令行，按住 Windows 键并按 R 键启动“运行”。

* + 1. 打开“Windows 安全中心”或运行：windowsdefender:
    2. 选择“病毒和威胁防护”或运行：windowsdefender://threat
    3. 找到“病毒和威胁防护设置”，点击“管理设置”或运行：windowsdefender://threatsettings，建议您关闭部分功能：
       1. 实时保护
       2. 云提供的保护
       3. 自动提交样本
       4. 篡改防护
    4. 未处于封装时，建议您开启 Windows 安全中心。

###### 关闭基于虚拟化的安全性

即便是关闭 Windows 安全中心后，基于虚拟化的安全性处于运行中，系统运行速度也会大打折扣，关闭后提度很明显。

* + 1. 运行后，重新启动计算机

dism /Online /Disable-Feature:microsoft-hyper-v-all /NoRestart

dism /Online /Disable-Feature:IsolatedUserMode /NoRestart

dism /Online /Disable-Feature:Microsoft-Hyper-V-Hypervisor /NoRestart

dism /Online /Disable-Feature:Microsoft-Hyper-V-Online /NoRestart

dism /Online /Disable-Feature:HypervisorPlatform /NoRestart

mountvol X: /s

cmd /c copy /y %WINDIR%\System32\SecConfig.efi X:\EFI\Microsoft\Boot\SecConfig.efi

bcdedit /create {0cb3b571-2f2e-4343-a879-d86a476d7215} /d "DebugTool" /application osloader

bcdedit /set {0cb3b571-2f2e-4343-a879-d86a476d7215} path "\EFI\Microsoft\Boot\SecConfig.efi"

bcdedit /set {bootmgr} bootsequence {0cb3b571-2f2e-4343-a879-d86a476d7215}

bcdedit /set {0cb3b571-2f2e-4343-a879-d86a476d7215} loadoptions DISABLE-LSA-ISO,DISABLE-VBS

bcdedit /set {0cb3b571-2f2e-4343-a879-d86a476d7215} device partition=X:

mountvol X: /d

bcdedit /set hypervisorlaunchtype off

* + 1. 查看状态

运行 Msinfo32，在系统摘要查看“基于虚拟化的安全”状态

##### ISO 工具

准备一款可编辑 ISO 文件的软件，例如：PowerISO、DAEMON Tools、ISO Workshop；

##### 命令行

* 1. 可选“Terminal”或“PowerShell ISE”，未安装“Terminal”，请前往 <https://github.com/microsoft/terminal/releases> 后下载；
  2. 以管理员身份打开“Terminal”或“PowerShell ISE”，设置 PowerShell 执行策略：绕过，PS 命令行：

Set-ExecutionPolicy -ExecutionPolicy Bypass -Force

* 1. 在本文中，绿色部分属于 PS 命令行，请复制后，粘贴到“Terminal”对话框，按回车键（Enter）后开始运行；
  2. 有 .ps1 时，点击文件右键，选择以 PowerShell 运行，或复制路径，粘贴到“Terminal ”或“PowerShell ISE”里运行，带冒号的路径，在命令行添加 & 字符，示例：& "D:\YiSolutions\\_Encapsulation\\_SIP.ps1"

#### 要求

##### 系统安装包

关键词：迭代、跨版本、大版本、累积更新、初始版本

* 1. 说明
     1. 每版本更新时请重新制作镜像，例如从 21H1 跨越到 22H2 时，应避免出现其它兼容性问题请勿在旧镜像基础上制作；
     2. 该条例已经在某些 OEM 厂商，通过各种形式向封装师明确传达了该法令，不允许直接从迭代版本里直接升级；
     3. 制作中请使用 “初始版本”、“开发者版”制作。微软官方文档里曾短暂的出现过在制作中必须使用初始版本，后来这句在官方文档里却被删除了；
     4. 安装语言包后，必须重新添加累积更新（可同一版本号），不添加累积更新会出现“乱码”、“界面闪退”等问题。
     5. 进化过程：Windows 11 23H2, Build 22631.2428 + ( KB5027397 + kb5035853 ) = OS Build 22631.3296
  2. 准备下载初始版本或开发者版本
     1. x64
        1. 文件名：[en-us\_windows\_11\_business\_editions\_version\_23h2\_x64\_dvd\_a9092734.iso](https://files.rg-adguard.net/file/4844bd9b-9676-c00e-76d5-31f9be8d968e)

文件列表：<https://files.rg-adguard.net/file/4844bd9b-9676-c00e-76d5-31f9be8d968e>

* + - 1. 文件名：[en-us\_windows\_11\_consumer\_editions\_version\_23h2\_x64\_dvd\_8ea907fb.iso](https://files.rg-adguard.net/file/fa33f04b-e9f3-0b7a-99e5-cd76085cb069)

文件列表：<https://files.rg-adguard.net/file/fa33f04b-e9f3-0b7a-99e5-cd76085cb069>

* + - 1. 文件名：[en-us\_windows\_11\_iot\_enterprise\_version\_23h2\_x64\_dvd\_fb37549c.iso](https://files.rg-adguard.net/file/97a5761d-6736-b102-af2b-488197780556)

文件列表：<https://files.rg-adguard.net/file/97a5761d-6736-b102-af2b-488197780556>

* + 1. arm64
       1. 文件名：[en-us\_windows\_11\_iot\_enterprise\_version\_23h2\_arm64\_dvd\_6cc52d75.iso](https://files.rg-adguard.net/file/f2f8c73e-3e4a-de14-e71e-ddae3bc0ef99)

文件列表：<https://files.rg-adguard.net/file/f2f8c73e-3e4a-de14-e71e-ddae3bc0ef99>

* 1. 示例下载 en-us\_windows\_11\_business\_editions\_version\_23h2\_x64\_dvd\_a9092734.iso 后，解压到：D:\en-us\_windows\_11\_business\_editions\_version\_23h2\_x64\_dvd\_a9092734

注意：解压到 D 盘前，你应该检查是否 ReFS 分区格式，如果是 ReFS 分区格式时：执行部分 DISM 命令将出现异常。解决方法：请使用 NTFS 格式的磁盘分区。

* 1. 解压完成后，将目录D:\en-us\_windows\_11\_business\_editions\_version\_23h2\_x64\_dvd\_a9092734 更改为 D:\OS\_11
  2. 所有脚本、所有路径，已默认设置为 D:\OS\_11 为映像来源。
  3. 安装配置
     1. 学习：[Windows 安装版配置和产品 ID 文件（EI.cfg 和 PID.txt）](https://learn.microsoft.com/en-us/windows-hardware/manufacture/desktop/windows-setup-edition-configuration-and-product-id-files--eicfg-and-pidtxt?view=windows-11)
     2. 已知问题
        1. 没有 Ei.cfg 时，ISO 引导安装，选择某些版本时会报错，提示：Windows 找不到 Microsoft 软件许可条款。请确保安装源有效。然后重新启动安装。
        2. 如何解决，添加 ei.cfg 到 D:\OS\_11\Sources 里，创建 ei.cfg：

@"

[Channel]

volume

[VL]

1

"@ | Out-File -FilePath "D:\OS\_11\sources\EI.CFG" -Encoding Ascii

##### 语言包

###### 学习

阅读时，请了解“蓝色”重要突出部分。

* + 1. [语言概述](https://learn.microsoft.com/zh-cn/windows-hardware/manufacture/desktop/languages-overview?view=windows-11)
    2. [将语言添加到 Windows 11 映像](https://learn.microsoft.com/en-us/azure/virtual-desktop/windows-11-language-packs)
    3. [语言和区域按需功能 (FOD)](https://learn.microsoft.com/zh-cn/windows-hardware/manufacture/desktop/features-on-demand-language-fod?view=windows-11)
       1. 字体
* 添加语言包时，触发了对应的区域时，需添加所需的字体功能，下载“[所有可用语言 FOD 的列表](https://download.microsoft.com/download/7/6/0/7600F9DC-C296-4CF8-B92A-2D85BAFBD5D2/Windows-10-1809-FOD-to-LP-Mapping-Table.xlsx)”了解更多。
* 在“语言包：提取”时，已加入自动识别功能，可了解函数：Function Match\_Required\_Fonts
  + - 1. 区域关联

区域关联是什么？

* 映像语言仅英文版时，添加zh-HK 语言包后，映像语言不会新增，应先安装 zh-TW 后，再安装zh-HK 即可获得对应的关联。

已知区域关联：

* + - * 1. 区域：ar-sa，可选关联区域：en-US，关联安装包：

Microsoft-Windows-LanguageFeatures-Basic-es-us-Package~31bf3856ad364e35~amd64~~.cab

Microsoft-Windows-LanguageFeatures-OCR-en-us-Package~31bf3856ad364e35~amd64~~.cab

* + - * 1. 区域：bg-bg，可选关联区域：en-US，关联安装包：

Microsoft-Windows-LanguageFeatures-Basic-es-us-Package~31bf3856ad364e35~amd64~~.cab

Microsoft-Windows-LanguageFeatures-OCR-en-us-Package~31bf3856ad364e35~amd64~~.cab

* + - * 1. 区域：da-dk，可选关联区域：en-US，关联安装包：

Microsoft-Windows-LanguageFeatures-Basic-es-us-Package~31bf3856ad364e35~amd64~~.cab

Microsoft-Windows-LanguageFeatures-OCR-en-us-Package~31bf3856ad364e35~amd64~~.cab

* + - * 1. 区域：el-gr，可选关联区域：en-US，关联安装包：

Microsoft-Windows-LanguageFeatures-Basic-es-us-Package~31bf3856ad364e35~amd64~~.cab

Microsoft-Windows-LanguageFeatures-OCR-en-us-Package~31bf3856ad364e35~amd64~~.cab

* + - * 1. 区域：fr-ca，可选关联区域：en-US、fr-fr，关联安装包：

Microsoft-Windows-LanguageFeatures-Basic-es-us-Package~31bf3856ad364e35~amd64~~.cab

Microsoft-Windows-LanguageFeatures-OCR-en-us-Package~31bf3856ad364e35~amd64~~.cab

Microsoft-Windows-LanguageFeatures-Basic-fr-fr-Package~31bf3856ad364e35~amd64~~.cab

Microsoft-Windows-LanguageFeatures-Handwriting-fi-fi-Package~31bf3856ad364e35~amd64~~.cab

* + - * 1. 区域：he-il，可选关联区域：en-US，关联安装包：

Microsoft-Windows-LanguageFeatures-Basic-es-us-Package~31bf3856ad364e35~amd64~~.cab

Microsoft-Windows-LanguageFeatures-OCR-en-us-Package~31bf3856ad364e35~amd64~~.cab

* + - * 1. 区域：ru-ru，可选关联区域：en-US，关联安装包：

Microsoft-Windows-LanguageFeatures-Basic-es-us-Package~31bf3856ad364e35~amd64~~.cab

Microsoft-Windows-LanguageFeatures-OCR-en-us-Package~31bf3856ad364e35~amd64~~.cab

* + - * 1. 区域：th-th，可选关联区域：en-US，关联安装包：

Microsoft-Windows-LanguageFeatures-Basic-es-us-Package~31bf3856ad364e35~amd64~~.cab

Microsoft-Windows-LanguageFeatures-OCR-en-us-Package~31bf3856ad364e35~amd64~~.cab

* + - * 1. 区域：uk-ua，可选关联区域：en-US，关联安装包：

Microsoft-Windows-LanguageFeatures-Basic-es-us-Package~31bf3856ad364e35~amd64~~.cab

Microsoft-Windows-LanguageFeatures-OCR-en-us-Package~31bf3856ad364e35~amd64~~.cab

* + - * 1. 区域：zh-TW，可选关联区域：zh-HK，关联安装包：

Microsoft-Windows-LanguageFeatures-Basic-zh-hk-Package~31bf3856ad364e35~amd64~~.cab

Microsoft-Windows-LanguageFeatures-Speech-zh-hk-Package~31bf3856ad364e35~amd64~~.cab

Microsoft-Windows-LanguageFeatures-TextToSpeech-zh-hk-Package~31bf3856ad364e35~amd64~~.cab

* + - 1. 其它区域特定的要求

触发已知区域时，需添加特定的“程序包”。

* + - * 1. 区域：zh-TW，程序包：Microsoft-Windows-InternationalFeatures-Taiwan-Package~31bf3856ad364e35~amd64~~.cab

说明：对台湾日期格式设置要求的补充支持。 将为位于台湾的客户提供包。

建议：仅在运送到台湾市场的设备上预安装。 未在设备上安装此功能会导致对使用台湾日历的任何 API 调用失败。

存在争议：

* 在测试中发现，微软官方原版 Windows 11 里并未发现映像里安装此程序包，但是在建议项里有已知问题，到底是遵循与微软官方原版一致，由封装师自由选择安装与否。

###### 语言包：下载

* + 1. x64:
       1. 文件名：<https://software-static.download.prss.microsoft.com/dbazure/988969d5-f34g-4e03-ac9d-1f9786c66749/22621.1.220506-1250.ni_release_amd64fre_CLIENT_LOF_PACKAGES_OEM.iso>

文件列表：<https://files.rg-adguard.net/file/4f7bf45f-9970-e758-44cf-876643f49709>

###### 语言包：修复

* + 1. 任选一个网站并打开：
       1. <https://uupdump.net>
       2. <https://uup.ee>
       3. <https://osdump.com>
    2. 打开后，搜索关键词：22631.2428，在搜索结果选择：Windows 11, version 23H2 (22631.2428) amd64
    3. 打开后，选择“全部文件”；
    4. 在“全部文件”页面里依次搜索绿色部分并下载：
       1. 适用于：Install.wim（ 1项 ）
          1. MediaPlayer
       2. 适用于：WinRE.wim，暂无
       3. 适用于：Boot.wim，暂无
    5. 下载所有文件后，拉动到页面下方，下载并运行“生成重命名脚本（Windows）”；
    6. 使用ISO 编辑软件，编辑 22621.1.220506-1250.ni\_release\_amd64fre\_CLIENT\_LOF\_PACKAGES\_OEM.iso，将下载的文件添加到 [ISO]:\LanguagesAndOptionalFeatures 目录里；

##### InBox Apps

* 1. 下载：<https://software-static.download.prss.microsoft.com/dbazure/888969d5-f34g-4e03-ac9d-1f9786c66749/22621.2501.231009-1937.ni_release_svc_prod3_amd64fre_InboxApps.iso>

文件列表：<https://files.rg-adguard.net/file/5e7beb23-960d-d328-24f3-ef6378cd139d>

* 1. 下载：<https://software-static.download.prss.microsoft.com/dbazure/988969d5-f34g-4e03-ac9d-1f9786c66749/22621.1.220506-1250.ni_release_amd64fre_InboxApps.iso>

文件列表：<https://files.rg-adguard.net/file/263fed3d-be1f-9307-0c30-259d1027b2bd>

下载完成后，提取：

* + 1. Microsoft.HEVCVideoExtension
       1. Microsoft.HEVCVideoExtension\_8wekyb3d8bbwe.arm64.appx
       2. Microsoft.HEVCVideoExtension\_8wekyb3d8bbwe.arm64.xml
       3. Microsoft.HEVCVideoExtension\_8wekyb3d8bbwe.x64.appx
       4. Microsoft.HEVCVideoExtension\_8wekyb3d8bbwe.x64.xml
    2. Microsoft.WindowsTerminal
       1. Microsoft.WindowsTerminal\_8wekyb3d8bbwe.msixbundle
       2. Microsoft.WindowsTerminal\_8wekyb3d8bbwe.xml

警告

* 22621.1778.230511-2102.ni\_release\_svc\_prod3\_amd64fre\_InboxApps.iso 文件里提供的 Microsoft.WindowsTerminal\_8wekyb3d8bbwe.msixbundle 安装版本号是：1.17.12191，安装此版本号后无法正常运行。
* Windows 11 23H2 22631.2428 初始版本里提供的版本号是：1.12.10983，安装此版本号可正常运行。
  1. 使用 ISO 编辑工具，编辑 22621.1778.230511-2102.ni\_release\_svc\_prod3\_amd64fre\_InboxApps.iso，将已提取文件添加到 [ISO]:\packages 目录里；

### 语言包：提取

#### 语言包：准备

挂载 22621.1.220506-1250.ni\_release\_amd64fre\_CLIENT\_LOF\_PACKAGES\_OEM.iso 或解压到任意位置；

#### 语言包：提取方案

##### 添加

* 1. 语言名称：简体中文 - 中国，区域：zh-CN，适用范围：Install.Wim，Boot.Wim，WinRE.Wim

##### 删除

* 1. 语言名称：英语 - 美国，区域：en-US，适用范围：Install.Wim，Boot.Wim，WinRE.Wim

#### 执行提取命令

* Auto = 自动搜索本地所有磁盘，默认；
  + - * 自定义路径，例如指定为 E 盘：$ISO = "E:\"
      * Extract.ps1
        + [\Expand\Extract.ps1](Expand/Extract.ps1)
        + <https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/23H2/Expand/Extract.ps1>
      * 复制代码

$ISO = "Auto"

$SaveTo = "D:\OS\_11\_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-Client-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-InternetExplorer-Optional-Package~31bf3856ad364e35~AMD64~{Lang}~.cab"

"LanguagesAndOptionalFeatures\Microsoft-Windows-Notepad-System-FoD-Package~31bf3856ad364e35~AMD64~{Lang}~.cab"

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

"LanguagesAndOptionalFeatures\Microsoft-Windows-MediaPlayer-Package-AMD64-{Lang}.cab"

"LanguagesAndOptionalFeatures\Microsoft-Windows-MediaPlayer-Package-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-Printing-PMCPPC-FoD-Package~31bf3856ad364e35~AMD64~{Lang}~.cab"

"LanguagesAndOptionalFeatures\Microsoft-Windows-StepsRecorder-Package~31bf3856ad364e35~AMD64~{Lang}~.cab"

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

"LanguagesAndOptionalFeatures\Microsoft-Windows-WMIC-FoD-Package~31bf3856ad364e35~AMD64~{Lang}~.cab"

"LanguagesAndOptionalFeatures\Microsoft-Windows-WMIC-FoD-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"

"LanguagesAndOptionalFeatures\Microsoft-Windows-InternationalFeatures-{Specific}-Package~31bf3856ad364e35~amd64~~.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-appxdeployment\_{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-windowsupdate\_{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-CLIENT\_{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 }

### 自定义封装

#### 自定义封装：Install.wim

##### 查看 Install.wim 详细信息

映像名称、映像描述、映像大小、架构、版本、索引号等；

$ViewFile = "D:\OS\_11\Sources\Install.wim"

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

循环操作区域，开始，

##### 指定挂载 Install 路径

New-Item -Path "D:\OS\_11\_Custom\Install\Install\Mount" -ItemType directory

##### 开始挂载 Install.wim

默认索引号：1

Mount-WindowsImage -ImagePath "D:\OS\_11\sources\install.wim" -Index "1" -Path "D:\OS\_11\_Custom\Install\Install\Mount"

处理 Install.wim 映像内的文件，可选项，开始，

###### 自定义封装：WinRE.wim

注意：

* WinRE.wim 属于 Install.wim 映像内的文件；
* Install.wim 有多个索引号时，仅处理任意一个 WinRE.wim 即可；
* 同步至所有索引号即可减少 Install.wim 体积，学习“[如何批量替换 Install.wim 里的所有索引号里的 WinRE.wim](#_如何批量替换_Install.wim_里的所有索引号里的)”。
  + 1. 查看 WinRE.wim 详细信息

映像名称、映像描述、映像大小、架构、版本、索引号等；

$ViewFile = "D:\OS\_11\_Custom\Install\Install\Mount\Windows\System32\Recovery\WinRE.wim"

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

* + 1. 指定挂载 WinRE.wim 路径

New-Item -Path "D:\OS\_11\_Custom\Install\WinRE\Mount" -ItemType directory

* + 1. 开始挂载 WinRE.wim

默认索引号：1

Mount-WindowsImage -ImagePath "D:\OS\_11\_Custom\Install\Install\Mount\Windows\System32\Recovery\WinRE.wim" -Index "1" -Path "D:\OS\_11\_Custom\Install\WinRE\Mount"

* + 1. 语言包
* 自动安装语言包：获取“组件：映像中已安装的所有包”后进行匹配，匹配到对应的名称后，再安装本地对应的语言包文件。
* 添加语言时，须对应不同的架构版本，未对应时，添加过程中报错等提示。
  + - 1. 语言包：添加
* WinRE.Instl.lang.ps1
  + [\Expand\Install\WinRE\WinRE.Instl.lang.ps1](Expand/Install/WinRE/WinRE.Instl.lang.ps1)
  + <https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/23H2/Expand/Install/WinRE/WinRE.Instl.lang.ps1>
* 复制代码

$Mount = "D:\OS\_11\_Custom\Install\WinRE\Mount"

$Sources = "D:\OS\_11\_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"; }

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

@{ Match = "\*appxdeployment\*"; File = "winpe-appxdeployment\_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. 脱机映像语言：更改
         1. 更改默认语言、区域设置和其他国际设置

区域：zh-CN

Dism /Image:"D:\OS\_11\_Custom\Install\WinRE\Mount" /Set-AllIntl:zh-CN

* + - * 1. 查看可用的语言设置

Dism /Image:"D:\OS\_11\_Custom\Install\WinRE\Mount" /Get-Intl

* + - 1. 组件：映像中已安装的所有包
         1. 查看

Get-WindowsPackage -Path "D:\OS\_11\_Custom\Install\WinRE\Mount" | Out-GridView

* + - * 1. 导出到 Csv

$SaveTo = "D:\OS\_11\_Custom\Install\WinRE\Report.Components.$(Get-Date -Format "yyyyMMddHHmmss").csv"

Get-WindowsPackage -Path "D:\OS\_11\_Custom\Install\WinRE\Mount" | Export-CSV -NoType -Path $SaveTo

Write-host $SaveTo -ForegroundColor Green

* + 1. 累积更新

准备可用的累积更新文件，请更改示例文件名：KB\_WinRE.cab

* + - 1. 添加

$KBPath = "D:\OS\_11\_Custom\Install\WinRE\Update\KB\_WinRE.cab"

Add-WindowsPackage -Path "D:\OS\_11\_Custom\Install\WinRE\Mount" -PackagePath $KBPath

* + - 1. 删除

$KBPath = "D:\OS\_11\_Custom\Install\WinRE\Update\KB\_WinRE.cab"

Remove-WindowsPackage -Path "D:\OS\_11\_Custom\Install\WinRE\Mount" -PackagePath $KBPath

* + - 1. 固化更新

固化后不可卸载，固化时将清理恢复映像并重置任何被取代的组件的基础。

Dism /image:"D:\OS\_11\_Custom\Install\WinRE\Mount" /cleanup-image /StartComponentCleanup /ResetBase

* + - * 1. 固化更新后清理组件

$Mount = "D:\OS\_11\_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. 驱动
    2. 保存映像：WinRE.wim

Save-WindowsImage -Path "D:\OS\_11\_Custom\Install\WinRE\Mount"

* + 1. 卸载映像：WinRE.wim

关闭所有可能正在访问映像中文件的应用程序，包括文件资源管理器。

Dismount-WindowsImage -Path "D:\OS\_11\_Custom\Install\WinRE\Mount" -Discard

* + 1. 重建 WinRE.wim 后，可缩小文件大小
* WinRE.Rebuild.ps1
  + [\Expand\Install\WinRE\WinRE.Rebuild.ps1](Expand/Install/WinRE/WinRE.Rebuild.ps1)
  + <https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/23H2/Expand/Install/WinRE/WinRE.Rebuild.ps1>
* 复制代码

$FileName = "D:\OS\_11\_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 Under reconstruction ".PadRight(28) -NoNewline

try {

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

Write-Host "Finish" -ForegroundColor Green

} catch {

Write-Host $\_ -ForegroundColor Yellow

Write-host $Failed -ForegroundColor Red

}

}

Write-Host "`n Rename: " -NoNewline -ForegroundColor Yellow

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. 备份 WinRE.wim
* WinRE.Backup.ps1
  + [\Expand\Install\WinRE\WinRE.Backup.ps1](Expand/Install/WinRE/WinRE.Backup.ps1)
  + <https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/23H2/Expand/Install/WinRE/WinRE.Backup.ps1>
* 复制代码

$WimLibPath = "D:\OS\_11\_Custom\Install\Install\Update\Winlib"

$FileName = "D:\OS\_11\_Custom\Install\Install\Mount\Windows\System32\Recovery\WinRE.wim"

New-Item -Path $WimLibPath -ItemType Directory

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

* + 1. 替换 Install.wim 映像内的 WinRE.wim
* 每次挂载 Install.wim 后“[替换 WinRE.wim](#_替换_WinRE.wim)”；
* 学习“[获取 Install.wim 所有索引号后并替换旧的 WinRE.wim](#_获取_Install.wim_所有索引号后并替换旧的)”。

处理 Install.wim 映像内的文件，结束。

##### 语言包

* 自动安装语言包：获取“组件：映像中已安装的所有包”后进行匹配，匹配到对应的名称后，再安装本地对应的语言包文件。
* 添加语言时，须对应不同的架构版本，未对应时，添加过程中报错等提示。

###### 语言包：添加

* Install.Instl.lang.ps1
  + [\Expand\Install\Install.Instl.lang.ps1](Expand/Install/Install.Instl.lang.ps1)
  + <https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/23H2/Expand/Install/Install.Instl.lang.ps1>
* 复制代码

$Mount = "D:\OS\_11\_Custom\Install\Install\Mount"

$Sources = "D:\OS\_11\_Custom\Install\Install\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)\Microsoft-Windows-LanguageFeatures-Fonts-Hans-Package~31bf3856ad364e35~amd64~~.cab"

$Language\_List = @(

@{ Match = "\*Client-LanguagePack-Package\*"; File = "Microsoft-Windows-Client-Language-Pack\_x64\_zh-CN.cab"; }

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

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

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

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

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

@{ Match = "\*InternetExplorer\*"; File = "Microsoft-Windows-InternetExplorer-Optional-Package~31bf3856ad364e35~AMD64~zh-CN~.cab"; }

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

@{ Match = "\*Notepad\*wow64\*"; File = "Microsoft-Windows-Notepad-System-FoD-Package~31bf3856ad364e35~wow64~zh-CN~.cab"; }

@{ Match = "\*MediaPlayer\*amd64\*"; File = "Microsoft-Windows-MediaPlayer-Package-AMD64-zh-CN.cab"; }

@{ Match = "\*MediaPlayer\*wow64\*"; File = "Microsoft-Windows-MediaPlayer-Package-wow64-zh-CN.cab"; }

@{ Match = "\*PowerShell\*amd64\*"; File = "Microsoft-Windows-PowerShell-ISE-FOD-Package~31bf3856ad364e35~amd64~zh-CN~.cab"; }

@{ Match = "\*PowerShell\*wow64\*"; File = "Microsoft-Windows-PowerShell-ISE-FOD-Package~31bf3856ad364e35~wow64~zh-CN~.cab"; }

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

@{ Match = "\*StepsRecorder\*amd64\*"; File = "Microsoft-Windows-StepsRecorder-Package~31bf3856ad364e35~amd64~zh-CN~.cab"; }

@{ Match = "\*StepsRecorder\*wow64\*"; File = "Microsoft-Windows-StepsRecorder-Package~31bf3856ad364e35~wow64~zh-CN~.cab"; }

@{ Match = "\*WMIC\*FoD\*Package\*amd64\*"; File = "Microsoft-Windows-WMIC-FoD-Package~31bf3856ad364e35~AMD64~zh-CN~.cab"; }

@{ Match = "\*WMIC\*FoD\*Package\*wow64\*"; File = "Microsoft-Windows-WMIC-FoD-Package~31bf3856ad364e35~wow64~zh-CN~.cab"; }

@{ Match = "\*WordPad\*amd64\*"; File = "Microsoft-Windows-WordPad-FoD-Package~31bf3856ad364e35~amd64~zh-CN~.cab"; }

@{ Match = "\*WordPad\*wow64\*"; File = "Microsoft-Windows-WordPad-FoD-Package~31bf3856ad364e35~wow64~zh-CN~.cab"; }

@{ Match = "\*Client\*LanguagePack\*zh-TW\*"; File = "Microsoft-Windows-InternationalFeatures-Taiwan-Package~31bf3856ad364e35~amd64~~.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

}

}

}

###### 脱机映像语言：更改

* 从 Windows 11 开始，DISM 设置的[默认系统 UI 语言](https://learn.microsoft.com/zh-cn/windows/win32/intl/user-interface-language-management)在所有版本中保持不变（家庭版除外）。 对于[所有商业版](https://www.microsoft.com/windowsforbusiness/compare)，在开箱即用体验 (OOBE) 期间选择的语言会设置为[系统首选 UI 语言](https://learn.microsoft.com/zh-cn/windows/win32/intl/user-interface-language-management)，Windows 将以此语言显示；对于家庭版，在 OOBE 期间选择的语言将继续用作默认系统 UI 语言。
* 从 Windows 10 版本 2004 开始，如果将基于 .appx 的语言体验包 (LXP) 支持的语言作为参数传递，则该语言将设置为系统首选 UI 语言，其父语言将设置为默认系统 UI 语言。 在以前的版本中，仅支持基于 .cab 的语言包。
  + 1. 更改默认语言、区域设置和其他国际设置

区域：zh-CN

Dism /Image:"D:\OS\_11\_Custom\Install\Install\Mount" /Set-AllIntl:"zh-CN"

* + 1. 查看可用的语言设置

Dism /Image:"D:\OS\_11\_Custom\Install\Install\Mount" /Get-Intl

###### 组件：映像中已安装的所有包

* + 1. 查看

Get-WindowsPackage -Path "D:\OS\_11\_Custom\Install\Install\Mount" | Out-GridView

* + 1. 导出到 Csv

$SaveTo = "D:\OS\_11\_Custom\Install\Install\Report.Components.$(Get-Date -Format "yyyyMMddHHmmss").csv"

Get-WindowsPackage -Path "D:\OS\_11\_Custom\Install\Install\Mount" | Export-CSV -NoType -Path $SaveTo

Write-host $SaveTo -ForegroundColor Green

##### InBox Apps

###### 学习

* + 1. [DISM 应用包（.appx 或 .appxbundle）服务命令行选项](https://learn.microsoft.com/zh-cn/windows-hardware/manufacture/desktop/dism-app-package--appx-or-appxbundle--servicing-command-line-options)

重要：

DISM /add-provisionedappxpackage从 Windows 10 版本 1803 开始，使用该选项时，可以预安装应用而无需将其固定到“开始”菜单 /region。预安装应用时，您可以选择将应用排除在 LayoutModification.xml 之外，这样应用将成功安装，而不会显示为“开始”菜单磁贴。如果未指定区域列表，则仅当将应用固定到“开始”布局时才会预配应用。

再次警告您，使用命令行添加必须添加参数：/Region

###### InBox Apps：预安装应用程序

* 编组缩写

• 群组 A: Education, Professional, ProfessionalEducation, ProfessionalWorkstation, Enterprise, IoTEnterprise, ServerRdsh, ServerStandard, ServerDatacenter

• 群组 B: EnterpriseN, EnterpriseGN, EnterpriseSN, ProfessionalN, EducationN, ProfessionalWorkstationN, ProfessionalEducationN

• 群组 C: Core, CoreN, CoreSingleLanguage

名称 产品 ID 编组

1. Microsoft.HEIFImageExtension 9PMMSR1CGPWG A, C
2. Microsoft.HEVCVideoExtension 9NMZLZ57R3T7 A, C
3. Microsoft.VP9VideoExtensions 9N4D0MSMP0PT A, C
4. Microsoft.WebpImageExtension 9PG2DK419DRG A, C
5. Microsoft.GamingApp 9MV0B5HZVK9Z A, C
6. Microsoft.ZuneMusic 9WZDNCRFJ3PT A, C
7. MicrosoftCorporationII.MicrosoftFamily 9PDJDJS743XF C
8. Microsoft.WebMediaExtensions 9N5TDP8VCMHS A, C
9. Microsoft.WindowsSoundRecorder 9WZDNCRFHWKN A, C
10. Microsoft.Xbox.TCUI 9NKNC0LD5NN6 A, C
11. Microsoft.ZuneVideo 9WZDNCRFJ3P2 A, C
12. Microsoft.XboxGamingOverlay 9NZKPSTSNW4P A, C
13. Microsoft.RawImageExtension 9NCTDW2W1BH8 A, C
14. Microsoft.UI.Xaml.2.3 A, B, C
15. Microsoft.UI.Xaml.2.4 A, B, C
16. Microsoft.UI.Xaml.2.7 A, B, C
17. Microsoft.UI.Xaml.2.8 A, B, C
18. Microsoft.NET.Native.Framework.2.2 A, B, C
19. Microsoft.NET.Native.Runtime.2.2 A, B, C
20. Microsoft.VCLibs.140.00 A, B, C
21. Microsoft.VCLibs.140.00.UWPDesktop A, B, C
22. Microsoft.SecHealthUI 9NK0JLZT7JD0 A, B, C
23. Microsoft.WindowsStore 9WZDNCRFJBMP A, B, C
24. Microsoft.Sticky.Notes 9NBLGGH4QGHW A, B, C
25. Microsoft.Paint 9PCFS5B6T72H A, B, C
26. Microsoft.PowerAutomateDesktop 9NFTCH6J7FHV A, B, C
27. Microsoft.ScreenSketch 9MZ95KL8MR0L A, B, C
28. Microsoft.WindowsNotepad 9MSMLRH6LZF3 A, B, C
29. Microsoft.WindowsTerminal 9N0DX20HK701 A, B, C
30. Clipchamp.Clipchamp 9P1J8S7CCWWT A, B, C
31. Microsoft.Solitaire.Collection 9WZDNCRFHWD2 A, B, C
32. Microsoft.WindowsAlarms 9WZDNCRFJ3PR A, B, C
33. Microsoft.WindowsFeedbackHub 9NBLGGH4R32N A, B, C
34. Microsoft.WindowsMaps 9WZDNCRDTBVB A, B, C
35. Microsoft.BingNews 9WZDNCRFHVFW A, B, C
36. Microsoft.DesktopAppInstaller 9NBLGGH4NNS1 A, B, C
37. Microsoft.WindowsCamera 9WZDNCRFJBBG A, B, C
38. Microsoft.Getstarted 9WZDNCRDTBJJ A, B, C
39. Microsoft.Cortana 9NFFX4SZZ23L A, B, C
40. Microsoft.BingWeather 9WZDNCRFJ3Q2 A, B, C
41. Microsoft.GetHelp 9PKDZBMV1H3T A, B, C
42. Microsoft.MicrosoftOfficeHub 9WZDNCRD29V9 A, B, C
43. Microsoft.People 9NBLGGH10PG8 A, B, C
44. Microsoft.StorePurchaseApp 9NBLGGH4LS1F A, B, C
45. Microsoft.Todos 9NBLGGH5R558 A, B, C
46. Microsoft.Windows.Photos 9WZDNCRFJBH4 A, B, C
47. Microsoft.WindowsCalculator 9WZDNCRFHVN5 A, B, C
48. Microsoft.Windows.CommunicationsApps 9WZDNCRFHVQM A, B, C
49. Microsoft.XboxGameOverlay 9NBLGGH537C2 A, B, C
50. Microsoft.XboxIdentityProvider 9WZDNCRD1HKW A, B, C
51. Microsoft.XboxSpeechToTextOverlay 9P086NHDNB9W A, B, C
52. Microsoft.YourPhone 9NMPJ99VJBWV A, B, C
53. MicrosoftCorporationII.QuickAssist 9P7BP5VNWKX5 A, B, C
54. MicrosoftWindows.Client.WebExperience 9MSSGKG348SP A, B, C

###### InBox Apps：已安装

$custom\_array = @(); Get-AppXProvisionedPackage -Path "D:\OS\_11\_Custom\Install\Install\Mount" | ForEach-Object { $custom\_array += [PSCustomObject]@{ DisplayName = $\_.DisplayName; PackageName = $\_.PackageName; Version = $\_.Version; Architecture = $\_.Architecture; ResourceId = $\_.ResourceId; Regions = $\_.Regions; } };

* 优先执行以上 PS 代码后，才能选择以下“查看”或“导出到 CSV”。
* 查看已安装 InBox Apps，请了解区域（Region）绑定，未绑定区域在执行完 OOBE 后，将不会出现在应用程序里。
  + 1. 查看

$custom\_array | Out-GridView

* + 1. 导出到 Csv

$SaveTo = "D:\OS\_11\_Custom\Install\Install\Report.InBox.Apps.$(Get-Date -Format "yyyyMMddHHmmss").csv"

$custom\_array | Export-CSV -NoType -Path $SaveTo

Write-host $SaveTo -ForegroundColor Green

###### 删除已安装的所有预应用程序

* Install.InBox.Apps.Clear.all.ps1
  + [\Expand\Install\Install.InBox.Apps.Clear.all.ps1](Expand/Install/Install.InBox.Apps.Clear.all.ps1)
  + <https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/23H2/Expand/Install/Install.InBox.Apps.Clear.all.ps1>
* 复制代码

Get-AppXProvisionedPackage -path "D:\OS\_11\_Custom\Install\Install\Mount" -ErrorAction SilentlyContinue | ForEach-Object {

Write-host "`n $($\_.DisplayName)"

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

try {

Remove-AppxProvisionedPackage -Path "D:\OS\_11\_Custom\Install\Install\Mount" -PackageName $\_.PackageName -ErrorAction SilentlyContinue | Out-Null

Write-host "Finish" -ForegroundColor Green

} catch {

Write-host "Failed" -ForegroundColor Red

}

}

###### 安装“本地语言体验包（LXPs）”向脱机映像标记：已安装语言

了解已安装语言标记前，先了解 ZuneMusic 应用程序可用的语言列表：en-us, en-gb, as-in, az-latn-az, bs-latn-ba, bn-in, cs-cz, cy-gb, ar-sa, de-de, af-za, am-et, da-dk, el-gr, es-es, es-mx, ca-es, ca-es-valencia, eu-es, fi-fi, bg-bg, ga-ie, et-ee, gl-es, gu-in, gd-gb, fil-ph, fr-ca, fr-fr, hy-am, fa-ir, hu-hu, id-id, it-it, ja-jp, hr-hr, ka-ge, is-is, he-il, hi-in, kk-kz, lo-la, km-kh, lt-lt, kn-in, kok-in, ko-kr, mk-mk, lv-lv, ms-my, mi-nz, mr-in, mt-mt, ne-np, nl-nl, nb-no, ml-in, nn-no, lb-lu, or-in, ro-ro, sk-sk, ru-ru, pl-pl, quz-pe, pt-br, pt-pt, sq-al, ta-in, th-th, sv-se, pa-in, sr-cyrl-ba, sr-cyrl-rs, sr-latn-rs, ur-pk, ug-cn, tr-tr, uk-ua, tt-ru, zh-cn, vi-vn, uz-latn-uz, sl-si, zh-tw, te-in

查看脱机映像已安装的语言

Dism /Image:"D:\OS\_11\_Custom\Install\Install\Mount" /Get-Intl

查看结果已安装的语言：en-US、zh-CN，在安装 ZuneMusic 应用时，安装程序会匹配“已安装的语言”，自动过滤未安装的语言列表，这就是语言标记。

###### 脱机映像已安装语言标记：添加方式

向脱机映像标记：已安装语言，有二种方法，第一种安装 Microsoft-Windows-Client-Language-Pack\_x64\_zh-cn.cab，第二种安装“本地语言体验包（LXPs）”，微软官方向 Windows 10 提供了本地语言体验包（LXPS）安装文件，Windows 11 不再提供，想获取：

* + 1. 使用“Windows 本地语言体验包（LXPs）下载器”下载

了解：<https://github.com/ilikeyi/LXPs>

下载后保存到：D:\OS\_11\_Custom\Install\Install\InBox.Apps，文件格式：LanguageExperiencePack.zh-CN.Neutral.Appx

* + 1. 手动下载
       1. 区域

区域 产品 ID 区域 产品 ID

en-US C9PDSCC711RVF af-za 9PDW16B5HMXR

am-et 9NGL4R61W3PL ar-sa 9N4S78P86PKX

as-in 9NTJLXMXX35J az-latn-az 9P5TFKZHQ5K8

be-by 9MXPBGNNDW3L bg-bg 9MX54588434F

bn-bd 9PH7TKVXGGM8 bn-in 9P1M44L7W84T

bs-latn-ba 9MVFKLJ10MFL ca-es 9P6JMKJQZ9S7

ca-es-valencia 9P9K3WMFSW90 chr-cher-us 9MX15485N3RK

cs-cz 9P3WXZ1KTM7C cy-gb 9NKJ9TBML4HB

da-dk 9NDMT2VKSNL1 de-de 9P6CT0SLW589

el-gr 9N586B13PBLD en-gb 9NT52VQ39BVN

es-es 9NWVGWLHPB1Z es-mx 9N8MCM1X3928

et-ee 9NFBHFMCR30L eu-es 9NMCHQHZ37HZ

fa-ir 9NGS7DD4QS21 fi-fi 9MW3PQ7SD3QK

fil-ph 9NWM2KGTDSSS fr-ca 9MTP2VP0VL92

fr-fr 9NHMG4BJKMDG ga-ie 9P0L5Q848KXT

gd-gb 9P1DBPF36BF3 gl-es 9NXRNBRNJN9B

gu-in 9P2HMSWDJDQ1 ha-latn-ng 9N1L95DBGRG3

he-il 9NB6ZFND5HCQ hi-in 9NZC3GRX8LD3

hr-hr 9NW01VND4LTW hu-hu 9MWN3C58HL87

hy-am 9NKM28TM6P67 id-id 9P4X3N4SDK8P

ig-ng 9PG4ZFJ48JSX is-is 9NTHJR7TQXX1

it-it 9P8PQWNS6VJX ja-jp 9N1W692FV4S1

ka-ge 9P60JZL05WGH kk-kz 9PHV179R97LV

km-kh 9PGKTS4JS531 kn-in 9NC6DB7N95F9

kok-in 9MV3P55CMZ6P ko-kr 9N4TXPCVRNGF

ku-arab-iq 9P1C18QL3D7H ky-kg 9P7D3JJGZM48

lb-lu 9N0ST1WBZ9D9 lo-la 9N8X352G5NZV

lt-lt 9NWWD891H6HN lv-lv 9N5CQDPH6SQT

mi-nz 9P2GDFB3JPSX mk-mk 9P1X6XB1K3RN

ml-in 9NWDTV8FFV7L mn-mn 9PG1DHC4VTZW

mr-in 9MWXCKHJVR1J ms-my 9NPXL8ZSDDQ7

mt-mt 9PDG96SQ6BN8 nb-no 9N6J0M5DHCK0

ne-np 9P7CHPLWDQVN nl-nl 9PF1C9NB5PRV

nn-no 9PK7KM3Z06KH nso-za 9NS49QLX5CDV

or-in 9NTHCXCXSJDH pa-arab-pk 9NJRL03WH6FM

pa-in 9NSNC0ZJX69B pl-pl 9NC5HW94R0LD

prs-af 9P3NGC6X5ZQC pt-br 9P8LBDM4FW35

pt-pt 9P7X8QJ7FL0X quc-latn-gt 9P2V6MNNQZ0B

quz-pe 9NHTX8NVQ04K ro-ro 9MWXGPJ5PJ3H

ru-ru 9NMJCX77QKPX rw-rw 9NFW0M20H9WG

sd-arab-pk 9NB9JSCXW9X5 si-lk 9NVF9QSLGTL0

sk-sk 9N7LSNN099WB sl-si 9NV27L34J4ST

sq-al 9MWLRGNMDGK7 sr-cyrl-ba 9MXGN7V65C7B

sr-cyrl-rs 9PPD6CCK9K5H sr-latn-rs 9NBZ0SJDPPVT

sv-se 9P0HSNX08177 sw-ke 9NFF2M19DQ55

ta-in 9PDZB1WT1B34 te-in 9PMQJJGF63FW

tg-cyrl-tj 9MZHLBPPT2HC th-th 9MSTWFRL0LR4

ti-et 9NC8C9RDNK2S tk-tm 9NKHQ4GL6VLT

tn-za 9NFSXM123DHT tr-tr 9NL1D3T5HG9R

tt-ru 9NV90Q1X1ZR2 ug-cn 9P52C5D7VL5S

uk-ua 9PPPMZRSGHR8 ur-pk 9NDWFTFW12BQ

uz-latn-uz 9P5P2T5P5L9S vi-vn 9P0W68X0XZPT

wo-sn 9NH3SW1CR90F xh-za 9NW3QWSLQD17

yo-ng 9NGM3VPPZS5V zh-cn 9NRMNT6GMZ7

zh-tw 9PCJ4DHCQ1JQ zu-za 9NNRM7KT5NB0

下载区域：zh-CN，应用程序 ID：9NRMNT6GMZ70，商店连接：https://www.microsoft.com/store/productId/9NRMNT6GMZ70

* + - 1. 打开网站：<https://store.rg-adguard.net>
         1. 搜索关键词：https://www.microsoft.com/store/productId/9NRMNT6GMZ70
         2. 网页内搜索 22621 内容，搜索结果：Microsoft.LanguageExperiencePackzh-CN\_22621.\*. neutral\_\_8wekyb3d8bbwe.appx
         3. 下载后保存到 D:\OS\_11\_Custom\Install\Install\InBox.Apps 目录里，重命名：LanguageExperiencePack.zh-cn.Neutral.Appx
    1. 执行安装命令安装本地语言体验包（LXPs）

了解区域标记添加方式后，获得 LanguageExperiencePack.zh-cn.Neutral.appx 后，执行安装命令：

Add-AppxProvisionedPackage -Path "D:\OS\_11\_Custom\Install\Install\Mount" -PackagePath "D:\OS\_11\_Custom\Install\Install\InBox.apps\LanguageExperiencePack.zh-cn.Neutral.appx" -SkipLicense

* + 1. 区域标记：新增变化

脱机映像已安装的语言将成为默认，例如已安装语言：en-US、zh-CN，那么重新安装或更新 InBox Apps 应用程序时，将参考已安装语言来进行匹配，自动添加对应的语言包，可通过以下方式查看变化。

* + - 1. InBox Apps：已安装的应用程序包

$custom\_array = @(); Get-AppXProvisionedPackage -Path "D:\OS\_11\_Custom\Install\Install\Mount" | ForEach-Object { $custom\_array += [PSCustomObject]@{ DisplayName = $\_.DisplayName; PackageName = $\_.PackageName; Version = $\_.Version; Architecture = $\_.Architecture; ResourceId = $\_.ResourceId; Regions = $\_.Regions; } };

* 优先执行以上 PS 代码后，才能选择以下“查看”或“导出到 CSV”。
  + - * 1. 查看

$custom\_array | Out-GridView

* + - * 1. 导到出 Csv

$SaveTo = "D:\OS\_11\_Custom\Install\Install\Report.InBox.Apps.$(Get-Date -Format "yyyyMMddHHmmss").csv"

$custom\_array | Export-CSV -NoType -Path $SaveTo

Write-host $SaveTo -ForegroundColor Green

* + - 1. 查看可用的语言设置

Dism /Image:"D:\OS\_11\_Custom\Install\Install\Mount" /Get-Intl

###### InBox Apps：安装

* + 1. 挂载或解压 InBox Apps 安装文件

挂载 22621.1.220506-1250.ni\_release\_amd64fre\_InboxApps.iso 或解压到任意位置；

* + 1. 执行安装命令后安装 InBox Apps 到：Install.wim
       - Auto = 自动搜索本地所有磁盘，默认；
       - 自定义路径，例如指定为 F 盘：$ISO = "F:\packages"
       - 架构：x64
       - Install.Inst.InBox.Apps.ps1
       - [\Expand\Install\Install.Inst.InBox.Apps.ps1](Expand/Install/Install.Inst.InBox.Apps.ps1)
       - <https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/23H2/Expand/Install/Install.Inst.InBox.Apps.ps1>
* 复制代码

$ISO = "Auto"

$Mount = "D:\OS\_11\_Custom\Install\Install\Mount"

$Arch = "x64"

try {

Write-host "`n Offline image version: " -NoNewline

$Current\_Edition\_Version = (Get-WindowsEdition -Path $Mount).Edition

Write-Host $Current\_Edition\_Version -ForegroundColor Green

} catch {

Write-Host "Error" -ForegroundColor Red

Write-Host " $($\_)" -ForegroundColor Yellow

return

}

$Pre\_Config\_Rules = @{

Edition = @(

@{

Name = @( "Core"; "CoreN"; "CoreSingleLanguage"; )

Apps = @(

"Microsoft.UI.Xaml.2.3"; "Microsoft.UI.Xaml.2.4"; "Microsoft.UI.Xaml.2.7"; "Microsoft.UI.Xaml.2.8"; "Microsoft.NET.Native.Framework.2.2"; "Microsoft.NET.Native.Runtime.2.2"; "Microsoft.VCLibs.140.00"; "Microsoft.VCLibs.140.00.UWPDesktop"; "Microsoft.Services.Store.Engagement";

"Microsoft.HEIFImageExtension"; "Microsoft.HEVCVideoExtension"; "Microsoft.SecHealthUI"; "Microsoft.VP9VideoExtensions"; "Microsoft.WebpImageExtension"; "Microsoft.WindowsStore"; "Microsoft.GamingApp"; "Microsoft.MicrosoftStickyNotes"; "Microsoft.Paint"; "Microsoft.PowerAutomateDesktop";

"Microsoft.ScreenSketch"; "Microsoft.WindowsNotepad"; "Microsoft.WindowsTerminal"; "Clipchamp.Clipchamp"; "Microsoft.MicrosoftSolitaireCollection"; "Microsoft.WindowsAlarms"; "Microsoft.WindowsFeedbackHub"; "Microsoft.WindowsMaps"; "Microsoft.ZuneMusic"; "Microsoft.BingNews";

"Microsoft.BingWeather"; "Microsoft.DesktopAppInstaller"; "Microsoft.WindowsCamera"; "Microsoft.Getstarted"; "Microsoft.Cortana"; "Microsoft.GetHelp"; "Microsoft.MicrosoftOfficeHub"; "Microsoft.People"; "Microsoft.StorePurchaseApp"; "Microsoft.Todos"; "Microsoft.WebMediaExtensions";

"Microsoft.Windows.Photos"; "Microsoft.WindowsCalculator"; "Microsoft.windowscommunicationsapps"; "Microsoft.WindowsSoundRecorder"; "Microsoft.Xbox.TCUI"; "Microsoft.XboxGameOverlay"; "Microsoft.XboxGamingOverlay"; "Microsoft.XboxIdentityProvider"; "Microsoft.XboxSpeechToTextOverlay";

"Microsoft.YourPhone"; "Microsoft.ZuneVideo"; "MicrosoftCorporationII.QuickAssist"; "MicrosoftWindows.Client.WebExperience"; "Microsoft.RawImageExtension"; "MicrosoftCorporationII.MicrosoftFamily";

)

}

@{

Name = @( "Education"; "Professional"; "ProfessionalEducation"; "ProfessionalWorkstation"; "Enterprise"; "IoTEnterprise"; "ServerRdsh"; "ServerStandard"; "ServerDatacenter"; )

Apps = @(

"Microsoft.UI.Xaml.2.3"; "Microsoft.UI.Xaml.2.4"; "Microsoft.UI.Xaml.2.7"; "Microsoft.UI.Xaml.2.8"; "Microsoft.NET.Native.Framework.2.2"; "Microsoft.NET.Native.Runtime.2.2"; "Microsoft.VCLibs.140.00"; "Microsoft.VCLibs.140.00.UWPDesktop"; "Microsoft.Services.Store.Engagement";

"Microsoft.HEIFImageExtension"; "Microsoft.HEVCVideoExtension"; "Microsoft.SecHealthUI"; "Microsoft.VP9VideoExtensions"; "Microsoft.WebpImageExtension"; "Microsoft.WindowsStore"; "Microsoft.GamingApp"; "Microsoft.MicrosoftStickyNotes"; "Microsoft.Paint"; "Microsoft.PowerAutomateDesktop";

"Microsoft.ScreenSketch"; "Microsoft.WindowsNotepad"; "Microsoft.WindowsTerminal"; "Clipchamp.Clipchamp"; "Microsoft.MicrosoftSolitaireCollection"; "Microsoft.WindowsAlarms"; "Microsoft.WindowsFeedbackHub"; "Microsoft.WindowsMaps"; "Microsoft.ZuneMusic"; "Microsoft.BingNews";

"Microsoft.BingWeather"; "Microsoft.DesktopAppInstaller"; "Microsoft.WindowsCamera"; "Microsoft.Getstarted"; "Microsoft.Cortana"; "Microsoft.GetHelp"; "Microsoft.MicrosoftOfficeHub"; "Microsoft.People"; "Microsoft.StorePurchaseApp"; "Microsoft.Todos"; "Microsoft.WebMediaExtensions";

"Microsoft.Windows.Photos"; "Microsoft.WindowsCalculator"; "Microsoft.windowscommunicationsapps"; "Microsoft.WindowsSoundRecorder"; "Microsoft.Xbox.TCUI"; "Microsoft.XboxGameOverlay"; "Microsoft.XboxGamingOverlay"; "Microsoft.XboxIdentityProvider"; "Microsoft.XboxSpeechToTextOverlay";

"Microsoft.YourPhone"; "Microsoft.ZuneVideo"; "MicrosoftCorporationII.QuickAssist"; "MicrosoftWindows.Client.WebExperience"; "Microsoft.RawImageExtension";

)

}

@{

Name = @( "EnterpriseN"; "EnterpriseGN"; "EnterpriseSN"; "ProfessionalN"; "EducationN"; "ProfessionalWorkstationN"; "ProfessionalEducationN"; "CloudN"; "CloudEN"; "CloudEditionLN"; "StarterN" )

Apps = @(

"Microsoft.UI.Xaml.2.3"; "Microsoft.UI.Xaml.2.4"; "Microsoft.UI.Xaml.2.7"; "Microsoft.UI.Xaml.2.8"; "Microsoft.NET.Native.Framework.2.2"; "Microsoft.NET.Native.Runtime.2.2"; "Microsoft.VCLibs.140.00"; "Microsoft.VCLibs.140.00.UWPDesktop"; "Microsoft.Services.Store.Engagement";

"Microsoft.SecHealthUI"; "Microsoft.WindowsStore"; "Microsoft.MicrosoftStickyNotes"; "Microsoft.Paint"; "Microsoft.PowerAutomateDesktop"; "Microsoft.ScreenSketch"; "Microsoft.WindowsNotepad"; "Microsoft.WindowsTerminal"; "Clipchamp.Clipchamp"; "Microsoft.MicrosoftSolitaireCollection";

"Microsoft.WindowsAlarms"; "Microsoft.WindowsFeedbackHub"; "Microsoft.WindowsMaps"; "Microsoft.BingNews"; "Microsoft.BingWeather"; "Microsoft.DesktopAppInstaller"; "Microsoft.WindowsCamera"; "Microsoft.Getstarted"; "Microsoft.Cortana"; "Microsoft.GetHelp"; "Microsoft.MicrosoftOfficeHub";

"Microsoft.People"; "Microsoft.StorePurchaseApp"; "Microsoft.Todos"; "Microsoft.Windows.Photos"; "Microsoft.WindowsCalculator"; "Microsoft.windowscommunicationsapps"; "Microsoft.XboxGameOverlay"; "Microsoft.XboxIdentityProvider"; "Microsoft.XboxSpeechToTextOverlay"; "Microsoft.YourPhone";

"MicrosoftCorporationII.QuickAssist"; "MicrosoftWindows.Client.WebExperience";

)

}

)

Rule = @(

@{ Name="Microsoft.UI.Xaml.2.3"; Match="UI.Xaml\*{ARCHC}\*2.3"; License="UI.Xaml\*{ARCHC}\*2.3"; Region="All"; Dependencies=@(); }

@{ Name="Microsoft.UI.Xaml.2.4"; Match="UI.Xaml\*{ARCHTag}\*2.4"; License="UI.Xaml\*{ARCHTag}\*2.4"; Region="All"; Dependencies=@(); }

@{ Name="Microsoft.UI.Xaml.2.7"; Match="UI.Xaml\*{ARCHTag}\*2.7"; License="UI.Xaml\*{ARCHTag}\*2.7"; Region="All"; Dependencies=@(); }

@{ Name="Microsoft.UI.Xaml.2.8"; Match="UI.Xaml\*{ARCHTag}\*2.8"; License="UI.Xaml\*{ARCHTag}\*2.8"; Region="All"; Dependencies=@(); }

@{ Name="Microsoft.NET.Native.Framework.2.2"; Match="Native.Framework\*{ARCHTag}\*2.2"; License="Native.Framework\*{ARCHTag}\*2.2"; Region="All"; Dependencies=@(); }

@{ Name="Microsoft.NET.Native.Runtime.2.2"; Match="Native.Runtime\*{ARCHTag}\*2.2"; License="Native.Runtime\*{ARCHTag}\*2.2"; Region="All"; Dependencies=@(); }

@{ Name="Microsoft.VCLibs.140.00"; Match="VCLibs\*{ARCHTag}"; License="VCLibs\*{ARCHTag}"; Region="All"; Dependencies=@(); }

@{ Name="Microsoft.VCLibs.140.00.UWPDesktop"; Match="VCLibs\*{ARCHTag}\*Desktop"; License="VCLibs\*{ARCHTag}\*Desktop"; Region="All"; Dependencies=@(); }

@{ Name="Microsoft.Services.Store.Engagement"; Match="Services.Store.Engagement\*{ARCHC}"; License="Services.Store.Engagement\*{ARCHC}"; Region="All"; Dependencies=@(); }

@{ Name="Microsoft.HEIFImageExtension"; Match="HEIFImageExtension"; License="HEIFImageExtension\*"; Region="All"; Dependencies=@("Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.HEVCVideoExtension"; Match="HEVCVideoExtension\*{ARCHC}"; License="HEVCVideoExtension\*{ARCHC}\*xml"; Region="All"; Dependencies=@("Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.SecHealthUI"; Match="SecHealthUI\*{ARCHC}"; License="SecHealthUI\*{ARCHC}"; Region="All"; Dependencies=@("Microsoft.UI.Xaml.2.4","Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.VP9VideoExtensions"; Match="VP9VideoExtensions\*{ARCHC}"; License="VP9VideoExtensions\*{ARCHC}"; Region="All"; Dependencies=@("Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.WebpImageExtension"; Match="WebpImageExtension\*{ARCHC}"; License="WebpImageExtension\*{ARCHC}"; Region="All"; Dependencies=@("Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.WindowsStore"; Match="WindowsStore"; License="WindowsStore"; Region="All"; Dependencies=@("Microsoft.UI.Xaml.2.7","Microsoft.NET.Native.Framework.2.2","Microsoft.NET.Native.Runtime.2.2","Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.GamingApp"; Match="GamingApp"; License="GamingApp"; Region="All"; Dependencies=@("Microsoft.UI.Xaml.2.3","Microsoft.VCLibs.140.00","Microsoft.VCLibs.140.00.UWPDesktop"); }

@{ Name="Microsoft.MicrosoftStickyNotes"; Match="MicrosoftStickyNotes"; License="MicrosoftStickyNotes"; Region="All"; Dependencies=@("Microsoft.NET.Native.Framework.2.2","Microsoft.NET.Native.Runtime.2.2","Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.Paint"; Match="Paint"; License="Paint"; Region="All"; Dependencies=@("Microsoft.VCLibs.140.00","Microsoft.VCLibs.140.00.UWPDesktop","Microsoft.UI.Xaml.2.7"); }

@{ Name="Microsoft.PowerAutomateDesktop"; Match="PowerAutomateDesktop"; License="PowerAutomateDesktop"; Region="All"; Dependencies=@("Microsoft.VCLibs.140.00.UWPDesktop"); }

@{ Name="Microsoft.ScreenSketch"; Match="ScreenSketch"; License="ScreenSketch"; Region="All"; Dependencies=@("Microsoft.UI.Xaml.2.7","Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.WindowsNotepad"; Match="WindowsNotepad"; License="WindowsNotepad"; Region="All"; Dependencies=@("Microsoft.VCLibs.140.00","Microsoft.VCLibs.140.00.UWPDesktop","Microsoft.UI.Xaml.2.7"); }

@{ Name="Microsoft.WindowsTerminal"; Match="WindowsTerminal"; License="WindowsTerminal"; Region="All"; Dependencies=@("Microsoft.UI.Xaml.2.7","Microsoft.VCLibs.140.00.UWPDesktop"); }

@{ Name="Clipchamp.Clipchamp"; Match="Clipchamp.Clipchamp"; License="Clipchamp.Clipchamp"; Region="All"; Dependencies=@(); }

@{ Name="Microsoft.MicrosoftSolitaireCollection"; Match="MicrosoftSolitaireCollection"; License="MicrosoftSolitaireCollection"; Region="All"; Dependencies=@("Microsoft.NET.Native.Framework.2.2","Microsoft.NET.Native.Runtime.2.2","Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.WindowsAlarms"; Match="WindowsAlarms"; License="WindowsAlarms"; Region="All"; Dependencies=@("Microsoft.UI.Xaml.2.8","Microsoft.NET.Native.Framework.2.2","Microsoft.NET.Native.Runtime.2.2","Microsoft.VCLibs.140.00","Microsoft.VCLibs.140.00.UWPDesktop"); }

@{ Name="Microsoft.WindowsFeedbackHub"; Match="WindowsFeedbackHub"; License="WindowsFeedbackHub"; Region="All"; Dependencies=@("Microsoft.UI.Xaml.2.7","Microsoft.NET.Native.Framework.2.2","Microsoft.NET.Native.Runtime.2.2","Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.WindowsMaps"; Match="WindowsMaps"; License="WindowsMaps"; Region="All"; Dependencies=@("Microsoft.UI.Xaml.2.7","Microsoft.NET.Native.Framework.2.2","Microsoft.NET.Native.Runtime.2.2","Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.ZuneMusic"; Match="ZuneMusic"; License="ZuneMusic"; Region="All"; Dependencies=@("Microsoft.UI.Xaml.2.7","Microsoft.NET.Native.Framework.2.2","Microsoft.NET.Native.Runtime.2.2","Microsoft.VCLibs.140.00"); }

@{ Name="MicrosoftCorporationII.MicrosoftFamily"; Match="MicrosoftFamily"; License="MicrosoftFamily"; Region="All"; Dependencies=@("Microsoft.VCLibs.140.00.UWPDesktop"); }

@{ Name="Microsoft.BingNews"; Match="BingNews"; License="BingNews"; Region="All"; Dependencies=@("Microsoft.UI.Xaml.2.7","Microsoft.NET.Native.Framework.2.2","Microsoft.NET.Native.Runtime.2.2","Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.BingWeather"; Match="BingWeather"; License="BingWeather"; Region="All"; Dependencies=@("Microsoft.UI.Xaml.2.7","Microsoft.NET.Native.Framework.2.2","Microsoft.NET.Native.Runtime.2.2","Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.DesktopAppInstaller"; Match="DesktopAppInstaller"; License="DesktopAppInstaller"; Region="All"; Dependencies=@("Microsoft.UI.Xaml.2.7","Microsoft.VCLibs.140.00.UWPDesktop"); }

@{ Name="Microsoft.WindowsCamera"; Match="WindowsCamera"; License="WindowsCamera"; Region="All"; Dependencies=@("Microsoft.UI.Xaml.2.8","Microsoft.NET.Native.Framework.2.2","Microsoft.NET.Native.Runtime.2.2","Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.Getstarted"; Match="Getstarted"; License="Getstarted"; Region="All"; Dependencies=@("Microsoft.UI.Xaml.2.7","Microsoft.NET.Native.Framework.2.2","Microsoft.NET.Native.Runtime.2.2","Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.Cortana"; Match="Cortana"; License="Cortana"; Region="All"; Dependencies=@("Microsoft.NET.Native.Framework.2.2","Microsoft.NET.Native.Runtime.2.2","Microsoft.VCLibs.140.00","Microsoft.VCLibs.140.00.UWPDesktop"); }

@{ Name="Microsoft.GetHelp"; Match="GetHelp"; License="GetHelp"; Region="All"; Dependencies=@("Microsoft.UI.Xaml.2.7","Microsoft.NET.Native.Framework.2.2","Microsoft.NET.Native.Runtime.2.2","Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.MicrosoftOfficeHub"; Match="MicrosoftOfficeHub"; License="MicrosoftOfficeHub"; Region="All"; Dependencies=@("Microsoft.VCLibs.140.00","Microsoft.VCLibs.140.00.UWPDesktop"); }

@{ Name="Microsoft.People"; Match="People"; License="People"; Region="All"; Dependencies=@("Microsoft.NET.Native.Framework.2.2","Microsoft.NET.Native.Runtime.2.2","Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.StorePurchaseApp"; Match="StorePurchaseApp"; License="StorePurchaseApp"; Region="All"; Dependencies=@("Microsoft.NET.Native.Framework.2.2","Microsoft.NET.Native.Runtime.2.2","Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.Todos"; Match="Todos"; License="Todos"; Region="All"; Dependencies=@("Microsoft.UI.Xaml.2.8","Microsoft.NET.Native.Framework.2.2","Microsoft.NET.Native.Runtime.2.2","Microsoft.VCLibs.140.00","Microsoft.VCLibs.140.00.UWPDesktop","Microsoft.Services.Store.Engagement"); }

@{ Name="Microsoft.WebMediaExtensions"; Match="WebMediaExtensions"; License="WebMediaExtensions"; Region="All"; Dependencies=@("Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.Windows.Photos"; Match="Windows.Photos"; License="Windows.Photos"; Region="All"; Dependencies=@("Microsoft.UI.Xaml.2.4","Microsoft.NET.Native.Framework.2.2","Microsoft.NET.Native.Runtime.2.2","Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.WindowsCalculator"; Match="WindowsCalculator"; License="WindowsCalculator"; Region="All"; Dependencies=@("Microsoft.UI.Xaml.2.8","Microsoft.NET.Native.Framework.2.2","Microsoft.NET.Native.Runtime.2.2","Microsoft.VCLibs.140.00","Microsoft.VCLibs.140.00.UWPDesktop"); }

@{ Name="Microsoft.windowscommunicationsapps"; Match="WindowsCommunicationsApps"; License="WindowsCommunicationsApps"; Region="All"; Dependencies=@("Microsoft.UI.Xaml.2.7","Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.WindowsSoundRecorder"; Match="WindowsSoundRecorder"; License="WindowsSoundRecorder"; Region="All"; Dependencies=@("Microsoft.UI.Xaml.2.3","Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.Xbox.TCUI"; Match="Xbox.TCUI"; License="Xbox.TCUI"; Region="All"; Dependencies=@("Microsoft.NET.Native.Framework.2.2","Microsoft.NET.Native.Runtime.2.2","Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.XboxGameOverlay"; Match="XboxGameOverlay"; License="XboxGameOverlay"; Region="All"; Dependencies=@("Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.XboxGamingOverlay"; Match="XboxGamingOverlay"; License="XboxGamingOverlay"; Region="All"; Dependencies=@("Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.XboxIdentityProvider"; Match="XboxIdentityProvider"; License="XboxIdentityProvider"; Region="All"; Dependencies=@("Microsoft.NET.Native.Framework.2.2","Microsoft.NET.Native.Runtime.2.2","Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.XboxSpeechToTextOverlay"; Match="XboxSpeechToTextOverlay"; License="XboxSpeechToTextOverlay"; Region="All"; Dependencies=@("Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.YourPhone"; Match="YourPhone"; License="YourPhone"; Region="All"; Dependencies=@("Microsoft.VCLibs.140.00","Microsoft.VCLibs.140.00.UWPDesktop"); }

@{ Name="Microsoft.ZuneVideo"; Match="ZuneVideo"; License="ZuneVideo"; Region="All"; Dependencies=@("Microsoft.UI.Xaml.2.7","Microsoft.VCLibs.140.00"); }

@{ Name="MicrosoftCorporationII.QuickAssist"; Match="QuickAssist"; License="QuickAssist"; Region="All"; Dependencies=@("Microsoft.VCLibs.140.00.UWPDesktop"); }

@{ Name="MicrosoftWindows.Client.WebExperience"; Match="WebExperience"; License="WebExperience"; Region="All"; Dependencies=@("Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.MinecraftEducationEdition"; Match="MinecraftEducationEdition"; License="MinecraftEducationEdition"; Region="All"; Dependencies=@("Microsoft.VCLibs.140.00.UWPDesktop"); }

@{ Name="Microsoft.Whiteboard"; Match="Whiteboard"; License="Whiteboard"; Region="All"; Dependencies=@("Microsoft.NET.Native.Framework.2.2","Microsoft.NET.Native.Runtime.2.2","Microsoft.VCLibs.140.00"); }

@{ Name="Microsoft.RawImageExtension"; Match="RawImageExtension"; License="RawImageExtension"; Region="All"; Dependencies=@(); }

)

}

$Allow\_Install\_App = @()

ForEach ($item in $Pre\_Config\_Rules.Edition) {

if ($item.Name -contains $Current\_Edition\_Version) {

Write-host "`n Match to: "-NoNewline; Write-host $Current\_Edition\_Version -ForegroundColor Green

$Allow\_Install\_App = $item.Apps

break

}

}

Write-host "`n The app to install ( $($Allow\_Install\_App.Count) item )" -ForegroundColor Yellow

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

ForEach ($item in $Allow\_Install\_App) { Write-host " $($item)" -ForegroundColor Green }

Function Match\_InBox\_Apps\_Install\_Pack

{

param ( $NewPath )

$NewArch = $Arch; $NewArchC = $Arch.Replace("AMD64", "x64"); $NewArchCTag = $Arch.Replace("AMD64", "x64");

if ($Arch -eq "arm64") { $NewArchCTag = "arm" }

if ($Pre\_Config\_Rules.Rule.Count -gt 0) {

ForEach ($itemInBoxApps in $Pre\_Config\_Rules.Rule){

$InstallPacker = ""; $InstallPackerCert = "";

$SearchNewStructure = $itemInBoxApps.Match.Replace("{ARCH}", $NewArch).Replace("{ARCHC}", $NewArchC).Replace("{ARCHTag}", $NewArchCTag)

$SearchNewLicense = $itemInBoxApps.License.Replace("{ARCH}", $NewArch).Replace("{ARCHC}", $NewArchC).Replace("{ARCHTag}", $NewArchCTag)

Get-ChildItem -Path $NewPath -Filter "\*$($SearchNewStructure)\*" -Include "\*.appx", "\*.appxbundle", "\*.msixbundle", "\*.msix" -Recurse -Force -ErrorAction SilentlyContinue | ForEach-Object {

if (Test-Path -Path $\_.FullName -PathType Leaf) {

$InstallPacker = $\_.FullName

Get-ChildItem -Path $NewPath -Filter "\*$($SearchNewLicense)\*" -Include \*.xml -Recurse -Force -ErrorAction SilentlyContinue | ForEach-Object {

$InstallPackerCert = $\_.FullName

}

$Script:InBoxAppx += @{

Name = $itemInBoxApps.Name

Depend = $itemInBoxApps.Dependencies

Region = $itemInBoxApps.Region

Search = $SearchNewStructure

InstallPacker = $InstallPacker

Certificate = $InstallPackerCert

CertificateRule = $SearchNewLicense

}

return

}

}

}

}

}

Write-host "`n InBox Apps: Installation packages, automatic search for full disk or specified paths" -ForegroundColor Yellow

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

$Script:InBoxAppx = @()

if ($ISO -eq "Auto") {

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

$AppPath = Join-Path -Path $\_.Root -ChildPath "packages" -ErrorAction SilentlyContinue

Match\_InBox\_Apps\_Install\_Pack -NewPath $AppPath

}

} else { Match\_InBox\_Apps\_Install\_Pack -NewPath $ISO }

Write-host " Search Complete" -ForegroundColor Green

Write-host "`n InBox Apps: Installer Match Results" -ForegroundColor Yellow

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

if ($Script:InBoxAppx.Count -gt 0) {

Write-host " Match successful" -ForegroundColor Green

} else {

Write-host " Failed match" -ForegroundColor Red

return

}

Write-host "`n InBox Apps: Details of the application to be installed ( $($Script:InBoxAppx.Count) item )" -ForegroundColor Yellow

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

ForEach ($Rule in $Script:InBoxAppx) {

Write-host " Apps name: ".PadRight(22) -NoNewline; Write-host $Rule.Name -ForegroundColor Yellow

Write-host " Region: ".PadRight(22) -NoNewline; Write-host $Rule.Region -ForegroundColor Yellow

Write-host " Apps installer: ".PadRight(22) -NoNewline; Write-host $Rule.InstallPacker -ForegroundColor Yellow

Write-host " License: ".PadRight(22) -NoNewline; Write-host $Rule.Certificate -ForegroundColor Yellow

Write-host

}

Write-host "`n InBox Apps: Installation" -ForegroundColor Yellow

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

ForEach ($Rule in $Script:InBoxAppx) {

Write-host " Name: " -NoNewline; Write-host $Rule.Name -ForegroundColor Yellow

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

if($Allow\_Install\_App -contains $Rule.Name) {

Write-host " Search for apps: " -NoNewline; Write-host $Rule.InstallPacker -ForegroundColor Yellow

Write-host " Search for License: " -NoNewline; Write-host $Rule.Certificate -ForegroundColor Yellow

if (Test-Path -Path $Rule.InstallPacker -PathType Leaf) {

Write-host " Region: " -NoNewline; Write-host $Rule.Region -ForegroundColor Yellow

if ([string]::IsNullOrEmpty($Rule.Certificate)) {

Write-host " No License".PadRight(22) -NoNewline -ForegroundColor Red

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

try {

Add-AppxProvisionedPackage -Path $Mount -PackagePath $Rule.InstallPacker -SkipLicense -Regions $Rule.Region -ErrorAction SilentlyContinue | Out-Null

Write-Host "Done`n" -ForegroundColor Green

} catch {

Write-Host "Failed" -ForegroundColor Red

Write-Host " $($\_)`n" -ForegroundColor Red

}

} else {

if (Test-Path -Path $Rule.Certificate -PathType Leaf) {

Write-host " License: " -NoNewline

Write-host $Rule.Certificate -ForegroundColor Yellow

Write-host " With License".PadRight(22) -NoNewline -ForegroundColor Green

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

try {

Add-AppxProvisionedPackage -Path $Mount -PackagePath $Rule.InstallPacker -LicensePath $Rule.Certificate -Regions $Rule.Region -ErrorAction SilentlyContinue | Out-Null

Write-Host "Done`n" -ForegroundColor Green

} catch {

Write-Host "Failed" -ForegroundColor Red

Write-Host " $($\_)`n" -ForegroundColor Red

}

} else {

Write-host " No License".PadRight(22) -NoNewline -ForegroundColor Red

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

try {

Add-AppxProvisionedPackage -Path $Mount -PackagePath $Rule.InstallPacker -SkipLicense -Regions $Rule.Region -ErrorAction SilentlyContinue | Out-Null

Write-Host "Done`n" -ForegroundColor Green

} catch {

Write-Host "Failed" -ForegroundColor Red

Write-Host " $($\_)`n" -ForegroundColor Red

}

}

}

} else { Write-host " The installation package does not exist" -ForegroundColor Red }

} else { Write-host " Skip the installation`n" -ForegroundColor Red }

}

###### 脱机映像已安装语言标记：删除

* 完成安装 InBox Apps 应用后，区域标记已不再重要，可删除或不删除，删除“本地语言体验包（LXPs），简体中文 - 中国）”，区域标记： zh-CN，可更改为其它区域标记。
* Install.Clear.Flag.ps1
  + [\Expand\Install\Install.Clear.Flag.ps1](Expand/Install/Install.Clear.Flag.ps1)
  + <https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/23H2/Expand/Install/Install.Clear.Flag.ps1>
* 复制代码

$Lang = "zh-CN"

Get-AppXProvisionedPackage -Path "D:\OS\_11\_Custom\Install\Install\Mount" | Foreach-object {

if ($\_.DisplayName -Like "\*LanguageExperiencePack\*$($Lang)\*") {

Write-host " $($\_.DisplayName)"

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

try {

Remove-AppxProvisionedPackage -Path "D:\OS\_11\_Custom\Install\Install\Mount" -PackageName $\_.PackageName -ErrorAction SilentlyContinue | Out-Null

Write-host "Finish" -ForegroundColor Green

} catch {

Write-host "Failed" -ForegroundColor Red

}

}

}

###### InBox Apps：优化

在安装应用后，应优化预配 Appx 包，通过用硬链接替换相同的文件来减少应用的磁盘使用量，仅针对脱机映像。

Optimize-AppXProvisionedPackages -Path "D:\OS\_11\_Custom\Install\Install\Mount"

##### 累积更新

* + - * 不同版本、旧版本升级到最新版时，需优先添加“功能启用包”后才能添加最新版累积更新；
      * 添加语言包后，可安装与初始版本相同的累积更新，以解决安装后未刷新“组件：映像中已安装的所有包”状态的已知问题；
      * 为保持最新，推荐您下载最新版。

###### 专属功能启用包

* 学习：[KB5027397：使用启用包对 Windows 11 版本 23H2 的功能更新](https://aka.ms/ekb-w11-23H2)
* 制作 Windows 11 版本 22H2、23H2 时，需提前安装“功能启用包”后才能安装 22631.\* 的累积更新，下载后保存到：D:\OS\_11\_Custom\Install\Install\Update，根据架构选择下载：
  + 1. x64，默认

直连下载

<https://catalog.sf.dl.delivery.mp.microsoft.com/filestreamingservice/files/caa3ff4a-6420-4341-aeae-33b2d7f463be/public/windows11.0-kb5027397-x64_3a9c368e239bb928c32a790cf1663338d2cad472.msu>

添加

$KBPath = "D:\OS\_11\_Custom\Install\Install\Update\windows11.0-kb5027397-x64\_3a9c368e239bb928c32a790cf1663338d2cad472.msu"

Add-WindowsPackage -Path "D:\OS\_11\_Custom\Install\Install\Mount" -PackagePath $KBPath

* + 1. Arm64

直连下载

<https://catalog.sf.dl.delivery.mp.microsoft.com/filestreamingservice/files/c29dd4ea-7f6a-4636-a991-29ba8ae70658/public/windows11.0-kb5027397-arm64_bacb74fba9077a5b7ae2f74a3ebb0b506f9708f3.msu>

添加

$KBPath = "D:\OS\_11\_Custom\Install\Install\Update\windows11.0-kb5027397-arm64\_bacb74fba9077a5b7ae2f74a3ebb0b506f9708f3.msu"

Add-WindowsPackage -Path "D:\OS\_11\_Custom\Install\Install\Mount" -PackagePath $KBPath

###### 初始版本

* 微软官方已提供了 Windows 11 23H2 22631.2428 初始版本专属功能启用包，文件名：X23-59425\_Windows11-23H2-FeatureEnablement.zip，压缩包里包含了以下文件：KB5031354、KB5027397。
* 优先添加“专属功能启用包”后再添加“初始版本”，前往下载页面：<https://www.catalog.update.microsoft.com/Search.aspx?q=KB5031354>，下载后保存到：D:\OS\_11\_Custom\Install\Install\Update，或通过直连下载，根据架构选择下载：
  + 1. x64，默认
* 直连下载

<https://catalog.sf.dl.delivery.mp.microsoft.com/filestreamingservice/files/885dcacb-fb29-4536-88f6-4fd4792a4a65/public/windows11.0-kb5031354-x64_3391407e62562e0e48a437c5c7115667305d788c.msu>

* 添加

$KBPath = "D:\OS\_11\_Custom\Install\Install\Update\windows11.0-kb5031354-x64\_3391407e62562e0e48a437c5c7115667305d788c.msu"

Add-WindowsPackage -Path "D:\OS\_11\_Custom\Install\Install\Mount" -PackagePath $KBPath

* + 1. Arm64
* 直连下载

<https://catalog.sf.dl.delivery.mp.microsoft.com/filestreamingservice/files/e3e1d074-cfde-4c2d-ba0c-f6887db3b166/public/windows11.0-kb5031354-arm64_3848ce9f925f15d07ad1dd06fe976e6719634653.msu>

* 添加

$KBPath = "D:\OS\_11\_Custom\Install\Install\Update\windows11.0-kb5031354-arm64\_3848ce9f925f15d07ad1dd06fe976e6719634653.msu"

Add-WindowsPackage -Path "D:\OS\_11\_Custom\Install\Install\Mount" -PackagePath $KBPath

###### 其它版本

* 安装前，下载专属功能启用包 KB5027397 后并优先后添加，再依次添加其它版本。
* 查阅“[Windows 11 版本信息](https://learn.microsoft.com/zh-cn/windows/release-health/windows11-release-information)”，例如下载累积更新：KB5035853，版本号：22631.3296，前往下载页面：<https://www.catalog.update.microsoft.com/Search.aspx?q=KB5035853>，下载后保存到：D:\OS\_11\_Custom\Install\Install\Update，或通过直连下载，根据架构选择下载：
  + 1. x64，默认
* 直连下载

<https://catalog.sf.dl.delivery.mp.microsoft.com/filestreamingservice/files/594b22d5-84c3-4665-bdc7-3167c91759b9/public/windows11.0-kb5035853-x64_8ca1a9a646dbe25c071a8057f249633a61929efa.msu>

* 添加

$KBPath = "D:\OS\_11\_Custom\Install\Install\Update\windows11.0-kb5035853-x64\_8ca1a9a646dbe25c071a8057f249633a61929efa.msu"

Add-WindowsPackage -Path "D:\OS\_11\_Custom\Install\Install\Mount" -PackagePath $KBPath

* + 1. Arm64
* 直连下载

[https://catalog.sf.dl.delivery.mp.microsoft.com/filestreamingservice/files/72ba502a-7982-471c-aad2-355efddbff61/public/windows11.0-kb5035853-arm64\_076c009bca80cfa85272bd50d65951c2f663fcc5.msu](https://catalog.sf.dl.delivery.mp.microsoft.com/filestreamingservice/files/896c22e8-0e75-46b9-88aa-e2964a650705/public/windows11.0-kb5032288-arm64_384c85d652f32362fbee964d349fa220288d7140.msu)

* 添加

$KBPath = "D:\OS\_11\_Custom\Install\Install\Update\windows11.0-kb5035853-arm64\_076c009bca80cfa85272bd50d65951c2f663fcc5.msu"

Add-WindowsPackage -Path "D:\OS\_11\_Custom\Install\Install\Mount" -PackagePath $KBPath

###### 固化更新

固化后不可卸载，固化时将清理恢复映像并重置任何被取代的组件的基础。

Dism /Image:"D:\OS\_11\_Custom\Install\Install\Mount" /cleanup-image /StartComponentCleanup /ResetBase

* + 1. 固化更新后清理组件

$Mount = "D:\OS\_11\_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

}

}

##### 驱动

##### 部署引擎：添加

* 了解“[部署引擎](#_部署引擎)”，如果添加到 ISO 安装介质，可跳过添加到已挂载；
* 如果添加部署引擎到已挂载里，请继续在当前位置执行下一步。

##### 健康

保存前应检查是否损坏，健康状态异常时，中止保存

Repair-WindowsImage -Path "D:\OS\_11\_Custom\Install\Install\Mount" -ScanHealth

##### 替换 WinRE.wim

已批量替换 Install.wim 里的所有索引号里的 WinRE.wim 请跳过该步骤。

$WinRE = "D:\OS\_11\_Custom\Install\Install\Update\Winlib\WinRE.wim"

$CopyTo = "D:\OS\_11\_Custom\Install\Install\Mount\Windows\System32\Recovery"

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

##### 保存映像：Install.wim

Save-WindowsImage -Path "D:\OS\_11\_Custom\Install\Install\Mount"

##### 卸载映像：Install.wim

关闭所有可能正在访问映像中文件的应用程序，包括文件资源管理器。

Dismount-WindowsImage -Path "D:\OS\_11\_Custom\Install\Install\Mount" -Discard

循环操作区域，结束。

##### [如何批量替换 Install.wim 里的所有索引号里的 WinRE.wim](#_3.1__)

###### 获取 WimLib

前往 <https://wimlib.net> 官方网站后，选择不同的版本：[arm64](https://wimlib.net/downloads/wimlib-1.14.3-windows-aarch64-bin.zip), [x64](https://wimlib.net/downloads/wimlib-1.14.3-windows-aarch64-bin.zip), [x86](https://wimlib.net/downloads/wimlib-1.14.3-windows-i686-bin.zip)，下载完成后解压到：D:\Wimlib

###### 如何在 Install.wim 里提取和更新 WinRE.wim

* + 1. 从 Install.wim 里提取 WinRE.wim 文件Install.wim
* Install.WinRE.Replace.wim.ps1
  + [\Expand\Install\Install.WinRE.Replace.wim.ps1](Expand/Install/Install.WinRE.Replace.wim.ps1)
  + <https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/23H2/Expand/Install/Install.WinRE.Replace.wim.ps1>
* 复制代码

$Arguments = @(

"extract",

"D:\OS\_11\sources\install.wim", "1",

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

"--dest-dir=""D:\OS\_11\_Custom\Install\Install\Update\Winlib"""

)

New-Item -Path "D:\OS\_11\_Custom\Install\Install\Update\Winlib" -ItemType Directory

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

* + 1. 获取 Install.wim 所有索引号后并替换旧的 WinRE.wim
* Install.WinRE.Replace.wim.ps1
  + [\Expand\Install\Install.WinRE.Replace.wim.ps1](Expand/Install/Install.WinRE.Replace.wim.ps1)
  + <https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/23H2/Expand/Install/Install.WinRE.Replace.wim.ps1>
* 复制代码

Get-WindowsImage -ImagePath "D:\OS\_11\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\_11\sources\install.wim", $\_.ImageIndex,

"--command=""add 'D:\OS\_11\_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

}

##### 重建 Install.wim 后可缩小文件大小

* Install.Rebuild.wim.ps1
  + [\Expand\Install\Install.Rebuild.wim.ps1](Expand/Install/Install.Rebuild.wim.ps1)
  + <https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/23H2/Expand/Install/Install.Rebuild.wim.ps1>
* 复制代码

$InstallWim = "D:\OS\_11\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 Under reconstruction".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

}

##### 拆分、合并、压缩、互转

固实压缩为 ESD 文件格式，如果文件超过 4GB 时：无法使用拆分、无法复制到 FAT32 格式的磁盘，这是缺点。

使用 FAT32 格式存放 Windows 安装引导是最佳的解决方案，如果遇到 Install.wim 文件超过 4GB 时无法复制到 FAT32 格式的磁盘时，这时你需要将 Install.wim 拆分，小于 4GB 文件大小后才能复制到 FAT32 格式的磁盘里。

学会如何拆分和合并，固实压缩和互转，尤为重要。

###### 拆分和合并

* + 1. 拆分

将 Install.wim 拆分为 4GB 文件大小后，获得新的文件名 Install.\*.swm 后，删除旧的 Install.wim。

* Install.Split.ps1
* [\Expand\Install\Install.Split.ps1](Expand/Install/Install.Split.ps1)
* <https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/23H2/Expand/Install/Install.Split.ps1>
* 复制代码

Write-host "Split Install.wim into Install.\*.swm";

Write-host "Splitting" -NoNewline;

Split-WindowsImage -ImagePath "D:\OS\_11\sources\install.wim" -SplitImagePath "D:\OS\_11\sources\install.swm" -FileSize "4096" -CheckIntegrity -ErrorAction SilentlyContinue | Out-Null

Write-Host "Split Complete`n" -ForegroundColor Green

Write-host "`nVerify completion and delete old files"

if (Test-Path -Path "D:\OS\_11\sources\install.swm" -PathType leaf) {

Remove-Item -Path "D:\OS\_11\sources\install.wim"

Write-Host "Done" -ForegroundColor Green

} else {

Write-Host "Failed" -ForegroundColor Red

}

* + 1. 合并

把所有 Install.\*.swm 合并为 Install.wim 后，删除旧的 Install.\*.swm。

* Install.Merging.ps1
* [\Expand\Install\Install.Merging.ps1](Expand/Install/Install.Merging.ps1)
* <https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/23H2/Expand/Install/Install.Merging.ps1>
* 复制代码

Write-host "Merge all Install.\*.swm files into Install.wim";

Get-WindowsImage -ImagePath "D:\OS\_11\Sources\install.swm" -ErrorAction SilentlyContinue | ForEach-Object {

Write-Host "Image Name: " -NoNewline; Write-Host $\_.ImageName -ForegroundColor Yellow;

Write-Host "Index Number: " -NoNewline; Write-Host $\_.ImageIndex -ForegroundColor Yellow;

Write-Host "Exporting".PadRight(28) -NoNewline

dism /export-image /SourceImageFile:"D:\OS\_11\Sources\install.swm" /swmfile:"D:\OS\_11\sources\install\*.swm" /SourceIndex:"$($\_.ImageIndex)" /DestinationImageFile:"D:\OS\_11\Sources\install.wim" /Compress:"Max" /CheckIntegrity

Write-Host "Export Complete`n" -ForegroundColor Green

}

Write-host "`nVerify completion and delete old files"

if (Test-Path -Path "D:\OS\_11\Sources\install.wim" -PathType leaf) {

Get-ChildItem -Path "D:\OS\_11\sources" -Recurse -include "\*.swm" | ForEach-Object {

Write-Host "Delete: $($\_.Fullname)" -ForegroundColor Green

Remove-Item -Path $\_.Fullname

}

Write-Host "Done" -ForegroundColor Green

} else {

Write-Host "Falied" -ForegroundColor Green

}

###### 固实压缩 ESD 格式和互转 WIM 格式

* + 1. 固实压缩

固实压缩后可以编辑版本信息和应用文件等；不可以挂载映像等，获得新的文件 install.esd 后，删除旧的 Install.wim。

* Install.Compress.ps1
* [\Expand\Install\Install.Compress.ps1](Expand/Install/Install.Compress.ps1)
* <https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/23H2/Expand/Install/Install.Compress.ps1>
* 复制代码

Write-host "Solid compressed Install.wim";

Get-WindowsImage -ImagePath "D:\OS\_11\Sources\install.wim" -ErrorAction SilentlyContinue | ForEach-Object {

Write-Host "Image Name: " -NoNewline; Write-Host $\_.ImageName -ForegroundColor Yellow;

Write-Host "Index Number: " -NoNewline; Write-Host $\_.ImageIndex -ForegroundColor Yellow;

Write-Host "Compressing".PadRight(28) -NoNewline

dism /export-image /SourceImageFile:"D:\OS\_11\Sources\install.wim" /SourceIndex:"$($\_.ImageIndex)" /DestinationImageFile:"D:\OS\_11\Sources\install.esd" /Compress:recovery /CheckIntegrity

Write-Host "Compression completed`n" -ForegroundColor Green

}

Write-host "`nVerify completion and delete old files"

if (Test-Path -Path "D:\OS\_11\Sources\install.esd" -PathType leaf) {

Remove-Item -Path "D:\OS\_11\Sources\install.wim"

Write-Host "Done" -ForegroundColor Green

} else {

Write-Host "Falied" -ForegroundColor Green

}

* + 1. 压缩文件转换为 WIM 文件格式
* Install.Convert.ps1
* [\Expand\Install\Install.Convert.ps1](Expand/Install/Install.Convert.ps1)
* <https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/23H2/Expand/Install/Install.Convert.ps1>
* 复制代码

Write-host "Convert ESD to WIM";

Get-WindowsImage -ImagePath "D:\OS\_11\Sources\install.esd" -ErrorAction SilentlyContinue | ForEach-Object {

Write-Host "Image Name: " -NoNewline; Write-Host $\_.ImageName -ForegroundColor Yellow;

Write-Host "Index Number: " -NoNewline; Write-Host $\_.ImageIndex -ForegroundColor Yellow;

Write-Host "Exporting".PadRight(28) -NoNewline

try {

Export-WindowsImage -SourceImagePath "D:\OS\_11\Sources\install.esd" -SourceIndex $\_.ImageIndex -DestinationImagePath "D:\OS\_11\Sources\install.wim" -CompressionType "Max" -CheckIntegrity -ErrorAction SilentlyContinue | Out-Null

Write-Host "Done`n" -ForegroundColor Green

} catch {

Write-Host $\_ -ForegroundColor Yellow

Write-host "Falied`n" -ForegroundColor Red

}

}

Write-host "`nVerify completion and delete old files"

if (Test-Path -Path "D:\OS\_11\Sources\install.wim" -PathType leaf) {

Remove-Item -Path "D:\OS\_11\Sources\install.esd"

Write-Host "Done" -ForegroundColor Green

} else {

Write-Host "Falied" -ForegroundColor Green

}

#### 自定义封装：boot.wim

##### 查看 Boot.wim 文件信息

映像名称、映像描述、映像大小、架构、版本、索引号等；

$ViewFile = "D:\OS\_11\Sources\Boot.wim"

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

##### 指定挂载 Boot.wim 路径

New-Item -Path "D:\OS\_11\_Custom\Boot\Boot\Mount" -ItemType directory

##### 开始挂载 Boot.wim

默认索引号：2

Mount-WindowsImage -ImagePath "D:\OS\_11\sources\boot.wim" -Index "2" -Path "D:\OS\_11\_Custom\Boot\Boot\Mount"

##### 语言包

* 自动安装语言包：获取“组件：映像中已安装的所有包”后进行匹配，匹配到对应的名称后，再安装本地对应的语言包文件。
* 添加语言时，须对应不同的架构版本，未对应时，添加过程中报错等提示。

###### 语言包：添加

* Boot.Instl.lang.ps1
  + [\Expand\Boot\Boot.Instl.lang.ps1](Expand/Boot/Boot.Instl.lang.ps1)
  + <https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/23H2/Expand/Boot/Boot.Instl.lang.ps1>
* 复制代码

$Mount = "D:\OS\_11\_Custom\Boot\Boot\Mount"

$Sources = "D:\OS\_11\_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\_List = @(

@{ Match = "\*WinPE\*Setup\*Client\*Package\*"; File = "WINPE-SETUP-CLIENT\_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\_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

}

}

}

###### 脱机映像语言：更改

* + 1. 更改默认语言、区域设置和其他国际设置

区域标记：zh-CN

Dism /Image:"D:\OS\_11\_Custom\Boot\Boot\Mount" /Set-AllIntl:zh-CN

* + 1. 查看可用的语言设置

Dism /Image:"D:\OS\_11\_Custom\Boot\Boot\Mount" /Get-Intl

###### 组件：映像中已安装的所有包

* + 1. 查看

Get-WindowsPackage -Path "D:\OS\_11\_Custom\Boot\Boot\Mount" | Out-GridView

* + 1. 导出到 Csv

$SaveTo = "D:\OS\_11\_Custom\Boot\Boot\Report.Components.$(Get-Date -Format "yyyyMMddHHmmss").csv"

Get-WindowsPackage -Path "D:\OS\_11\_Custom\Boot\Boot\Mount" | Export-CSV -NoType -Path $SaveTo

Write-host $SaveTo -ForegroundColor Green

###### 语言包：修复

* + 1. 提取

打开：D:\OS\_11\_Custom\Install\Install\Language\Add\zh-CN\Microsoft-Windows-Client-Language-Pack\_x64\_zh-CN.cab，进入目录：Setup\sources\zh-cn\cli，复制以下文件到桌面：

* + - 1. arunres.dll.mui
      2. spwizres.dll.mui
      3. w32uires.dll.mui
    1. 复制

将提取的文件复制到：D:\OS\_11\_Custom\Boot\Boot\Mount\sources\zh-CN

###### 语言包：同步到 ISO 安装程序

Copy-Item -Path "D:\OS\_11\_Custom\Boot\Boot\Mount\sources\zh-CN" -Destination "D:\OS\_11\sources\zh-CN" -Recurse -Force

###### 重新生成 Lang.ini

重新生成后，可调整“安装界面”，选择“语言”时的顺序，打开 lang.ini，默认首选值 = 3，非默认值 = 2。

* + 1. 重新生成已挂载目录 lang.ini

重新生成的Lang.ini 文件位置：D:\OS\_11\_Custom\Boot\Boot\Mount\Sources\lang.ini

Dism /image:"D:\OS\_11\_Custom\Boot\Boot\Mount" /gen-langini /distribution:"D:\OS\_11\_Custom\Boot\Boot\Mount"

* + 1. 重新生成 lang.ini 后，同步到安装程序

重新生成的Lang.ini 文件位置：D:\OS\_11\Sources\lang.ini

Dism /image:"D:\OS\_11\_Custom\Boot\Boot\Mount" /gen-langini /distribution:"D:\OS\_11"

##### 累积更新

准备可用的累积更新文件，请更改示例文件名：KB\_Boot.cab

###### 添加

$KBPath = "D:\OS\_11\_Custom\Boot\Boot\Update\KB\_Boot.cab"

Add-WindowsPackage -Path "D:\OS\_11\_Custom\Boot\Boot\Mount" -PackagePath $KBPath

###### 删除

$KBPath = "D:\OS\_11\_Custom\Boot\Boot\Update\KB\_Boot.cab"

Remove-WindowsPackage -Path "D:\OS\_11\_Custom\Boot\Boot\Mount" -PackagePath $KBPath

###### 固化更新

固化后不可卸载，固化时将清理恢复映像并重置任何被取代的组件的基础。

Dism /image:"D:\OS\_11\_Custom\Boot\Boot\Mount" /cleanup-image /StartComponentCleanup /ResetBase

* + 1. 固化更新后清理组件

$Mount = "D:\OS\_11\_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

}

}

##### 驱动

##### [其它](#_自定义部署映像：boot.wim_1)

###### 绕过 TPM 安装时检查

* Boot.Bypass.TPM.ps1
  + [\Expand\Boot\Boot.Bypass.TPM.ps1](Expand/Boot/Boot.Bypass.TPM.ps1)
  + <https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/23H2/Expand/Boot/Boot.Bypass.TPM.ps1>
* 复制代码

$RegSystem = "D:\OS\_11\_Custom\Boot\Boot\Mount\Windows\System32\Config\SYSTEM"

$RandomGuid = [guid]::NewGuid()

Write-Host " HKLM:\$($RandomGuid)"

New-PSDrive -PSProvider Registry -Name OtherTasksTPM -Root HKLM -ErrorAction SilentlyContinue | Out-Null

Start-Process reg -ArgumentList "Load ""HKLM\$($RandomGuid)"" ""$($RegSystem)""" -Wait -WindowStyle Hidden -ErrorAction SilentlyContinue

New-Item "HKLM:\$($RandomGuid)\Setup\LabConfig" -force -ea SilentlyContinue | Out-Null

New-ItemProperty -LiteralPath "HKLM:\$($RandomGuid)\Setup\LabConfig" -Name "BypassCPUCheck" -Value 1 -PropertyType DWord -Force -ea SilentlyContinue | Out-Null

New-ItemProperty -LiteralPath "HKLM:\$($RandomGuid)\Setup\LabConfig" -Name "BypassStorageCheck" -Value 1 -PropertyType DWord -Force -ea SilentlyContinue | Out-Null

New-ItemProperty -LiteralPath "HKLM:\$($RandomGuid)\Setup\LabConfig" -Name "BypassRAMCheck" -Value 1 -PropertyType DWord -Force -ea SilentlyContinue | Out-Null

New-ItemProperty -LiteralPath "HKLM:\$($RandomGuid)\Setup\LabConfig" -Name "BypassTPMCheck" -Value 1 -PropertyType DWord -Force -ea SilentlyContinue | Out-Null

New-ItemProperty -LiteralPath "HKLM:\$($RandomGuid)\Setup\LabConfig" -Name "BypassSecureBootCheck" -Value 1 -PropertyType DWord -Force -ea SilentlyContinue | Out-Null

[gc]::collect()

Start-Process reg -ArgumentList "unload ""HKLM\$($RandomGuid)""" -Wait -WindowStyle Hidden -ErrorAction SilentlyContinue

Remove-PSDrive -Name OtherTasksTPM

##### 保存映像：Boot.wim

Save-WindowsImage -Path "D:\OS\_11\_Custom\Boot\Boot\Mount"

##### 卸载映像：Boot.wim

关闭所有可能正在访问映像中文件的应用程序，包括文件资源管理器。

Dismount-WindowsImage -Path "D:\OS\_11\_Custom\Boot\Boot\Mount" -Discard

#### 部署引擎

* + - * 了解“自动添加 Windows 系统已安装的语言”，学习：<https://github.com/ilikeyi/Multilingual>，如何下载：
      * 进入网站后，点击 “代码”，“下载压缩包”，下载完成后得到 main.zip 压缩包文件。
      * 前往 <https://github.com/ilikeyi/Multilingual/releases> 下载页面，选择可用版本：1.1.1.1，选择下载源代码格式：zip，下载完成后得到 Multilingual-1.1.1.1.zip 压缩包文件；
      * 将已下载的 main.zip 或 Multilingual-1.1.1.1.zip，解压到：D:\Multilingual-1.1.1.1，重命名：D:\Multilingual
      * 学习“[无人值守 Windows 安装参考](https://learn.microsoft.com/en-us/windows-hardware/customize/desktop/unattend/)”，通过无人值守来干预安装过程。

##### 添加方式

###### 添加到 ISO 安装介质

* + 1. 无人值守
       1. 添加到：[ISO]:\Autounattend.xml

引导 ISO 安装时，Autounattend.xml 干预 WinPE 安装程序。

复制 D:\Multilingual\\_Learn\Unattend\Mul.Unattend.xml 到 D:\OS\_11\Autounattend.xml

Copy-Item "D:\Multilingual\\_Learn\Unattend\Mul.Unattend.xml" -Destination "D:\OS\_11\Autounattend.xml" -Force

* + - 1. 添加到：[ISO]:\Sources\Unattend.xml

挂载或解压 ISO 时，运行 [ISO]:\Setup.exe 安装程序后，[ISO]:\Sources\Unattend.xml 将干预安装过程。

复制 D:\Multilingual\\_Learn\Unattend\Mul.Unattend.xml 到 D:\OS\_11\Sources\Unattend.xml

Copy-Item "D:\Multilingual\\_Learn\Unattend\Mul.Unattend.xml" -Destination "D:\OS\_11\Sources\Unattend.xml" -Force

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

安装过程中复制到系统盘里，复制到：{系统盘}:\Windows\Panther\unattend.xml

* + - * 1. 创建 $OEM$ 路径

New-Item -Path "D:\OS\_11\sources\`$OEM$\`$$\Panther" -ItemType Directory

* + - * 1. 复制

复制 D:\Multilingual\\_Learn\Unattend\Mul.Unattend.xml 到 D:\OS\_11\Sources\$OEM$\Panther\Unattend.xml

Copy-Item "D:\Multilingual\\_Learn\Unattend\Mul.Unattend.xml" -Destination "D:\OS\_11\sources\`$OEM$\`$$\Panther\Unattend.xml" -Force

* + 1. 部署引擎：添加

添加“自动添加 Windows 系统已安装的语言”到 D:\OS\_11\sources\$OEM$\$1\Yi\Engine 目录里。

* + - 1. 部署引擎：复制

复制 D:\Multilingual\Engine 到 D:\OS\_11\Sources\$OEM$\$1\Yi\Engine

Copy-Item "D:\Multilingual\Engine" -Destination "D:\OS\_11\sources\`$OEM$\`$1\Yi\Engine" -Recurse -Force

* + - 1. 部署引擎：自定义部署标记

$Flag = @(

"Is\_Mark\_Sync" # 允许全盘搜索并同步部署标记

# 先决部署

# "Auto\_Update" # 允许自动更新

# "Use\_UTF8" # Beta 版：使用 Unicode UTF-8 提供全球语言支持

"Disable\_Network\_Location\_Wizard" # 网络位置向导

"Disable\_Cleanup\_Appx\_Tasks" # Appx 清理维护任务

"Disable\_Cleanup\_On\_Demand\_Language" # 阻止清理未使用的按需功能语言包

"Disable\_Cleanup\_Unsed\_Language" # 阻止清理未使用的语言包

"Prerequisites\_Reboot" # 重新启动计算机

# 完成首次部署

# "Popup\_Engine" # 允许首次弹出部署引擎主界面

# "Allow\_First\_Pre\_Experience" # 允许首次预体验，按计划

"Reset\_Execution\_Policy" # 恢复 PowerShell 执行策略：受限

"Clear\_Solutions" # 删除整个解决方案

"Clear\_Engine" # 删除部署引擎，保留其它

# "First\_Experience\_Reboot" # 重新启动计算机

)

ForEach ($item in $Flag) {

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

New-Item -Path "D:\OS\_11\sources\`$OEM$\`$1\Yi\Engine\Deploy\Allow" -ItemType Directory -ErrorAction SilentlyContinue | Out-Null

Out-File -FilePath "D:\OS\_11\sources\`$OEM$\`$1\Yi\Engine\Deploy\Allow\$($item)" -Encoding utf8 -ErrorAction SilentlyContinue

}

###### 添加到已挂载

通过“[自定义封装：Install.wim](#_自定义封装：Install.wim)”，执行“[开始挂载 Install.wim](#_开始挂载_WinRE.wim)”，挂载到：D:\OS\_11\_Custom\Install\Install\Mount

* + 1. 无人值守

复制 D:\Multilingual\\_Learn\Unattend\Mul.Unattend.xml 到 D:\OS\_11\_Custom\Install\Install\Mount\Panther\Unattend.xml

Copy-Item "D:\Multilingual\\_Learn\Unattend\Mul.Unattend.xml" -Destination "D:\OS\_11\_Custom\Install\Install\Mount\Panther" -Force

* + 1. 部署引擎

添加“自动添加 Windows 系统已安装的语言”到 D:\OS\_11\_Custom\Install\Install\Mount\Yi\Engine 目录里。

* + - 1. 部署引擎：复制

复制 D:\Multilingual\Engine 到 D:\OS\_11\_Custom\Install\Install\Mount\Yi\Engine

Copy-Item "D:\Multilingual\Engine" -Destination "D:\OS\_11\_Custom\Install\Install\Mount\Yi\Engine" -Recurse -Force

* + - 1. 部署引擎：自定义部署标记

$Flag = @(

"Is\_Mark\_Sync" # 允许全盘搜索并同步部署标记

# 先决部署

# "Auto\_Update" # 允许自动更新

# "Use\_UTF8" # Beta 版：使用 Unicode UTF-8 提供全球语言支持

"Disable\_Network\_Location\_Wizard" # 网络位置向导

"Disable\_Cleanup\_Appx\_Tasks" # Appx 清理维护任务

"Disable\_Cleanup\_On\_Demand\_Language" # 阻止清理未使用的按需功能语言包

"Disable\_Cleanup\_Unsed\_Language" # 阻止清理未使用的语言包

"Prerequisites\_Reboot" # 重新启动计算机

# 完成首次部署

# "Popup\_Engine" # 允许首次弹出部署引擎主界面

# "Allow\_First\_Pre\_Experience" # 允许首次预体验，按计划

"Reset\_Execution\_Policy" # 恢复 PowerShell 执行策略：受限

"Clear\_Solutions" # 删除整个解决方案

"Clear\_Engine" # 删除部署引擎，保留其它

# "First\_Experience\_Reboot" # 重新启动计算机

)

ForEach ($item in $Flag) {

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

New-Item -Path "D:\OS\_11\_Custom\Install\Install\Mount\Yi\Engine\Deploy\Allow" -ItemType Directory -ErrorAction SilentlyContinue | Out-Null

Out-File -FilePath "D:\OS\_11\_Custom\Install\Install\Mount\Yi\Engine\Deploy\Allow\$($item)" -Encoding utf8 -ErrorAction SilentlyContinue

}

##### 部署引擎：进阶

###### 部署引擎：添加过程中

在复制部署引擎后，可添加部署标记来干预安装过程。

###### 无人值守方案

自定义无人值守时，以下文件存在时请同步修改：

* D:\OS\_11\Autounattend.xml
* D:\OS\_11\Sources\Unattend.xml
* D:\OS\_11\sources\$OEM$\$$\Panther\unattend.xml
* D:\OS\_11\_Custom\Install\Install\Mount\Panther\Unattend.xml
  + 1. 多语言或单语

多语言时，单语时，可互相切换，替换时，请替换文件里所有相同的。

* + - 1. 多语言

<UILanguage>%OSDUILanguage%</UILanguage>

<InputLocale>%OSDInputLocale%</InputLocale>

<SystemLocale>%OSDSystemLocale%</SystemLocale>

<UILanguage>%OSDUILanguage%</UILanguage>

<UILanguageFallback>%OSDUILanguageFallback%</UILanguageFallback>

<UserLocale>%OSDUserLocale%</UserLocale>

* + - 1. 单语

单语需指定区域，例如指定区域：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. 用户方案

默认使用自建用户Administrator 并自动登录，可通过修改以下配置切换：自建、自定义用户。

* + - 1. 自建用户 Administrator

默认使用自建用户：Administrator 并自动登录，插入到 <OOBE> 和 </OOBE> 之间。

<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. 自定义用户

设置自定义用户后，安装系统完成后，在 OOBE 里，可选择本地、在线用户等设置。

* + - * 1. 删除

用户名：从开始处删除 <UserAccounts> 到 </UserAccounts>

自动登录：从开始处删除 <AutoLogon> 到 </AutoLogon>

* + - * 1. 替换

从开始处 <OOBE> 到 </OOBE>

<OOBE>

<ProtectYourPC>3</ProtectYourPC>

<HideEULAPage>true</HideEULAPage>

<HideWirelessSetupInOOBE>true</HideWirelessSetupInOOBE>

</OOBE>

### ISO

#### 生成 ISO

1. 下载 OScdimg

根据架构选择 Oscdimg 版本，下载后保存到：D:\ ，保存在其它路径请输入 OScdimg.exe 绝对路径；

* 1. x64

<https://github.com/ilikeyi/Solutions/raw/refs/heads/main/_Encapsulation/Modules/AIO/Oscdimg/amd64/oscdimg.exe>

* 1. x86

<https://github.com/ilikeyi/Solutions/raw/refs/heads/main/_Encapsulation/Modules/AIO/Oscdimg/x86/oscdimg.exe>

* 1. arm64

<https://github.com/ilikeyi/Solutions/raw/refs/heads/main/_Encapsulation/Modules/AIO/Oscdimg/arm64/oscdimg.exe>

1. 使用 oscdimg命令行生成一个 ISO 文件，保存到：D:\Win11.iso

* ISO.ps1
  + [\Expand\ISO.ps1](Expand/ISO.ps1)
  + <https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/23H2/Expand/ISO.ps1>
* 复制代码

$Oscdimg = "D:\Oscdimg.exe"

$ISO = "D:\OS\_11"

$Volume = "OS\_11"

$SaveTo = "D:\OS\_11.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 -ArgumentList $Arguments -wait -nonewwindow

#### 绕过 TPM 安装检查

1. 了解 <https://github.com/AveYo/MediaCreationTool.bat/tree/main/bypass11> 并下载：Quick\_11\_iso\_esd\_wim\_TPM\_toggle.bat
2. 将 D:\OS\_11.iso 文件托到 Quick\_11\_iso\_esd\_wim\_TPM\_toggle.bat 里，反序“添加”或“删除”TPM 安装时检查功能。

## 常见问题

### 清理所有挂载到

关闭所有可能正在访问映像中文件的应用程序，包括文件资源管理器。

Dismount-WindowsImage -Path "D:\OS\_11\_Custom\Install\Install\Mount" -Discard

Dismount-WindowsImage -Path "D:\OS\_11\_Custom\Install\WinRE\Mount" -Discard

Dismount-WindowsImage -Path "D:\OS\_11\_Custom\Boot\Boot\Mount" -Discard

### 修复挂载出现异常的问题

1. 查看已挂载

Get-WindowsImage -Mounted

1. 删除保存在注册表里的 DISM 挂载记录

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

1. 删除与已损坏的已装载映像关联的所有资源。

Clear-WindowsCorruptMountPoint

Dism /cleanup-wim

### 清理

封装过程中会产生大量的临时文件，安装 InBox Apps 应用、安装累积更新、安装语言包时会临时释放安装文件，所以不定期清理过时的会长期占用大量的磁盘空间，建议您尝试以下方法来实现清理计划，以达到释放更多的空间：

1. 常见日志
   1. 使用命令行清理

$TempPaths = @( $env:Temp; "$($env:SystemRoot)\Logs\DISM"; )

foreach ($TempPath in $TempPaths) {

if (Test-Path -Path $TempPath) {

write-host " $($TempPath)" -ForegroundColor Green

Get-ChildItem -Path $TempPath -Recurse -Force | ForEach-Object {

try { Remove-Item $\_.FullName -Force -Recurse -ErrorAction SilentlyContinue | Out-Null } catch { write-host $\_ -ForegroundColor Red }

}

}

}

* 1. 手动删除
     1. DISM 日志

使用“磁盘清理”功能，无法清理 DISM 产生的日志，需手动删除，路径：{系统盘}:\Windows\Logs\DISM

* + 1. 临时目录

使用“磁盘清理”功能，无法清理临时目录的文件，需要手动操作，运行：%Temp% 可快速定位并打开临时目录，路径：{系统盘}:\Users\{用户名}\AppData\Local\Temp

* + 1. 清理“终端”运行的命令行记录

Remove-Item -Path (Get-PSReadlineOption).HistorySavePath -ErrorAction SilentlyContinue

执行清理命令行记录后，需重新启动“终端”生效。

1. 磁盘清理

运行 cleanmgr，选择要清理的磁盘和类型。

## 已知问题

暂无

Yi’ Solutions

此副本封装教程隶属于 Yi’s Solutions 内容，学习更多：

* Yi 的官方网站 | <https://fengyi.tel/solutions>
* Github | <https://github.com/ilikeyi/solutions>

作者：Yi

邮箱：[775159955@qq.com](mailto:775159955@qq.com), [ilikeyi@outlook.com](mailto:ilikeyi@outlook.com)

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文档最近更新日期：4 / 2025

建议或反馈：<https://github.com/ilikeyi/solutions/issues>