



YI'S SOLUTIONS

## MICROSOFT WINDOWS 10 22H2

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，你准备好开始尝试封装了吗？

[学习更多历史版本](#)

[https://github.com/ilikeyi/Solutions/tree/main/\\_Learn/Packaging.tutorial](https://github.com/ilikeyi/Solutions/tree/main/_Learn/Packaging.tutorial)

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## 章节 1 封装

## A. 先决条件

## I. 正在运行的系统

## 1. 检查正在运行的系统是否健康

检查正在运行的系统是否健康尤为重要，如果扫描后提示需要修复，向脱机映像添加累积更新和执行其它操作时会报错。如何检查，

运行：`sfc /scannow`

验证过程完成后，如果问题已发现并纠正，您将在命令提示符窗口中看到类似以下内容：

1.1. Windows 资源保护未发现任何完整性违规情况。

待处理：`无需修复。`

1.2. Windows 资源保护发现了损坏的文件，但无法修复其中一些文件。

待处理：`需要修复`，可使用以下命令尝试修复：

`Dism /Online /Cleanup-Image /CheckHealth`

`Dism /Online /Cleanup-Image /ScanHealth`

`dism /Online /Cleanup-Image /RestoreHealth`

注意：若遇到无法修复，请重新安装系统。

## 2. 使用 DISM 命令时

## 2.1. 学习 DISM 概述

<https://learn.microsoft.com/zh-cn/windows-hardware/manufacture/desktop/what-is-dism>

DISM 限制，使用 DISM 维护 Windows 映像时，管理员必须注意其固有的限制。其中之一是它不支持弹性文件系统 (ReFS)。

ReFS 是适用于 Windows Server 2022、Windows Server 2019、Windows Server 2016、Windows Server 2012 R2 和 Windows Server 2012 操作系统的全新文件系统。它可以高效地扩展到大型数据集，并提供比旧文件系统更高的数据可用性和性能。

**警告您，磁盘分区，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。**

正在运行的操作系统是 Windows 10 或者低于 Windows 11 25H2 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）
  - 可尝试升级到最新 PowerShell 7 以上的版本；
  - 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。

### 3. 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：

#### 3.1. 关闭 Windows 防病毒

- 开启 Windows 防病毒会扫描文件、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”。

3.1.1. 打开“Windows 安全”或运行：[windowsdefender](#):

3.1.2. 选择“病毒和威胁防护”或运行：[windowsdefender://threat](#)

3.1.3. 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：

3.1.3.1. 实时保护

3.1.3.2. 云提供的保护

3.1.3.3. 自动提交样本

3.1.3.4. 篡改防护

3.1.4. 未处于封装时，建议您开启 Windows 防病毒。

#### 3.2. 为你的电脑关闭 Device/Credential Guard

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，自微软更新 Windows 11

24H2 之后，每次全新安装或者更新都会启用 Device/Credential Guard（或者应该说是 VBS），这就会导致开了嵌套虚拟化的 VMware Workstation 和其它虚拟机软件无法正常使用，以及降速等。

但是，微软提供了一个名为 Device Guard and Credential Guard hardware readiness tool 工具来关闭 Device/Credential Guard，如何关闭：

#### 3.2.1. 下载 Device Guard and Credential Guard hardware readiness tool

打开连接：<https://www.microsoft.com/en-us/download/details.aspx?id=53337> 后点击下载按钮，下载后获得 `dgreadiness_v3.6.zip` 文件，解压到 C 盘（解压到其它位置请执行时替换路径）。

#### 3.2.2. 执行关闭命令

打开 `Terminal (终端)`，依次运行：

```
Set-ExecutionPolicy -ExecutionPolicy Bypass -Scope LocalMachine -Force  
C:\dgreadiness_v3.6\DG_Readiness_Tool_v3.6.ps1 -Disable
```

#### 3.2.3. 运行后，重新启动计算机

重启后 Windows 会进入 `Credential Guard Opt-out Tool`，此时按下 `Windows` 键或 `F3` 后再按下回车即可继续。

#### 3.2.4. 查看状态

重新启动计算机后，运行 `Msinfo32`，在系统摘要查看“基于虚拟化的安全”状态，或运行后查看状态：

```
C:\dgreadiness_v3.6\DG_Readiness_Tool_v3.6.ps1 -Ready
```

#### 3.2.5. 如何恢复

运行命令行后重新启动计算机生效。

```
C:\dgreadiness_v3.6\DG_Readiness_Tool_v3.6.ps1 -Enable
```

使用 Device Guard and Credential Guard hardware readiness tool 工具无法关闭，或者尝试使用雷电模拟器的工具：

<https://res.ldmnq.com/test/HyperV-off.exe>，下载后以管理员身份运行，完成后重新启动计算机。

### 3.3. 开启 Windows 原生 NVMe 存储堆栈

阅读微软官方新闻：[Windows Server 2025 正式推出原生 NVMe：开启存储性能新时代](#)

开启 Windows 原生 NVMe 存储堆栈，获取至高约 80% 的 IOPS 性能暴涨，如果使用的 NVMe 硬盘，建议您开启此项，开启前需

要满足：Windows server 2025 和 Windows 11 26100.6899 / 26200.6899 以上，该特征仅对 NVMe SSD 生效，请查看当前硬盘是否满足。

启用步骤：

3.3.1. 确保当前使用的存储控制器为 Windows 自带的标准 NVM Express 控制器，如目前正在使用其他非 Windows 自带的驱动，建议卸载。

3.3.2. 确保当前使用的操作系统版本号为 [26100.6899 / 26200.6899](#) 或更高的版本

3.3.3. 以下两种方式（来自微软官方，本质上操作相同，二选一即可）

3.3.3.1. 运行 PowerShell（管理员），执行以下命令，重启电脑

```
reg add HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Policies\Microsoft\FeatureManagement\Overrides /v 1176759950 /t REG_DWORD /d 1 /f
```

3.3.3.2. 或下载解压并安装以下组策略 MSI 文件，将其设为已启用，重启电脑

[https://download.microsoft.com/download/123547b0-bff7-419d-96ba-d1cfec92f442/Windows%2011%2024H2,%20Windows%2011%2025H2%20and%20Windows%20Server%202020%20KB5066835%20251014\\_21251%20Feature%20Preview.msi](https://download.microsoft.com/download/123547b0-bff7-419d-96ba-d1cfec92f442/Windows%2011%2024H2,%20Windows%2011%2025H2%20and%20Windows%20Server%202020%20KB5066835%20251014_21251%20Feature%20Preview.msi)

安装后位于：组策略 > 计算机配置 > 管理模板 > KB5066835 251014\_21251 Feature Preview > Windows 11, version 24H2, 25H2

3.3.4. Windows 11 开启方式相对 Windows Server 有所不同，还需在 PowerShell（管理员）添加并执行以下命令：

```
reg add HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Policies\Microsoft\FeatureManagement\Overrides /v 1853569164 /t REG_DWORD /d 1 /f
```

```
reg add HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Policies\Microsoft\FeatureManagement\Overrides /v 156965516 /t REG_DWORD /d 1 /f
```

```
reg add HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Policies\Microsoft\FeatureManagement\Overrides /v 735209102 /t REG_DWORD /d 1 /f
```

3.3.5. 若已使用上述命令并重启电脑后依旧无法开启，也可用 ViveTool 命令强制开启

需要 [ViveTool](#)，前往：<https://github.com/thebookisclosed/ViVe/releases> 下载，下载完成后运行：

```
vivetool.exe /enable /id:48433719,49453572,5536923
```

28020 以上还需要运行：[vivetool.exe /enable /id:48613417](#)

3.3.6. 解决无法进入安全模式

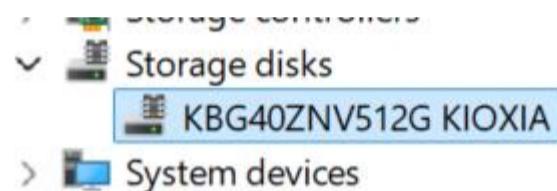
Windows 安全模式默认不加载此 NVMe 驱动，故还需执行以下命令使其加载，生效后安全模式即可正常使用

```
reg add HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\SafeBoot\Minimal\{75416E63-5912-4DFA-AE8F-3EFACCAFFB14}
```

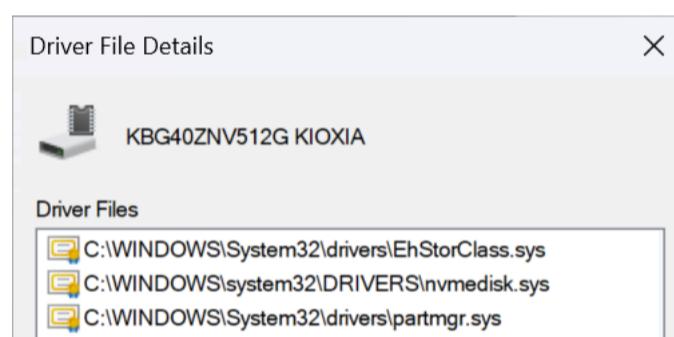
```
reg add HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\SafeBoot\Network\{75416E63-5912-4DFA-AE8F-3EFACCAFFB14}
```

### 3.3.7. 检查该特性是否成功开启的方式与关闭方法

3.3.7.1. 成功开启 Windows 原生 NVMe 模式后，你的 NVMe SSD 在设备管理器中将被归类到全新的 存储磁盘 路径下，如图：



3.3.7.2. 成功开启 Windows 原生 NVMe 模式后，在设备管理器中，右键你的 NVMe SSD 选择属性，驱动程序 > 驱动程序详细信息，会看到驱动程序文件会包含全新的 nvmedisk.sys，如图：



### 3.3.7.3. 关闭方法

运行：`regedit`（注册表编辑器），进入

HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Policies\Microsoft\FeatureManagement\Overrides 路径，将  
1176759950、156965516、1853569164、735209102 四个键值改为 0 或直接删除，重启电脑即可。

用 Vivetool 开启的 `vivetool.exe /disable /id:48433719,49453572,5536923`

28020 以上还需要运行：`vivetool.exe /disable /id:48613417`

## 4. 禁用常见文件类型安全警告

- 为什么关闭？选择任意一个 ISO 文件操作时，会弹出“安全警告”，很烦。
- “添加”和“恢复默认策略”后记得“重新启动 Explorer.exe 进程”并立即生效。

## 4.1. 如何添加

## 4.1.1. 第一步，选择规则

提供了常见的文件类型规则和仅 \*.ISO 规则：

## 4.1.1.1. 常见文件类型规则

```
$SafetyWarningsExclude = ".exe;.reg;.msi;.bat;.cmd;.com;.vbs;.hta;.scr;.pif;.js;.iso;"
```

## 4.1.1.2. 仅 .iso 规则

```
$SafetyWarningsExclude = ".iso;"
```

## 4.1.2. 第二步，添加到系统策略

```
if ((Test-Path -LiteralPath "HKCU:\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\Associations") -ne $true) { New-Item "HKCU:\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\Associations" -force -ErrorAction SilentlyContinue | Out-Null; New-ItemProperty -LiteralPath 'HKCU:\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\Associations' -Name 'LowRiskFileTypes' -Value $SafetyWarningsExclude -PropertyType String -force -ErrorAction SilentlyContinue | Out-Null
```

## 4.2. 如何恢复默认策略

```
Remove-Item -Path "HKCU:\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\Associations" -Force -Recurse -ErrorAction SilentlyContinue | Out-Null
```

## 4.3. 重新启动 Explorer.exe 进程并立即生效

```
Stop-Process -ProcessName explorer -force -ErrorAction SilentlyContinue; Start-Sleep 5; $Running = Get-Process explorer -ErrorAction SilentlyContinue; if (-not ($Running)) { Start-Process "explorer.exe" }
```

## 5. 虚拟闪存盘

内存盘是什么？内存盘也被称为虚拟内存盘，它是一种可以提高电脑内存和文件快速访问的技术。但是内存盘会导致电脑在关闭之后会出现数据丢失，内存盘是比较不安全的一种设置。

虽然如此，但是我不这样认为，在封装过程中会频繁的释放安装包文件、生成日志等，挂载到虚拟盘时，这有很多好处，快速格式化。

添加语言包、添加累积更新、添加 InBox Apps 时，安装包存放于内存虚拟盘里，这样会占用大量的内存，建议您存放于非虚拟内存盘。

## 5.1. 软件推荐

5.1.1. Ultra RAMDisk | <http://ultraramdisk.com>

- 5.1.2. ImDisk | <https://sourceforge.net/projects/imdisk-toolkit>
- 5.1.3. AMD Radeon RAMDisk | <http://www.radeonramdisk.com>
- 5.1.4. Primo Ramdisk | <https://www.romexsoftware.com/en-us/primo-ramdisk/index.html>
- 5.1.5. SoftPerfect RAM Disk | <https://www.softperfect.com/products/ramdisk>
- 5.1.6. StarWind RAM Disk | <https://www.starwindsoftware.com/high-performance-ram-disk-emulator>

## 5.2. 如何创建

创建内存盘时应计算物理内存未使用率，打开“任务管理器”，“性能”，查看内存剩余率，建议：

- 5.3. 物理内存 16G，系统剩余 10G 时，建议划分：6G 内存 + 40G 交换文件，保留剩余内存 4G 以上；
- 5.4. 物理内存 32G：系统剩余 26G 时，建议划分：20 内存 + 40G 交换文件，保留剩余内存 6G 以上；
- 5.5. 物理内存 64G：系统剩余 54G 时，仅划分 40G 内存，无需创建交换文件，保留剩余内存 8G 以上；
- 5.6. 物理内存 128G：系统剩余 115G 时，划分 40 内存之间，无需创建交换文件。

注意：内存不足时会导致在封装过程中出现问题。

## 6. ISO 工具

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

## 7. 压缩软件

准备一款常用的压缩软件：7-Zip、WinRAR 或其它，推荐您下载 7-Zip 并安装，根据架构选择下载：

- 7.1. 7zip
  - x64: <https://www.7-zip.org/a/7z2501-x64.exe>
  - x86: <https://www.7-zip.org/a/7z2501.exe>
  - arm64: <https://www.7-zip.org/a/7z2501-arm64.exe>

## 8. 命令行

- 8.1. 可选“Terminal”或“PowerShell ISE”，未安装“Terminal”，请前往 <https://github.com/microsoft/terminal/releases> 后下载；
- 8.2. 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 -Scope LocalMachine -Force
```

- 8.3. 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；
- 8.4. 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"

## II. 要求

### 1. 系统安装包

关键词：迭代、跨版本、大版本、累积更新、初始版本

#### 1.1. 说明

1.1.1. 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；

1.1.2. 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；

1.1.3. 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，后来这句话在官方文档里却被删除了；

1.1.4. 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。

1.1.5. 进化过程：Microsoft Windows 10 22H2, Build 19045.2006 +

- 功能启用包 (KB5015684) +
- 服务堆栈更新 (SSU) + 累积更新 (KB5066791)

= OS Build 19045.6465

#### 1.2. 准备下载初始版本或开发者版本

1.2.1. x64

1.2.1.1. 文件名：en-us\_windows\_10\_consumer\_editions\_version\_22h2\_x64\_dvd\_8da72ab3.iso

文件列表：<https://files.rg-adguard.net/file/cbafa23b-cef5-6401-d0e2-da1533785c71>

1.2.1.2. 文件名：en-us\_windows\_10\_business\_editions\_version\_22h2\_x64\_dvd\_8cf17b79.iso

文件列表：<https://files.rg-adguard.net/file/b4901318-96a5-3755-c26d-c8cb5c816092>

1.2.1.3. 文件名：en-us\_windows\_10\_consumer\_editions\_version\_22h2\_x64\_dvd\_8da72ab3.iso

文件列表: <https://files.rg-adguard.net/file/cbafa23b-cef5-6401-d0e2-da1533785c71>

1.2.1.4. 文件名: en-us\_windows\_10\_iot\_enterprise\_version\_22h2\_x64\_dvd\_51cc370f.iso

文件列表: <https://files.rg-adguard.net/file/8fe3555c-9e65-138a-e204-53e90c57c20d>

1.2.1.5. 文件名: en-us\_windows\_10\_iot\_enterprise\_version\_22h2\_x64\_dvd\_51cc370f.iso

文件列表: <https://files.rg-adguard.net/file/19a36b7b-269b-ebf8-105b-a375f70b7ae2>

1.2.1.6. 文件名: en-us\_windows\_10\_iot\_enterprise\_ltsc\_2021\_x64\_dvd\_257ad90f.iso

文件列表: <https://files.rg-adguard.net/file/d4af271c-9bfb-7457-fba3-b600a921d9cc>

1.2.2. x86

1.2.2.1. 文件名: en-us\_windows\_10\_consumer\_editions\_version\_22h2\_x86\_dvd\_90883feb.iso

文件列表: <https://files.rg-adguard.net/file/09710916-5ec1-9526-f67e-87ab8c929be4>

1.2.2.2. 文件名: en-us\_windows\_10\_business\_editions\_version\_22h2\_x86\_dvd\_186a68c3.iso

文件列表: <https://files.rg-adguard.net/file/19fd5653-1ca5-2160-7572-7e3313babacf>

1.2.2.3. 文件名: en-us\_windows\_10\_enterprise\_ltsc\_2021\_x86\_dvd\_9f4aa95f.iso

文件列表: <https://files.rg-adguard.net/file/dad92dcf-222d-c6ca-ebe2-3e12c6bcb22b>

1.2.3. arm64

1.2.3.1. 文件名: en-us\_windows\_10\_iot\_enterprise\_version\_22h2\_arm64\_dvd\_39566b6b.iso

文件列表: <https://files.rg-adguard.net/file/5f90028e-6a65-3ece-5b90-7c7e30f0fad>

1.2.3.2. 文件名: en-us\_windows\_10\_iot\_enterprise\_ltsc\_2021\_arm64\_dvd\_e8d4fc46.iso

文件列表: <https://files.rg-adguard.net/file/a9e8ed40-8540-f309-0065-b9060cbd47ac>

1.3. 示例下载 en-us\_windows\_10\_consumer\_editions\_version\_22h2\_x64\_dvd\_8da72ab3.iso 后, 解压到: D:\en-us\_windows\_10\_consumer\_editions\_version\_22h2\_x64\_dvd\_8da72ab3

**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。

1.4. 解压完成后，将目录 D:\en-us\_windows\_10\_consumer\_editions\_version\_22h2\_x64\_dvd\_8da72ab3 更改为 D:\ISOTEMP

1.5. 如何合并多个映像版本？合并建议：

1.5.1. 下载 en-us\_windows\_10\_business\_editions\_version\_22h2\_x64\_dvd\_8cf17b79.iso 后，选择此文件后“双击”或点右键“挂载”，例如挂载盘符为 E:\（如果不是请替换），建议添加索引号：3、4，添加命令：

```
Export-WindowsImage -SourceImagePath "E:\sources\install.wim" -SourceIndex 3 -DestinationImagePath  
"D:\ISOTEMP\sources\install.wim" -CompressionType Max -CheckIntegrity
```

```
Export-WindowsImage -SourceImagePath "E:\sources\install.wim" -SourceIndex 4 -DestinationImagePath  
"D:\ISOTEMP\sources\install.wim" -CompressionType Max -CheckIntegrity
```

1.5.2. 下载 en-us\_windows\_10\_iot\_enterprise\_version\_22h2\_x64\_dvd\_51cc370f.iso 后，选择此文件后“双击”或点右键“挂载”，例如挂载盘符为 F:\（如果不是请替换），建议添加索引号：2，添加命令：

```
Export-WindowsImage -SourceImagePath "F:\sources\install.wim" -SourceIndex 2 -DestinationImagePath  
"D:\ISOTEMP\sources\install.wim" -CompressionType Max -CheckIntegrity
```

1.5.3. 下载 en-us\_windows\_10\_enterprise\_ltsc\_2021\_x64\_dvd\_d289cf96.iso 后，选择此文件后“双击”或点右键“挂载”，例如挂载盘符为 G:\（如果不是请替换），建议全部添加，已知索引号：1、2，添加命令：

```
Export-WindowsImage -SourceImagePath "G:\sources\install.wim" -SourceIndex 1 -DestinationImagePath  
"D:\ISOTEMP\sources\install.wim" -CompressionType Max -CheckIntegrity
```

```
Export-WindowsImage -SourceImagePath "G:\sources\install.wim" -SourceIndex 2 -DestinationImagePath  
"D:\ISOTEMP\sources\install.wim" -CompressionType Max -CheckIntegrity
```

1.5.4. 下载 en-us\_windows\_10\_iot\_enterprise\_ltsc\_2021\_x64\_dvd\_257ad90f.iso 后，选择此文件后“双击”或点右键“挂载”，例如挂载盘符为 H:\（如果不是请替换），建议添加索引号：2，添加命令：

```
Export-WindowsImage -SourceImagePath "H:\sources\install.wim" -SourceIndex 2 -DestinationImagePath  
"D:\ISOTEMP\sources\install.wim" -CompressionType Max -CheckIntegrity
```

注意：合并多映像版本时，必须添加 Ei.Cfg

1.6. 安装配置

1.6.1. 学习：Windows 安装版配置和产品 ID 文件（Ei.cfg 和 PID.txt）

1.6.2. 已知问题

1.6.2.1. 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。

1.6.2.2. 如何解决，添加 [ei.cfg](#) 到 [D:\ISOTEMP\Sources](#) 里，创建 [ei.cfg](#)：

```
@"  
[Channel]  
volume  
  
[VL]  
1  
"@ | Out-File -FilePath "D:\ISOTEMP\sources\EI.CFG" -Encoding Ascii
```

1.7. 所有脚本、所有路径，已默认设置为 [D:\ISOTEMP](#) 为映像来源。

## 2. 语言包

### 2.1. 学习

阅读时，请了解“蓝色”重要突出部分。

#### 2.1.1. [语言概述](#)

#### 2.1.2. [将语言添加到 Windows 10 映像](#)

#### 2.1.3. [语言和区域按需功能 \(FOD\)](#)

##### 2.1.3.1. [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”](#)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](#)

##### 2.1.3.2. [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：

- 2.1.3.2.1. 区域: ar-sa, 可选关联区域: en-US, 关联安装包:  
Microsoft-Windows-LanguageFeatures-Basic-es-us-Package~\*~.cab  
Microsoft-Windows-LanguageFeatures-OCR-en-us-Package~\*~.cab
- 2.1.3.2.2. 区域: bg-bg, 可选关联区域: en-US, 关联安装包:  
Microsoft-Windows-LanguageFeatures-Basic-es-us-Package~\*~.cab  
Microsoft-Windows-LanguageFeatures-OCR-en-us-Package~\*~.cab
- 2.1.3.2.3. 区域: da-dk, 可选关联区域: en-US, 关联安装包:  
Microsoft-Windows-LanguageFeatures-Basic-es-us-Package~\*~.cab  
Microsoft-Windows-LanguageFeatures-OCR-en-us-Package~\*~.cab
- 2.1.3.2.4. 区域: el-gr, 可选关联区域: en-US, 关联安装包:  
Microsoft-Windows-LanguageFeatures-Basic-es-us-Package~\*~.cab  
Microsoft-Windows-LanguageFeatures-OCR-en-us-Package~\*~.cab
- 2.1.3.2.5. 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~\*~.cab  
Microsoft-Windows-LanguageFeatures-OCR-en-us-Package~\*~.cab  
Microsoft-Windows-LanguageFeatures-Basic-fr-fr-Package~\*~.cab  
Microsoft-Windows-LanguageFeatures-Handwriting-fi-fi-Package~\*~.cab
- 2.1.3.2.6. 区域: he-il, 可选关联区域: en-US, 关联安装包:  
Microsoft-Windows-LanguageFeatures-Basic-es-us-Package~\*~.cab  
Microsoft-Windows-LanguageFeatures-OCR-en-us-Package~\*~.cab
- 2.1.3.2.7. 区域: ru-ru, 可选关联区域: en-US, 关联安装包:  
Microsoft-Windows-LanguageFeatures-Basic-es-us-Package~\*~.cab  
Microsoft-Windows-LanguageFeatures-OCR-en-us-Package~\*~.cab
- 2.1.3.2.8. 区域: th-th, 可选关联区域: en-US, 关联安装包:  
Microsoft-Windows-LanguageFeatures-Basic-es-us-Package~\*~.cab

Microsoft-Windows-LanguageFeatures-OCR-en-us-Package~\*~.cab

2.1.3.2.9. 区域: [uk-ua](#), 可选关联区域: [en-US](#), 关联安装包:

Microsoft-Windows-LanguageFeatures-Basic-es-us-Package~\*~.cab

Microsoft-Windows-LanguageFeatures-OCR-en-us-Package~\*~.cab

2.1.3.2.10. 区域: [zh-TW](#), 可选关联区域: [zh-HK](#), 关联安装包:

Microsoft-Windows-LanguageFeatures-Basic-zh-hk-Package~\*~.cab

Microsoft-Windows-LanguageFeatures-Speech-zh-hk-Package~\*~.cab

Microsoft-Windows-LanguageFeatures-TextToSpeech-zh-hk-Package~\*~.cab

2.1.3.3. 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”。

2.1.3.3.1. 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 10 里并未发现原版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。

2.2. 语言包: 下载

2.2.1. x64, x86

2.2.1.1. 文件名: [https://software-download.microsoft.com/download/pr/19041.1.191206-1406.vb\\_release\\_CLIENTLANGPACKDVD\\_OEM\\_MULTI.iso](https://software-download.microsoft.com/download/pr/19041.1.191206-1406.vb_release_CLIENTLANGPACKDVD_OEM_MULTI.iso)

文件列表: <https://files.rg-adguard.net/file/5a38c0c8-036a-e4e8-fa4a-c1d3ecd073d6>

2.3. 功能包: 下载

2.3.1. ARM64

2.3.1.1. 文件名: [https://software-static.download.prss.microsoft.com/pr/download/19041.1.191206-1406.vb\\_release\\_arm64fre\\_FOD-PACKAGES\\_OEM\\_PT1\\_arm64fre\\_MULTI.iso](https://software-static.download.prss.microsoft.com/pr/download/19041.1.191206-1406.vb_release_arm64fre_FOD-PACKAGES_OEM_PT1_arm64fre_MULTI.iso)

文件列表:

2.3.2. X64

2.3.2.1. 文件名: [https://software-download.microsoft.com/download/pr/19041.1.191206-1406.vb\\_release\\_amd64fre\\_FOD-PACKAGES\\_OEM\\_PT1\\_amd64fre\\_MULTI.iso](https://software-download.microsoft.com/download/pr/19041.1.191206-1406.vb_release_amd64fre_FOD-PACKAGES_OEM_PT1_amd64fre_MULTI.iso)

文件列表: <https://files.rg-adguard.net/file/16fccb80-0d4c-3d94-2a7c-b0bf020f6422>

2.3.3. X86

2.3.3.1. 文件名: [https://software-static.download.prss.microsoft.com/pr/download/19041.1.191206-1406.vb\\_release\\_x86fre\\_FOD-PACKAGES\\_OEM\\_PT1\\_x86fre\\_MULTI.iso](https://software-static.download.prss.microsoft.com/pr/download/19041.1.191206-1406.vb_release_x86fre_FOD-PACKAGES_OEM_PT1_x86fre_MULTI.iso)

文件列表: <https://files.rg-adguard.net/file/7758afd0-e097-e9f3-86ee-ebef4deff834>

### 3. InBox Apps

3.1. 下载: [https://software-static.download.prss.microsoft.com/dbazure/888969d5-f34g-4e03-ac9d-1f9786c66749/19041.3031.230508-1728.vb\\_release\\_svc\\_prod3\\_amd64fre\\_InboxApps.iso](https://software-static.download.prss.microsoft.com/dbazure/888969d5-f34g-4e03-ac9d-1f9786c66749/19041.3031.230508-1728.vb_release_svc_prod3_amd64fre_InboxApps.iso)

因版本和无法运行等问题，待替换安装包文件: Microsoft.WindowsMaps、Microsoft.Wallet、Microsoft.BingWeather

#### 3.2. 从 Github 网站下载

##### 3.2.1. Microsoft.BingWeather

3.2.1.1. [https://github.com/ilkeyi/Solutions/raw/refs/heads/main/\\_Learn/Download.Package/Windows.10.22H2/x64/Microsoft.BingWeather\\_8wekyb3d8bbwe.appxbundle](https://github.com/ilkeyi/Solutions/raw/refs/heads/main/_Learn/Download.Package/Windows.10.22H2/x64/Microsoft.BingWeather_8wekyb3d8bbwe.appxbundle)

3.2.1.2. [https://github.com/ilkeyi/Solutions/raw/refs/heads/main/\\_Learn/Download.Package/Windows.10.22H2/x64/Microsoft.BingWeather\\_8wekyb3d8bbwe.xml](https://github.com/ilkeyi/Solutions/raw/refs/heads/main/_Learn/Download.Package/Windows.10.22H2/x64/Microsoft.BingWeather_8wekyb3d8bbwe.xml)

##### 3.2.2. Microsoft.Wallet

3.2.2.1. [https://github.com/ilkeyi/Solutions/raw/refs/heads/main/\\_Learn/Download.Package/Windows.10.22H2/x64/Microsoft.Wallet\\_8wekyb3d8bbwe.appxbundle](https://github.com/ilkeyi/Solutions/raw/refs/heads/main/_Learn/Download.Package/Windows.10.22H2/x64/Microsoft.Wallet_8wekyb3d8bbwe.appxbundle)

3.2.2.2. [https://github.com/ilkeyi/Solutions/raw/refs/heads/main/\\_Learn/Download.Package/Windows.10.22H2/x64/Microsoft.Wallet\\_8wekyb3d8bbwe.xml](https://github.com/ilkeyi/Solutions/raw/refs/heads/main/_Learn/Download.Package/Windows.10.22H2/x64/Microsoft.Wallet_8wekyb3d8bbwe.xml)

##### 3.2.3. Microsoft.WindowsMaps

3.2.3.1. [https://github.com/ilkeyi/Solutions/raw/refs/heads/main/\\_Learn/Download.Package/Windows.10.22H2/x64/Microsoft.WindowsMaps\\_8wekyb3d8bbwe.appxbundle](https://github.com/ilkeyi/Solutions/raw/refs/heads/main/_Learn/Download.Package/Windows.10.22H2/x64/Microsoft.WindowsMaps_8wekyb3d8bbwe.appxbundle)

3.2.3.2. [https://github.com/ilikeyi/Solutions/raw/refs/heads/main/\\_Learn/Download.Package/Windows.10.22H2/x64/Microsoft.WindowsMaps\\_8wekyb3d8bbwe.xml](https://github.com/ilikeyi/Solutions/raw/refs/heads/main/_Learn/Download.Package/Windows.10.22H2/x64/Microsoft.WindowsMaps_8wekyb3d8bbwe.xml)

3.3. 下载：[https://software-download.microsoft.com/download/pr/19041.1.191206-1406.vb\\_release\\_amd64fre\\_InboxApps.iso](https://software-download.microsoft.com/download/pr/19041.1.191206-1406.vb_release_amd64fre_InboxApps.iso) 后“挂载映像”或“使用 ISO 工具打开浏览”，选择架构目录后，找到并保存：

3.3.1. Microsoft.BingWeather

3.3.1.1. Microsoft.BingWeather\_8wekyb3d8bbwe.appxbundle

3.3.1.2. Microsoft.BingWeather\_8wekyb3d8bbwe.xml

3.3.2. Microsoft.Wallet

3.3.2.1. Microsoft.Wallet\_8wekyb3d8bbwe.appxbundle

3.3.2.2. Microsoft.Wallet\_8wekyb3d8bbwe.xml

3.3.3. Microsoft.WindowsMaps

3.3.3.1. Microsoft.WindowsMaps\_8wekyb3d8bbwe.appxbundle

3.3.3.2. Microsoft.WindowsMaps\_8wekyb3d8bbwe.xml

3.4. 使用 ISO 编辑工具，编辑 [19041.3031.230508-1728.vb\\_release\\_svc\\_prod3\\_amd64fre\\_InboxApps.iso](19041.3031.230508-1728.vb_release_svc_prod3_amd64fre_InboxApps.iso)，将已提取文件添加到 [ISO]\{架构} 目录里；

## B. 语言包：提取

### I. 语言包：准备

#### 1. 语言包：挂载

挂载 [19041.1.191206-1406.vb\\_release\\_CLIENTLANGPACKDVD\\_OEM\\_MULTI.iso](19041.1.191206-1406.vb_release_CLIENTLANGPACKDVD_OEM_MULTI.iso) 或解压到任意位置；

#### 2. 功能包：挂载

请正确选择架构版本，提取错误的语言包，安装会报错误。

ARM64: [19041.1.191206-1406.vb\\_release\\_arm64fre\\_FOD-PACKAGES\\_OEM\\_PT1\\_arm64fre\\_MULTI.iso](19041.1.191206-1406.vb_release_arm64fre_FOD-PACKAGES_OEM_PT1_arm64fre_MULTI.iso)

X64: [19041.1.191206-1406.vb\\_release\\_amd64fre\\_FOD-PACKAGES\\_OEM\\_PT1\\_amd64fre\\_MULTI.iso](19041.1.191206-1406.vb_release_amd64fre_FOD-PACKAGES_OEM_PT1_amd64fre_MULTI.iso)

X86: [19041.1.191206-1406.vb\\_release\\_x86fre\\_FOD-PACKAGES\\_OEM\\_PT1\\_x86fre\\_MULTI.iso](19041.1.191206-1406.vb_release_x86fre_FOD-PACKAGES_OEM_PT1_x86fre_MULTI.iso)

### II. 语言包：提取方案

## 1. 添加

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

## 2. 删除

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

## 3. 架构: x64

## III. 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
  - [https://github.com/ilikeyi/solutions/blob/main/\\_Learn/Packaging.tutorial/OS.10/22H2/Expand/Extract.ps1](https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.10/22H2/Expand/Extract.ps1)
- 复制代码

```
$ISO = "Auto"; $SaveTo = "D:\ISOTEMP_Custom";

Function Extract_Language {
    param($NewArch, $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 = "Lao"; }
            @{
                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 = @("Microsoft-Windows-LanguageFeatures-Fonts-{DiyLang}-Package~31bf3856ad364e35~AMD64~~.cab"; "{ARCHC}\langpacks\Microsoft-Windows-Client-Language-Pack_x64_{Lang}.cab"; "Microsoft-Windows-LanguageFeatures-Basic-{Lang}-Package~31bf3856ad364e35~AMD64~~.cab"; "Microsoft-Windows-LanguageFeatures-Handwriting-{Lang}-Package~31bf3856ad364e35~AMD64~~.cab"; "Microsoft-Windows-LanguageFeatures-OCR-{Lang}-Package~31bf3856ad364e35~AMD64~~.cab"; "Microsoft-Windows-LanguageFeatures-Speech-{Lang}-Package~31bf3856ad364e35~AMD64~~.cab"; "Microsoft-Windows-LanguageFeatures-TextToSpeech-{Lang}-Package~31bf3856ad364e35~AMD64~~.cab"; "Microsoft-Windows-InternetExplorer-Optional-Package~31bf3856ad364e35~AMD64~{Lang}~.cab"; "Microsoft-Windows-MSPaint-FoD-Package~31bf3856ad364e35~wow64~{Lang}~.cab"; "Microsoft-Windows-MSPaint-FoD-Package~31bf3856ad364e35~{ARCH}~{Lang}~.cab"; "Microsoft-Windows-Notepad-FoD-Package~31bf3856ad364e35~{ARCH}~{Lang}~.cab"; "Microsoft-Windows-Notepad-FoD-Package~31bf3856ad364e35~wow64~{Lang}~.cab"; "Microsoft-Windows-PowerShell-ISE-FOD-Package~31bf3856ad364e35~AMD64~{Lang}~.cab"; "Microsoft-Windows-PowerShell-ISE-FOD-Package~31bf3856ad364e35~wow64~{Lang}~.cab"; "Microsoft-Windows-Printing-PMCPPC-FoD-Package~31bf3856ad364e35~AMD64~{Lang}~.cab"; "Microsoft-Windows-Printing-WFS-FoD-Package~31bf3856ad364e35~AMD64~{Lang}~.cab"; "Microsoft-Windows-StepsRecorder-Package~31bf3856ad364e35~AMD64~{Lang}~.cab"; "Microsoft-Windows-StepsRecorder-Package~31bf3856ad364e35~wow64~{Lang}~.cab"; "Microsoft-Windows-WordPad-FoD-Package~31bf3856ad364e35~AMD64~{Lang}~.cab"; "Microsoft-Windows-WordPad-FoD-Package~31bf3856ad364e35~wow64~{Lang}~.cab"; "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-appxpackaging_{Lang}.cab"; "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\winpe-
storagewmi_{Lang}.cab"; "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\winpe-wifi_{Lang}.cab"; "Windows Preinstallation
Environment\x64\WinPE_OCs\{Lang}\winpe-rejuv_{Lang}.cab"; "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\winpe-opcservices_{Lang}.cab"; "Windows
Preinstallation Environment\x64\WinPE_OCs\{Lang}\winpe-hta_{Lang}.cab"; ) }
```

```
@{ Path = "Boot\Boot"; Rule = @(
    "Windows Preinstallation Environment\x64\WinPE_OCs\WinPE-FontSupport-{Lang}.cab";
    "Windows Preinstallation
Environment\x64\WinPE_OCs\{Lang}\lp.cab";
    "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\WinPE-Setup_{Lang}.cab";
    "Windows Preinstallation
Environment\x64\WinPE_OCs\{Lang}\WINPE-SETUP-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-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; $NewArchC =
$NewArch.Replace("AMD64", "x64");
```

```
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).Replace("{ARCH}", $NewArch).Replace("{ARHC}", $NewArchC) }
```

```
    Extract_Process -NewSaveTo $itemList.Path -Package $Language -Name $item
```

}

}

}

```
$Extract_language_Pack = @(
```

```
@{ Tag = "zh-CN"; Arch = "AMD64"; Act = "Add"; Scope = @("Install\Install"; "Install\WinRE"; "Boot\Boot") }
```

```
@{ Tag = "en-US"; Arch = "AMD64"; Act = "Del"; Scope = @("Install\Install"; "Install\WinRE"; "Boot\Boot") }
```

)

```
ForEach ($item in $Extract_language_Pack) { Extract_Language -Act $item.Act -NewLang $item.Tag -NewArch $item.Arch -Expand $item.Scope }
```

### C. 自定义封装

#### I. 自定义封装: Install.wim

### 1. 查看 Install.wim 详细信息

在开始挂载前，应先分析 Windows 映像的内容结构，通常包含多个不同的版本（如家庭版、企业版、教育版等），使用查看命令可显示：映像名称、映像描述、映像大小、架构、版本、索引号等，然后自定义所需的“索引号”进行挂载。

```
$ViewFile = "D:\ISOTEMP\Sources\Install.wim"; Get-WindowsImage -ImagePath $ViewFile | Foreach-Object { Get-WindowsImage -ImagePath $ViewFile -index $_.ImageIndex };
```

循环操作前，请先学习：附加版：仅需制作主要的所需版 ID，建议您仅需制作 ID：[Core](#)、[CoreN](#)、[Professional](#)、[ProfessionalN](#)、[EnterpriseS](#)、[EnterpriseSN](#) 后进行附加版。

循环操作区域，开始，

### 2. 指定挂载 Install 路径

```
New-Item -Path "D:\ISOTEMP_Custom\Install\Install\Mount" -ItemType directory
```

### 3. 开始挂载 Install.wim

默认索引号：1

```
Mount-WindowsImage -ImagePath "D:\ISOTEMP\sources\install.wim" -Index "1" -Path "D:\ISOTEMP_Custom\Install\Install\Mount"
```

- 验证挂载状态

挂载完成后，查看“已挂载的 Windows 映像信息，包括挂载目录、映像名称、状态”等，运行命令：

```
Get-WindowsImage -Mounted
```

处理 Install.wim 映像内的文件，可选项，开始，

#### 3.1. 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”](#)。

##### 3.1.1. 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:\ISOTEMP_Custom\Install\Install\Mount\Windows\System32\Recovery\WinRE.wim"; Get-WindowsImage -ImagePath $ViewFile | Foreach-Object { Get-WindowsImage -ImagePath $ViewFile -index $_.ImageIndex };
```

### 3.1.2. 指定挂载 WinRE.wim 路径

```
New-Item -Path "D:\ISOTEMP_Custom\Install\WinRE\Mount" -ItemType directory
```

### 3.1.3. 开始挂载 WinRE.wim

默认索引号：1

```
Mount-WindowsImage -ImagePath "D:\ISOTEMP_Custom\Install\Install\Mount\Windows\System32\Recovery\WinRE.wim" -Index "1" -Path "D:\ISOTEMP_Custom\Install\WinRE\Mount"
```

- 验证挂载状态

挂载完成后，查看“已挂载的 Windows 映像信息，包括挂载目录、映像名称、状态”等，运行命令：

```
Get-WindowsImage -Mounted
```

### 3.1.4. 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。

#### 3.1.4.1. 语言包：添加

- WinRE.Instl.lang.ps1
  - \Expand\Install\WinRE\WinRE.Instl.lang.ps1
  - [https://github.com/ilkeyi/solutions/blob/main/\\_Learn/Packaging/tutorial/OS.10/22H2/Expand/Install/WinRE/WinRE.Instl.lang.ps1](https://github.com/ilkeyi/solutions/blob/main/_Learn/Packaging/tutorial/OS.10/22H2/Expand/Install/WinRE/WinRE.Instl.lang.ps1)

- 复制代码

```
$Mount = "D:\ISOTEMP_Custom\Install\WinRE\Mount"; $Sources = "D:\ISOTEMP_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 = @( @{ 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-storagewmizh-CN.cab"; }; @{ Match = "*WiFi*"; File = "winpe-wifi_zh-CN.cab"; }; @{ Match = "*rejuv*"; File = "winpe-rejuv_zh-CN.cab"; }; @{ Match = "*opcservices*"; File = "winpe-opcservices_zh-CN.cab"; }; @{ Match = "*hta*"; File = "winpe-hta_zh-CN.cab"; } )
```

```
ForEach ($Rule in $Language) {
    Write-host "`n Rule name: $($Rule.Match)" -ForegroundColor Yellow; Write-host " $($('-' * 80))";
    ForEach ($Component in $InitInstallLanguageComponent) {
        if ($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; Write-host " $($_) " -ForegroundColor Red; }
            break
        }
    }
}
```

### 3.1.4.2. 脱机映像语言：更改

#### 3.1.4.2.1. 更改默认语言、区域设置和其他国际设置

区域: zh-CN

```
Dism /Image:"D:\ISOTEMP_Custom\Install\WinRE\Mount" /Set-AllIntl:zh-CN
```

#### 3.1.4.2.2. 查看可用的语言设置

```
Dism /Image:"D:\ISOTEMP_Custom\Install\WinRE\Mount" /Get-Intl
```

### 3.1.4.3. 组件：映像中已安装的所有包

#### 3.1.4.3.1. 查看

```
Get-WindowsPackage -Path "D:\ISOTEMP_Custom\Install\WinRE\Mount" | Out-GridView
```

#### 3.1.4.3.2. 导出到 Csv

```
$SaveTo = "D:\ISOTEMP_Custom\Install\WinRE\Report.Components.$(Get-Date -Format
```

```
"yyyyMMddHHmmss").csv"; Get-WindowsPackage -Path  
"D:\ISOTEMP_Custom\Install\WinRE\Mount" | Export-Csv -NoType -Path $SaveTo; Write-host  
$SaveTo -ForegroundColor Green;
```

### 3.1.5. 累积更新

#### 3.1.5.1. 添加

前往下载页面: <https://www.catalog.update.microsoft.com/Search.aspx?q=KB5073933>, 下载后保存到:

D:\ISOTEMP\_Custom\Install\WinRE\Update, 或通过直连下载, 根据架构选择下载:

##### 3.1.5.1.1. x64, 默认

- 直连下载

```
https://catalog.s.download.windowsupdate.com/c/msdownload/update/software/crup/2026/01/windows10.0-kb5073933-x64\_c3c0f57f3d716ecbc314bd66413d72ff3659e9ea.cab
```

- 安装

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Install\WinRE\Mount" -PackagePath  
"D:\ISOTEMP_Custom\Install\WinRE\Update\windows10.0-kb5073933-x64_c3c0f57f3d716ecbc314bd66413d72ff3659e9ea.cab"
```

##### 3.1.5.1.2. x86

- 直连下载

```
https://catalog.s.download.windowsupdate.com/c/msdownload/update/software/crup/2026/01/windows10.0-kb5073933-x86\_0b69266727047a8170632a9a1714c8f59907dca9.cab
```

- 安装

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Install\WinRE\Mount" -PackagePath  
"D:\ISOTEMP_Custom\Install\WinRE\Update\windows10.0-kb5073933-x86_0b69266727047a8170632a9a1714c8f59907dca9.cab"
```

##### 3.1.5.1.3. arm64

- 直连下载

```
https://catalog.s.download.windowsupdate.com/c/msdownload/update/software/crup/2026/01/windows10.0-kb5073933-arm64\_4797d349f42674d6b2043c6aad76baf56304c76e.cab
```

- 安装

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Install\WinRE\Mount" -PackagePath  
"D:\ISOTEMP_Custom\Install\WinRE\Update\windows10.0-kb5073933-  
arm64_4797d349f42674d6b2043c6aad76baf56304c76e.cab"
```

### 3.1.5.2. 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:\ISOTEMP_Custom\Install\WinRE\Mount" /cleanup-image /StartComponentCleanup  
/ResetBase
```

### 3.1.5.2.1. 固化更新后清理组件

```
$Mount = "D:\ISOTEMP_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; }}
```

### 3.1.6. 驱动

#### 3.1.7. 保存映像：WinRE.wim

```
Save-WindowsImage -Path "D:\ISOTEMP_Custom\Install\WinRE\Mount"
```

#### 3.1.8. 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:\ISOTEMP_Custom\Install\WinRE\Mount" -Discard
```

#### 3.1.9. 重建 WinRE.wim 后，可缩小文件大小

- [WinRE.Rebuild.ps1](#)

- [\Expand\Install\WinRE\WinRE.Rebuild.ps1](#)
- [https://github.com/ilkeyi/solutions/blob/main/\\_Learn/Packaging/tutorial/OS.10/22H2/Expand/Install/WinRE/WinRE.Rebuild.ps1](https://github.com/ilkeyi/solutions/blob/main/_Learn/Packaging/tutorial/OS.10/22H2/Expand/Install/WinRE/WinRE.Rebuild.ps1)

- 复制代码

```
$FileName = "D:\ISOTEMP_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; }
```

### 3.1.10. 备份 WinRE.wim

- WinRE.Backup.ps1
  - \Expand\Install\WinRE\WinRE.Backup.ps1
  - [https://github.com/ilkeyi/solutions/blob/main/\\_Learn/Packaging.tutorial/OS.10/22H2/Expand/Install/WinRE/WinRE.Backup.ps1](https://github.com/ilkeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.10/22H2/Expand/Install/WinRE/WinRE.Backup.ps1)

- 复制代码

```
$WimLibPath = "D:\ISOTEMP_Custom\Install\Install\Update\Winlib"; $FileName = "D:\ISOTEMP_Custom\Install\Install\Mount\Windows\System32\Recovery\WinRE.wim"; New-Item -Path $WimLibPath -ItemType Directory; Copy-Item -Path $FileName -Destination $WimLibPath -Force;
```

### 3.1.11. 替换 Install.wim 映像内的 WinRE.wim

- 每次挂载 Install.wim 后“[替换 WinRE.wim](#)”；
- 学习“[获取 Install.wim 所有索引号后并替换旧的 WinRE.wim](#)”。

[处理 Install.wim 映像内的文件，结束。](#)

## 4. 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。

### 4.1. 语言包：添加

- Install.Instl.lang.ps1
  - \Expand\Install\Install.Instl.lang.ps1
  - [https://github.com/ilkeyi/solutions/blob/main/\\_Learn/Packaging.tutorial/OS.10/22H2/Expand/Install/Install.Instl.lang.ps1](https://github.com/ilkeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.10/22H2/Expand/Install/Install.Instl.lang.ps1)
- 复制代码

```
Function Language_Install {
    param($Mount, $Sources, $Lang)

    $Initl_install_Language_Component = @(); $Script:Init_Folder_All_File_Match_Done = @(); $Script:Init_Folder_All_File_Exclude = @();

    if (Test-Path $Mount -PathType Container) { Get-WindowsPackage -Path $Mount | ForEach-Object { $Initl_install_Language_Component += $_.PackageName }; } else { Write-Host "Not mounted: $($Mount)"; return; }

    $Script:Init_Folder_All_File = @()

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

        Get-ChildItem -Path $Sources -Recurse -Include "*.cab" -ErrorAction SilentlyContinue | ForEach-Object { $Script:Init_Folder_All_File += $_.FullName; }

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

        if ($Script:Init_Folder_All_File.Count -gt 0) { ForEach ($item in $Script:Init_Folder_All_File) { Write-host " $($item)"; } } else { Write-host "There are no language pack files locally"; return; }

    } else { Write-Host "Path does not exist: $($Sources)\$($Lang)"; return; }

    $Script:Search_File_Order = @(
        @{ Name = "Fonts"; Description = "Fonts"; Rule = @( @{ Match_Name = "*Fonts*"; IsMatch = "No"; Capability = ""; } ) }
        @{ Name = "Basic"; Description = "Basic"; Rule = @( @{ Match_Name = "*LanguageFeatures-Basic*"; IsMatch = "Yes"; Capability = "Language.Basic~~~ $($Lang)~0.0.1.0"; } )
            @{ Match_Name = "*Client*Language*Pack*"; IsMatch = "Yes"; Capability = "Language.Basic~~~ $($Lang)~0.0.1.0"; } )
        @{ Name = "OCR"; Description = "Optical character recognition"; Rule = @( @{ Match_Name = "*LanguageFeatures-OCR*"; IsMatch = "Yes"; Capability = "Language.OCR~~~ $($Lang)~0.0.1.0"; } )
        @{ Name = "Handwriting"; Description = "Handwriting recognition"; Rule = @( @{ Match_Name = "*LanguageFeatures-Handwriting*"; IsMatch = "Yes"; Capability = "Language.Handwriting~~~ $($Lang)~0.0.1.0"; } )
        @{ Name = "TextToSpeech"; Description = "Text-to-speech"; Rule = @( @{ Match_Name = "*LanguageFeatures-TextToSpeech*"; IsMatch = "Yes"; Capability = "Language.TextToSpeech~~~ $($Lang)~0.0.1.0"; } )
        @{ Name = "Speech"; Description = "Speech recognition"; Rule = @( @{ Match_Name = "*LanguageFeatures-Speech*"; IsMatch = "Yes"; Capability = "Language.Speech~~~ $($Lang)~0.0.1.0"; } )
        @{ Name = "RegionSpecific"; Description = "Other region-specific requirements"; Rule = @( @{ Match_Name = "*InternationalFeatures*"; IsMatch = "No"; Capability = ""; } )
        @{ Name = "Retail"; Description = "Retail demo experience"; Rule = @( @{ Match_Name = "*RetailDemo*"; IsMatch = "Yes"; Capability = ""; } )
        @{ Name = "Features_On_Demand"; Description = "Features on demand"; Rule = @( @{ Match_Name = "*InternetExplorer*"; IsMatch = "Yes"; Capability = ""; }
            @{ Match_Name = "*MSPaint*amd64*"; IsMatch = "Yes"; Capability = "Microsoft.Windows.MSPaint~~~0.0.1.0"; } )
            @{ Match_Name = "*MSPaint*wow64*"; IsMatch = "Yes"; Capability = "Microsoft.Windows.MSPaint~~~0.0.1.0"; } )
            @{ Match_Name = "*Notepad*amd64*"; IsMatch = "Yes"; Capability = "Microsoft.Windows.Notepad~~~0.0.1.0"; } )
            @{ Match_Name = "*Notepad*wow64*"; IsMatch = "Yes"; Capability = "Microsoft.Windows.Notepad~~~0.0.1.0"; } )
            @{ Match_Name = "*MediaPlayer*amd64*"; IsMatch = "Yes"; Capability = "Media.WindowsMediaPlayer~~~0.0.12.0"; } )
            @{ Match_Name = "*MediaPlayer*wow64*"; IsMatch = "Yes"; Capability = "Media.WindowsMediaPlayer~~~0.0.12.0"; } )
            @{ Match_Name = "*PowerShell-ISE-FOD-Package*amd64*"; IsMatch = "Yes"; Capability = "Microsoft.Windows.PowerShell.ISE~~~0.0.1.0"; } )
            @{ Match_Name = "*PowerShell-ISE-FOD-Package*wow64*"; IsMatch = "Yes"; Capability = "Microsoft.Windows.PowerShell.ISE~~~0.0.1.0"; } )
            @{ Match_Name = "*Printing*PMCPPC*amd64*"; IsMatch = "Yes"; Capability = "Print.Management.Console~~~0.0.1.0"; } )
            @{ Match_Name = "*Printing*WFS*amd64*"; IsMatch = "Yes"; Capability = "Print.Management.Console~~~0.0.1.0"; } )
            @{ Match_Name = "*StepsRecorder*amd64*"; IsMatch = "Yes"; Capability = "App.StepsRecorder~~~0.0.1.0"; } )
            @{ Match_Name = "*StepsRecorder*wow64*"; IsMatch = "Yes"; Capability = "App.StepsRecorder~~~0.0.1.0"; } )
            @{ Match_Name = "*WordPad*amd64*"; IsMatch = "Yes"; Capability = "Microsoft.Windows.WordPad~~~0.0.1.0"; } )
            @{ Match_Name = "*WordPad*wow64*"; IsMatch = "Yes"; Capability = "Microsoft.Windows.WordPad~~~0.0.1.0"; } )
            @{ Match_Name = "*WMIC*FoD*Package*amd64*"; IsMatch = "Yes"; Capability = "WMIC~~~"; } )
            @{ Match_Name = "*WMIC*FoD*Package*wow64*"; IsMatch = "Yes"; Capability = "WMIC~~~"; } )
        )
    )
}
```

```
ForEach ($item in $Script:Search_File_Order) { New-Variable -Name "Init_File_Type_$($item.Name)" -Value @() -Force }

ForEach ($WildCard in $Script:Init_Folder_All_File) {

    ForEach ($item in $Script:Search_File_Order) {

        ForEach ($NewRule in $item.Rule) {

            if ($WildCard -like "*$($NewRule.Match_Name)*") { Write-host " `n Fuzzy matching:" -NoNewline; Write-host $NewRule.Match_Name -ForegroundColor Green; Write-host " Language pack file:" -NoNewline; Write-host $WildCard -ForegroundColor Green; $OSDefaultUser = (Get-Variable -Name "Init_File_Type_$($item.Name)" -ErrorAction SilentlyContinue).Value; $TempSave = @{ Match_Name = $NewRule.Match_Name; Capability = $NewRule.Capability; FileName = $WildCard }; $new = $OSDefaultUser + $TempSave; if ($NewRule.IsMatch -eq "Yes") { ForEach ($Component in $Init_install_Language_Component) { if ($Component -like "*$($NewRule.Match_Name)*") { Write-host " Component name:" -NoNewline; Write-host $Component -ForegroundColor Green; New-Variable -Name "Init_File_Type_$($item.Name)" -Value $new -Force; $Script:Init_Folder_All_File_Match_Done += $WildCard; break; } } } else { Write-host " Do not match, install directly" -ForegroundColor Yellow; New-Variable -Name "Init_File_Type_$($item.Name)" -Value $new -Force; $Script:Init_Folder_All_File_Match_Done += $WildCard; } }

        }

    }

}

Write-host "`n Grouping is complete, pending installation" -ForegroundColor Yellow; Write-host " `n(`-' * 80)";

ForEach ($WildCard in $Script:Search_File_Order) {

    $OSDefaultUser = (Get-Variable -Name "Init_File_Type_$($WildCard.Name)" -ErrorAction SilentlyContinue).Value

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

    if ($OSDefaultUser.Count -gt 0) { ForEach ($item in $OSDefaultUser) { Write-host " $($item.FileName)" -ForegroundColor Green; } } else { Write-host " Not available" -ForegroundColor Red; }

}

Write-host "`n Not matched, no longer installed" -ForegroundColor Yellow; Write-host " `n(`-' * 80)";

ForEach ($item in $Script:Init_Folder_All_File) { if ($Script:Init_Folder_All_File_Match_Done -notcontains $item) { $Script:Init_Folder_All_File_Exclude += $item; Write-host " $($item)" -ForegroundColor Red; } }

Write-host "`n Install" -ForegroundColor Yellow; Write-host " `n(`-' * 80)";

ForEach ($WildCard in $Script:Search_File_Order) {

    $OSDefaultUser = (Get-Variable -Name "Init_File_Type_$($WildCard.Name)" -ErrorAction SilentlyContinue).Value

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

    if ($OSDefaultUser.Count -gt 0) {

        ForEach ($item in $OSDefaultUser) {

            Write-host " Language pack file:" -NoNewline; Write-host $item.FileName -ForegroundColor Green; Write-Host " Installing ".PadRight(22) -NoNewline;

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

                try {

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

                    Write-host "Finish`n" -ForegroundColor Green

                }

            }

        }

    }

}
```

```

} catch { Write-host "Failed" -ForegroundColor Red; Write-host " $($_)"-ForegroundColor Red; }

} else { Write-host "Does not exist`n"; }

}

} else { Write-host " Not available`n" -ForegroundColor Red; }

}

Language_Install -Mount "D:\ISOTEMP_Custom\Install\Install\Mount" -Sources "D:\ISOTEMP_Custom\Install\Install\Language\Add" -Lang "zh-CN"

```

#### 4.2. 脱机映像语言：更改

- 从 Windows 11 开始，DISM 设置的[默认系统 UI 语言](#)在所有版本中保持不变（家庭版除外）。对于[所有商业版](#)，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](#)，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。

##### 4.2.1. 更改默认语言、区域设置和其他国际设置

区域：[zh-CN](#)

```
Dism /Image:"D:\ISOTEMP_Custom\Install\Install\Mount" /Set-AllIntl:"zh-CN"
```

##### 4.2.2. 查看可用的语言设置

```
Dism /Image:"D:\ISOTEMP_Custom\Install\Install\Mount" /Get-Intl
```

#### 4.3. 组件：映像中已安装的所有包

##### 4.3.1. 查看

```
Get-WindowsPackage -Path "D:\ISOTEMP_Custom\Install\Install\Mount" | Out-GridView
```

##### 4.3.2. 导出到 Csv

```
$SaveTo = "D:\ISOTEMP_Custom\Install\Install\Report.Components.$(Get-Date -Format "yyyyMMddHHmmss").csv"; Get-WindowsPackage -Path "D:\ISOTEMP_Custom\Install\Install\Mount" | Export-Csv -NoType -Path $SaveTo; Write-host $SaveTo -ForegroundColor Green;
```

#### 5. InBox Apps

## 5.1. 学习

## 5.1.1. DISM 应用包 (.appx 或 .appxbundle) 服务命令行选项

**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**

## 5.2. InBox Apps: 预安装应用程序

- 群组 A: Windows 10 Education, Windows 10 Enterprise, Windows 10 Pro, Windows 10 Pro Education, Windows 10 Pro for Workstations, Windows 10 Home, Windows 10 Home Single Language, Windows 10 IoT Enterprise
- 群组 B: Windows 10 Education N, Windows 10 Enterprise N, Windows 10 Pro N, Windows 10 Pro Education N, Windows 10 Pro N for Workstations, Windows 10 Home N

序号	软件包名称	Product ID	群组	区域范围
1	Microsoft.HEIFImageExtension	9PMMSR1CGPWG	A	
2	Microsoft.MixedReality.Portal	9NG1H8B3ZC7M	A	
3	Microsoft.SkypeApp	9WZDNCRFJ364	A	
4	Microsoft.VP9VideoExtensions	9N4D0MSMP0PT	A	
5	Microsoft.WebMediaExtensions	9N5TDP8VCMHS	A	
6	Microsoft.WebpImageExtension	9PG2DK419DRG	A	
7	Microsoft.WindowsSoundRecorder	9WZDNCRFHWKN	A	
8	Microsoft.Xbox.TCUI	9NKNC0LD5NN6	A	
9	Microsoft.XboxGamingOverlay	9NZKPSTSNW4P	A	
10	Microsoft.ZuneMusic	9WZDNCRFJ3PT	A	
11	Microsoft.ZuneVideo	9WZDNCRFJ3P2	A	
12	Microsoft.UI.Xaml.2.0		A, B	
13	Microsoft.UI.Xaml.2.1		A, B	
14	Microsoft.UI.Xaml.2.3		A, B	
15	Microsoft.Advertising.Xaml		A, B	

序号	软件包名称	Product ID	群组	区域范围
16	Microsoft.NET.Native.Framework.1.7		A, B	
17	Microsoft.NET.Native.Framework.2.2		A, B	
18	Microsoft.NET.Native.Runtime.1.7		A, B	
19	Microsoft.NET.Native.Runtime.2.2		A, B	
20	Microsoft.VCLibs.140.00		A, B	
21	Microsoft.VCLibs.140.00.UWPDesktop		A, B	
22	Services.Store.Engagement		A, B	
23	Microsoft.Cortana	9NFFX4SZZ23L	A, B	
24	Microsoft.BingWeather	9WZDNCRFJ3Q2	A, B	
25	Microsoft.DesktopAppInstaller	9NBLGGH4NNS1	A, B	
26	Microsoft.GetHelp	9PKDZBMV1H3T	A, B	
27	Microsoft.Getstarted	9WZDNCRDTBJJ	A, B	
28	Microsoft.Microsoft3DViewer	9NBLGGH42THS	A, B	
29	Microsoft.MicrosoftOfficeHub	9WZDNCRD29V9	A, B	
30	Microsoft.MicrosoftSolitaireCollection	9WZDNCRFHWD2	A, B	
31	Microsoft.MicrosoftStickyNotes	9NBLGGH4QGHW	A, B	
32	Microsoft.MSPaint	9NBLGGH4QGHW	A, B	
33	Microsoft.Office.OneNote	XPFFZHVGVQWWLHB	A, B	
34	Microsoft.People	9NBLGGH10PG8	A, B	
35	Microsoft.ScreenSketch	9MZ95KL8MR0L	A, B	
36	Microsoft.Wallet	9NBLGGH52CKV	A, B	
37	Microsoft.StorePurchaseApp	9NBLGGH4LS1F	A, B	
38	Microsoft.Windows.Photos	9WZDNCRFJBH4	A, B	
39	Microsoft.WindowsAlarms	9WZDNCRFJ3PR	A, B	
40	Microsoft.WindowsCalculator	9WZDNCRFHVN5	A, B	
41	Microsoft.WindowsCamera	9WZDNCRFJBBG	A, B	
42	Microsoft.Windows.CommunicationsApps	9WZDNCRFHVQM	A, B	
43	Microsoft.WindowsFeedbackHub	9NBLGGH4R32N	A, B	
44	Microsoft.WindowsMaps	9WZDNCRDTBVB	A, B	

序号	软件包名称	Product ID	群组	区域范围
45	Microsoft.WindowsStore	9WZDNCRFJBMP	A, B	
46	Microsoft.XboxApp	9MV0B5HZVK9Z	A, B	
47	Microsoft.XboxGameOverlay	9NBLGGH537C2	A, B	
48	Microsoft.XboxIdentityProvider	9WZDNCRD1HKW	A, B	
49	Microsoft.XboxSpeechToTextOverlay	9P086NHDNB9W	A, B	
50	Microsoft.YourPhone	9NMPJ99VJBWV	A, B	

### 5.3. InBox Apps：已安装

```
$custom_array = @(); Get-AppXProvisionedPackage -Path "D:\ISOTEMP_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。

#### 5.3.1. [查看](#)

```
$custom_array | Out-GridView
```

#### 5.3.2. [导出到 Csv](#)

```
$SaveTo = "D:\ISOTEMP_Custom\Install\Install\Report.InBox.Apps.$(Get-Date -Format "yyyyMMddHHmmss").csv";
$custom_array | Export-Csv -NoType -Path $SaveTo; Write-host $SaveTo -ForegroundColor Green;
```

### 5.4. [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](#)
  - [https://github.com/ilikeyi/solutions/blob/main/\\_Learn/Packaging.tutorial/OS.10/22H2/Expand/Install/Install.Inbox.Apps.Clear.all.ps1](https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.10/22H2/Expand/Install/Install.Inbox.Apps.Clear.all.ps1)
- [复制代码](#)

```
Get-AppXProvisionedPackage -path "D:\ISOTEMP_Custom\Install\Install\Mount" -ErrorAction SilentlyContinue | ForEach-Object { Write-host "`n $($_.DisplayName)"; Write-Host " Deleting ".PadRight(22) -NoNewline; try { Remove-AppxProvisionedPackage -Path "D:\ISOTEMP_Custom\Install\Install\Mount" -PackageName $_.PackageName -ErrorAction SilentlyContinue | Out-Null; Write-host "Finish" -ForegroundColor Green; } catch { Write-host "Failed" -ForegroundColor Red; }}}
```

### 5.5. 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:\ISOTEMP_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。

### 5.6. 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：

#### 5.6.1. 使用“Windows 本地语言体验包（LXPs）下载器”下载

了解：<https://github.com/ilkeyi/LXPs>

下载后保存到：[D:\ISOTEMP\\_Custom\Install\Install\Inbox.apps](#)，文件格式：[LanguageExperiencePack.zh-CN.Neutral.Appx](#)

#### 5.6.2. 手动下载

##### 5.6.2.1. 区域

区域	产品 ID
<a href="#">en-US</a>	C9PDSCC711RVF
<a href="#">ar-sa</a>	9N4S78P86PKX
<a href="#">be-by</a>	9MXPBGNNDW3L
<a href="#">bn-in</a>	9P1M44L7W84T
<a href="#">ca-es-valencia</a>	9P9K3WMFSW90
<a href="#">cy-gb</a>	9NKJ9TBML4HB

区域	产品 ID
<a href="#">af-za</a>	9PDW16B5HMXR
<a href="#">as-in</a>	9NTJLXMXX35J
<a href="#">bg-bg</a>	9MX54588434F
<a href="#">bs-latn-ba</a>	9MVFKLJ10MFL
<a href="#">chr-cher-us</a>	9MX15485N3RK
<a href="#">da-dk</a>	9NDMT2VKSNL1

区域	产品 ID
<a href="#">am-et</a>	9NGL4R61W3PL
<a href="#">az-latn-az</a>	9P5TFKZHQ5K8
<a href="#">bn-bd</a>	9PH7TKVXGGM8
<a href="#">ca-es</a>	9P6JMKJQZ9S7
<a href="#">cs-cz</a>	9P3WXZ1KTM7C
<a href="#">de-de</a>	9P6CT0SLW589

el-gr	9N586B13PBLD
es-mx	9N8MCM1X3928
fa-ir	9NGS7DD4QS21
fr-ca	9MTP2VP0VL92
gd-gb	9P1DBPF36BF3
ha-latn-ng	9N1L95DBGRG3
hr-hr	9NW01VND4LTW
id-id	9P4X3N4SDK8P
it-it	9P8PQWNS6VJX
kk-kz	9PHV179R97LV
kok-in	9MV3P55CMZ6P
ky-kg	9P7D3JJGZM48
lt-lt	9NWWWD891H6HN
mk-mk	9P1X6XB1K3RN
mr-in	9MWXCKHJVR1J
nb-no	9N6J0M5DHCK0
nn-no	9PK7KM3Z06KH
pa-arab-pk	9NJRL03WH6FM
prs-af	9P3NGC6X5ZQC
quc-latn-gt	9P2V6MNNQZ0B
ru-ru	9NMJCX77QKPX
si-lk	9NVF9QLGLT0
sq-al	9MWLRGNMDGK7
sr-latn-rs	9NBZ0SJDPPT
ta-in	9PDZB1WT1B34
th-th	9MSTWFRL0LR4
tn-za	9NFSXM123DHT
ug-cn	9P52C5D7VL5S
uz-latn-uz	9P5P2T5P5L9S
xh-za	9NW3QWSLQD17
zh-tw	9PCJ4DHCQ1JQ

en-gb	9NT52VQ39BVN
et-ee	9NFBHFMCR30L
fi-fi	9MW3PQ7SD3QK
fr-fr	9NHMG4BJKMDG
gl-es	9NXRNBRNZN9B
he-il	9NB6ZFND5HCQ
hu-hu	9MWN3C58HL87
ig-ng	9PG4ZFJ48JSX
ja-jp	9N1W692FV4S1
km-kh	9PGKTS4JS531
ko-kr	9N4TXPCVRNGF
lb-lu	9N0ST1WBZ9D9
lv-lv	9N5CQDPH6SQT
ml-in	9NWDTV8FFV7L
ms-my	9NPXL8ZSDDQ7
ne-np	9P7CHPLWDQVN
nso-za	9NS49QLX5CDV
pa-in	9NSNC0ZJX69B
pt-br	9P8LBDM4FW35
quz-pe	9NHTX8NVQ04K
rw-rw	9NFW0M20H9WG
sk-sk	9N7LSNN099WB
sr-cyrl-ba	9MXGN7V65C7B
sv-se	9P0HSNX08177
te-in	9PMQJJGF63FW
ti-et	9NC8C9RDNK2S
tr-tr	9NL1D3T5HG9R
uk-ua	9PPPMZRSGHR8
vi-vn	9P0W68X0XZPT
yo-ng	9NGM3VPPZS5V
zu-za	9NNRM7KT5NB0

es-es	9NWVGWLHPB1Z
eu-es	9NMCHQHZ37HZ
fil-ph	9NWM2KGTDSSS
ga-ie	9P0L5Q848KXT
gu-in	9P2HMSWDJDQ1
hi-in	9NZC3GRX8LD3
hy-am	9NKM28TM6P67
is-is	9NTHJR7TQXX1
ka-ge	9P60JZL05WGH
kn-in	9NC6DB7N95F9
ku-arab-iq	9P1C18QL3D7H
lo-la	9N8X352G5NZV
mi-nz	9P2GDFB3JPSX
mn-mn	9PG1DHC4VTZW
mt-mt	9PDG96SQ6BN8
nl-nl	9PF1C9NB5PRV
or-in	9NTHCXCXSJDH
pl-pl	9NC5HW94R0LD
pt-pt	9P7X8QJ7FL0X
ro-ro	9MWXGPJ5PJ3H
sd-arab-pk	9NB9JSCXW9X5
sl-si	9NV27L34J4ST
sr-cyrl-rs	9PPD6CCK9K5H
sw-ke	9NFF2M19DQ55
tg-cyrl-tj	9MZHLBPPT2HC
tk-tm	9NKHQ4GL6VLT
tt-ru	9NV90Q1X1ZR2
ur-pk	9NDWFTFW12BQ
wo-sn	9NH3SW1CR90F
zh-cn	9NRMNT6GMZ7

下载区域: zh-CN, 应用程序 ID: 9NRMNT6GMZ70, 商店连接:

<https://www.microsoft.com/store/productId/9NRMNT6GMZ70>

5.6.2.2. 打开网站: <https://store.rg-adguard.net>

5.6.2.2.1. a). 选择 URL (link), b). 选择频道 (RP), c). 输入关键词:

<https://www.microsoft.com/store/productId/9NRMNT6GMZ70>

5.6.2.2.2. 网页内搜索 22621 内容, 搜索结果: Microsoft.LanguageExperiencePackzh-CN\_22621.\*.

neutral\_8wekyb3d8bbwe.appx

5.6.2.2.3. 下载后保存到 D:\ISOTEMP\_Custom\Install\Install\Inbox.apps 目录里, 重命名:

LanguageExperiencePack.zh-cn.Neutral.Appx

5.6.3. 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:\ISOTEMP_Custom\Install\Install\Mount" -PackagePath  
"D:\ISOTEMP_Custom\Install\Install\Inbox.apps\LanguageExperiencePack.zh-cn.Neutral.appx" -SkipLicense
```

5.6.4. 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 language 包, 可通过以下方式查看变化。

5.6.4.1. InBox Apps: 已安装的应用程序包

```
$custom_array = @(); Get-AppXProvisionedPackage -Path "D:\ISOTEMP_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”。

5.6.4.1.1. 查看

```
$custom_array | Out-GridView
```

5.6.4.1.2. 导出到 Csv

```
$SaveTo = "D:\ISOTEMP_Custom\Install\Install\Report.InBox.Apps.$(Get-Date -Format  
"yyyyMMddHHmmss").csv"; $custom_array | Export-Csv -NoType -Path $SaveTo; Write-host  
$SaveTo -ForegroundColor Green;
```

## 5.6.4.2. 查看可用的语言设置

```
Dism /Image:"D:\ISOTEMP_Custom\Install\Install\Mount" /Get-Intl
```

## 5.7. InBox Apps：安装

## 5.7.1. 挂载或解压 InBox Apps 安装文件

挂载 [19041.3031.230508-1728.vb\\_release\\_svc\\_prod3\\_amd64fre\\_InboxApps.iso](#) 或解压到任意位置；

## 5.7.2. 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"
- Install.Inst.Inbox.apps.ps1
  - \Expand\Install\Install.Inst.Inbox.Apps.ps1
  - [https://github.com/ikeyi/solutions/blob/main/\\_Learn/Packaging/tutorial/OS.10/22H2/Expand/Install/Install.Inst.Inbox.Apps.ps1](https://github.com/ikeyi/solutions/blob/main/_Learn/Packaging/tutorial/OS.10/22H2/Expand/Install/Install.Inst.Inbox.Apps.ps1)
- 复制代码

```
$ISO = "Auto"; $Mount = "D:\ISOTEMP_Custom\Install\Install\Mount"; $Allow_Install_App = @();  
  
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 " $($_.ToString())" -ForegroundColor Yellow; return; }  
  
$Pre_Config_Rules = @(@{ Name = @("Core"; "CoreN"; "CoreSingleLanguage"); Apps = @("Microsoft.UI.Xaml.2.3"; "Microsoft.UI.Xaml.2.4"; "Microsoft.UI.Xaml.2.7";  
"Microsoft.NET.Native.Framework.2.2"; "Microsoft.NET.Native.Runtime.2.2"; "Microsoft.VCLibs.140.00"; "Microsoft.VCLibs.140.00.UWPDesktop";  
"Microsoft.HEIFImageExtension"; "Microsoft.HEVCVideoExtension"; "Microsoft.SecHealthUI"; "Microsoft.VP9VideoExtensions"; "Microsoft.WebpImageExtension";  
"Microsoft.WindowsStore"; "Microsoft.GamingApp"; "Microsoft.Sticky.Notes"; "Microsoft.Paint"; "Microsoft.PowerAutomateDesktop"; "Microsoft.ScreenSketch";  
"Microsoft.WindowsNotepad"; "Microsoft.WindowsTerminal"; "Clipchamp.Clipchamp"; "Microsoft.Solitaire.Collection"; "Microsoft.WindowsAlarms";  
"Microsoft.WindowsFeedbackHub"; "Microsoft.WindowsMaps"; "Microsoft.ZuneMusic"; "Microsoft.BingNews"; "Microsoft.DesktopAppInstaller"; "Microsoft.WindowsCamera";  
"Microsoft.Getstarted"; "Microsoft.Cortana"; "Microsoft.BingWeather"; "Microsoft.GetHelp"; "Microsoft.MicrosoftOfficeHub"; "Microsoft.People";  
"Microsoft.StorePurchaseApp"; "Microsoft.Todos"; "Microsoft.WebMediaExtensions"; "Microsoft.Windows.Photos"; "Microsoft.WindowsCalculator";  
"Microsoft.Windows.CommunicationsApps"; "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"); Apps = @("Microsoft.UI.Xaml.2.3"; "Microsoft.UI.Xaml.2.4";  
"Microsoft.UI.Xaml.2.7"; "Microsoft.NET.Native.Framework.2.2"; "Microsoft.NET.Native.Runtime.2.2"; "Microsoft.VCLibs.140.00"; "Microsoft.VCLibs.140.00.UWPDesktop";  
"Microsoft.HEIFImageExtension"; "Microsoft.HEVCVideoExtension"; "Microsoft.SecHealthUI"; "Microsoft.VP9VideoExtensions"; "Microsoft.WebpImageExtension";  
"Microsoft.WindowsStore"; "Microsoft.GamingApp"; "Microsoft.Sticky.Notes"; "Microsoft.Paint"; "Microsoft.PowerAutomateDesktop"; "Microsoft.ScreenSketch";  
"Microsoft.WindowsNotepad"; "Microsoft.WindowsTerminal"; "Clipchamp.Clipchamp"; "Microsoft.Solitaire.Collection"; "Microsoft.WindowsAlarms";  
"Microsoft.WindowsFeedbackHub"; "Microsoft.WindowsMaps"; "Microsoft.ZuneMusic"; "Microsoft.BingNews"; "Microsoft.DesktopAppInstaller"; "Microsoft.WindowsCamera";  
"Microsoft.Getstarted"; "Microsoft.Cortana"; "Microsoft.BingWeather"; "Microsoft.GetHelp"; "Microsoft.MicrosoftOfficeHub"; "Microsoft.People";  
"Microsoft.StorePurchaseApp"; "Microsoft.Todos"; "Microsoft.WebMediaExtensions"; "Microsoft.Windows.Photos"; "Microsoft.WindowsCalculator";  
"Microsoft.Windows.CommunicationsApps"; "Microsoft.WindowsSoundRecorder"; "Microsoft.Xbox.TCUI"; "Microsoft.XboxGameOverlay"; "Microsoft.XboxGamingOverlay";  
"Microsoft.XboxIdentityProvider"; "Microsoft.XboxSpeechToTextOverlay"; "Microsoft.YourPhone"; "Microsoft.ZuneVideo"; "MicrosoftCorporationII.QuickAssist";}
```

```
"Microsoft.Windows.Client.WebExperience"; "Microsoft.RawImageExtension";}); @{} Name = @("EnterpriseN"; "EnterpriseGN"; "EnterpriseSN"; "ProfessionalN"; "EducationN"; "ProfessionalWorkstationN"; "ProfessionalEducationN"; "CloudN"; "CloudEN"; "CloudEditionN"; "CloudEditionLN"; "StarterN"); Apps = @("Microsoft.UI.Xaml.2.3"; "Microsoft.UI.Xaml.2.4"; "Microsoft.UI.Xaml.2.7"; "Microsoft.NET.Native.Framework.2.2"; "Microsoft.NET.Native.Runtime.2.2"; "Microsoft.VCLibs.140.00"; "Microsoft.VCLibs.140.00.UWPDesktop"; "Microsoft.SecHealthUI"; "Microsoft.WindowsStore"; "Microsoft.Sticky.Notes"; "Microsoft.Paint"; "Microsoft.PowerAutomateDesktop"; "Microsoft.ScreenSketch"; "Microsoft.WindowsNotepad"; "Microsoft.WindowsTerminal"; "Clipchamp.Clipchamp"; "Microsoft.Solitaire.Collection"; "Microsoft.WindowsAlarms"; "Microsoft.WindowsFeedbackHub"; "Microsoft.WindowsMaps"; "Microsoft.BingNews"; "Microsoft.DesktopAppInstaller"; "Microsoft.WindowsCamera"; "Microsoft.Getstarted"; "Microsoft.Cortana"; "Microsoft.BingWeather"; "Microsoft.GetHelp"; "Microsoft.MicrosoftOfficeHub"; "Microsoft.People"; "Microsoft.StorePurchaseApp"; "Microsoft.Todos"; "Microsoft.Windows.Photos"; "Microsoft.WindowsCalculator"; "Microsoft.Windows.CommunicationsApps"; "Microsoft.XboxGameOverlay"; "Microsoft.XboxIdentityProvider"; "Microsoft.XboxSpeechToTextOverlay"; "Microsoft.YourPhone"; "MicrosoftCorporationII.QuickAssist"; "MicrosoftWindows.Client.WebExperience";)})}

ForEach ($item in $Pre_Config_Rules) { if ($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 " `n $(-'* 80)";

ForEach ($item in $Allow_Install_App) { Write-host " $($item)" -ForegroundColor Green; }

$InBoxApps = @(@{ Name = "Microsoft.UI.Xaml.2.3"; File = "Microsoft.UI.Xaml.x64.2.3.appx"; License = ""}; @{ Name = "Microsoft.UI.Xaml.2.4"; File = "Microsoft.UI.Xaml.x64.2.4.appx"; License = ""}; @{ Name = "Microsoft.UI.Xaml.2.7"; File = "Microsoft.UI.Xaml.x64.2.7.appx"; License = ""}; @{ Name = "Microsoft.NET.Native.Framework.2.2"; File = "Microsoft.NET.Native.Framework.x64.2.2.appx"; License = ""}; @{ Name = "Microsoft.NET.Native.Runtime.2.2"; File = "Microsoft.NET.Native.Runtime.x64.2.2.appx"; License = ""}; @{ Name = "Microsoft.VCLibs.140.00"; File = "Microsoft.VCLibs.x64.14.00.appx"; License = ""}; @{ Name = "Microsoft.VCLibs.140.00.UWPDesktop"; File = "Microsoft.VCLibs.x64.14.00.UWPDesktop.appx"; License = ""}; @{ Name = "Microsoft.WindowsStore"; File = "Microsoft.WindowsStore_8wekyb3d8bbwe.msixbundle"; License = "Microsoft.WindowsStore_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.HEIFImageExtension"; File = "Microsoft.HEIFImageExtension_8wekyb3d8bbwe.appxbundle"; License = "Microsoft.HEIFImageExtension_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.HEVCVideoExtension"; File = "Microsoft.HEVCVideoExtension_8wekyb3d8bbwe.x64.appx"; License = "Microsoft.HEVCVideoExtension_8wekyb3d8bbwe.x64.xml"; }; @{ Name = "Microsoft.SecHealthUI"; File = "Microsoft.SecHealthUI_8wekyb3d8bbwe.x64.appx"; License = "Microsoft.SecHealthUI_8wekyb3d8bbwe.x64.xml"; }; @{ Name = "Microsoft.VP9VideoExtensions"; File = "Microsoft.VP9VideoExtensions_8wekyb3d8bbwe.x64.appx"; License = "Microsoft.VP9VideoExtensions_8wekyb3d8bbwe.x64.xml"; }; @{ Name = "Microsoft.WebPImageExtension"; File = "Microsoft.WebPImageExtension_8wekyb3d8bbwe.x64.appx"; License = "Microsoft.WebPImageExtension_8wekyb3d8bbwe.x64.xml"; }; @{ Name = "Microsoft.GamingApp"; File = "Microsoft.GamingApp_8wekyb3d8bbwe.msixbundle"; License = "Microsoft.GamingApp_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.Sticky.Notes"; File = "Microsoft.MicrosotStickyNotes_8wekyb3d8bbwe.msixbundle"; License = "Microsoft.MicrosotStickyNotes_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.Paint"; File = "Microsoft.Paint_8wekyb3d8bbwe.msixbundle"; License = "Microsoft.Paint_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.PowerAutomateDesktop"; File = "Microsoft.PowerAutomateDesktop_8wekyb3d8bbwe.msixbundle"; License = "Microsoft.PowerAutomateDesktop_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.ScreenSketch"; File = "Microsoft.ScreenSketch_8wekyb3d8bbwe.msixbundle"; License = "Microsoft.ScreenSketch_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.WindowsNotepad"; File = "Microsoft.WindowsNotepad_8wekyb3d8bbwe.msixbundle"; License = "Microsoft.WindowsNotepad_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.WindowsTerminal"; File = "Microsoft.WindowsTerminal_8wekyb3d8bbwe.msixbundle"; License = "Microsoft.WindowsTerminal_8wekyb3d8bbwe.xml"; }; @{ Name = "Clipchamp.Clipchamp"; File = "Clipchamp.Clipchamp_yxz26nhyzhsrt.msixbundle"; License = "Clipchamp.Clipchamp_yxz26nhyzhsrt.xml"; }; @{ Name = "Microsoft.Solitaire.Collection"; File = "Microsoft.MicrosotSolitaireCollection_8wekyb3d8bbwe.msixbundle"; License = "Microsoft.MicrosotSolitaireCollection_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.WindowsAlarms"; File = "Microsoft.WindowsAlarms_8wekyb3d8bbwe.msixbundle"; License = "Microsoft.WindowsAlarms_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.WindowsFeedbackHub"; File = "Microsoft.WindowsFeedbackHub_8wekyb3d8bbwe.msixbundle"; License = "Microsoft.WindowsFeedbackHub_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.WindowsMaps"; File = "Microsoft.WindowsMaps_8wekyb3d8bbwe.msixbundle"; License = "Microsoft.WindowsMaps_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.ZuneMusic"; File = "Microsoft.ZuneMusic_8wekyb3d8bbwe.msixbundle"; License = "Microsoft.ZuneMusic_8wekyb3d8bbwe.xml"; }; @{ Name = "MicrosoftCorporationII.MicrosoftFamily"; File = "MicrosoftCorporationII.MicrosoftFamily_8wekyb3d8bbwe.msixbundle"; License = "MicrosoftCorporationII.MicrosoftFamily_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.BingNews"; File = "Microsoft.BingNews_8wekyb3d8bbwe.msixbundle"; License = "Microsoft.BingNews_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.DesktopAppInstaller"; File = "Microsoft.DesktopAppInstaller_8wekyb3d8bbwe.msixbundle"; License = "Microsoft.DesktopAppInstaller_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.WindowsCamera"; File = "Microsoft.WindowsCamera_8wekyb3d8bbwe.msixbundle"; License = "Microsoft.WindowsCamera_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.Getstarted"; File = "Microsoft.Getstarted_8wekyb3d8bbwe.msixbundle"; License = "Microsoft.Getstarted_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.Cortana"; File = "Microsoft.CortanaApp_8wekyb3d8bbwe.appxbundle"; License = "Microsoft.CortanaApp_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.BingWeather"; File = "Microsoft.BingWeather_8wekyb3d8bbwe.appxbundle"; License = "Microsoft.BingWeather_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.GetHelp"; File = "Microsoft.GetHelp_8wekyb3d8bbwe.appxbundle"; License = "Microsoft.GetHelp_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.MicrosoftOfficeHub"; File = "Microsoft.MicrosoftOfficeHub_8wekyb3d8bbwe.appxbundle"; License = "Microsoft.MicrosoftOfficeHub_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.People"; File = "Microsoft.People_8wekyb3d8bbwe.appxbundle"; License = "Microsoft.People_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.StorePurchaseApp"; File = "Microsoft.StorePurchaseApp_8wekyb3d8bbwe.appxbundle"; License = "Microsoft.StorePurchaseApp_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.Todos"; File = "Microsoft.Todos_8wekyb3d8bbwe.appxbundle"; License = "Microsoft.Todos_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.WebMediaExtensions";
```

```
File = "Microsoft.WebMediaExtensions_8wekyb3d8bbwe.appxbundle"; License = "Microsoft.WebMediaExtensions_8wekyb3d8bbwe.xml"; }; @{ Name =
"Microsoft.Windows.Photos"; File = "Microsoft.Windows.Photos_8wekyb3d8bbwe.appxbundle"; License = "Microsoft.Windows.Photos_8wekyb3d8bbwe.xml"; }; @{ Name =
"Microsoft.WindowsCalculator"; File = "Microsoft.WindowsCalculator_8wekyb3d8bbwe.appxbundle"; License = "Microsoft.WindowsCalculator_8wekyb3d8bbwe.xml"; };
@{ Name = "Microsoft.Windows.CommunicationsApps"; File = "Microsoft.WindowsCommunicationsApps_8wekyb3d8bbwe.appxbundle"; License =
"Microsoft.WindowsCommunicationsApps_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.WindowsSoundRecorder"; File =
"Microsoft.WindowsSoundRecorder_8wekyb3d8bbwe.appxbundle"; License = "Microsoft.WindowsSoundRecorder_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.Xbox.TCUI";
File = "Microsoft.Xbox.TCUI_8wekyb3d8bbwe.appxbundle"; License = "Microsoft.Xbox.TCUI_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.XboxGameOverlay"; File =
"Microsoft.XboxGameOverlay_8wekyb3d8bbwe.appxbundle"; License = "Microsoft.XboxGameOverlay_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.XboxGamingOverlay"; File =
"Microsoft.XboxGamingOverlay_8wekyb3d8bbwe.appxbundle"; License = "Microsoft.XboxGamingOverlay_8wekyb3d8bbwe.xml"; }; @{ Name =
"Microsoft.XboxIdentityProvider"; File = "Microsoft.XboxIdentityProvider_8wekyb3d8bbwe.appxbundle"; License = "Microsoft.XboxIdentityProvider_8wekyb3d8bbwe.xml"; };
@{ Name = "Microsoft.XboxSpeechToTextOverlay"; File = "Microsoft.XboxSpeechToTextOverlay_8wekyb3d8bbwe.appxbundle"; License =
"Microsoft.XboxSpeechToTextOverlay_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.YourPhone"; File = "Microsoft.YourPhone_8wekyb3d8bbwe.appxbundle"; License =
"Microsoft.YourPhone_8wekyb3d8bbwe.xml"; }; @{ Name = "Microsoft.ZuneVideo"; File = "Microsoft.ZuneVideo_8wekyb3d8bbwe.appxbundle"; License =
"Microsoft.ZuneVideo_8wekyb3d8bbwe.xml"; }; @{ Name = "MicrosoftCorporationII.QuickAssist"; File = "MicrosoftCorporationII.QuickAssist_8wekyb3d8bbwe.appxbundle";
License = "MicrosoftCorporationII.QuickAssist_8wekyb3d8bbwe.xml"; }; @{ Name = "MicrosoftWindows.Client.WebExperience"; File =
"MicrosoftWindows.Client.WebExperience_cw5n1h2txyewy.appxbundle"; License = "MicrosoftWindows.Client.WebExperience_cw5n1h2txyewy.xml"; }; @{ Name =
"Microsoft.RawImageExtension"; File = "Microsoft.RawImageExtension_8wekyb3d8bbwe.appxbundle"; License = "Microsoft.RawImageExtension_8wekyb3d8bbwe.xml"; })
```

```
Function Install_Appx {
```

```
param($File, $License)
```

```
Write-host " $($' * 80)"; Write-host " Installing: " -NoNewline; Write-host $File -ForegroundColor Yellow;
```

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

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

```
        Write-host " License: " -NoNewline; Write-host $License -ForegroundColor Yellow; Write-host " With License".PadRight(22) -NoNewline -ForegroundColor Green; Write-
host " Installing".PadRight(22) -NoNewline;
```

```
        try {
```

```
            Add-AppxProvisionedPackage -Path $Mount -PackagePath $File -LicensePath $License -ErrorAction SilentlyContinue | Out-Null
```

```
            Write-Host "Done" -ForegroundColor Green
```

```
        } catch { Write-Host "Failed" -ForegroundColor Red; Write-Host " $($_) " -ForegroundColor Yellow; }
```

```
    } else {
```

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

```
        try {
```

```
            Add-AppxProvisionedPackage -Path $Mount -PackagePath $File -SkipLicense -ErrorAction SilentlyContinue | Out-Null
```

```
            Write-Host "Done" -ForegroundColor Green
```

```
        } catch { Write-Host "Failed" -ForegroundColor Red; Write-Host " $($_) " -ForegroundColor Yellow; }
```

```
}
```

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

```
}
```

```
ForEach ($Rule in $InBoxApps) {
```

```
    Write-host " `n 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.File -ForegroundColor Yellow; Write-host " Search for License: " -NoNewline; Write-host $Rule.File -
    ForegroundColor Yellow;

    if ($ISO -eq "Auto") {

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

            $AppPath = Join-Path -Path $_.Root -ChildPath "packages\$(($Rule.File))" -ErrorAction SilentlyContinue; $LicensePath = Join-Path -Path $_.Root -ChildPath
            "packages\$(($Rule.License))" -ErrorAction SilentlyContinue;

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

                Write-host " $($'- * 80)"; Write-host " Discover apps: " -NoNewLine; Write-host $AppPath -ForegroundColor Green;

                if (Test-Path $LicensePath -PathType Leaf) {; Write-host " Discover License: " -NoNewLine; Write-host $LicensePath -ForegroundColor Green; } else { Write-host "
License: " -NoNewLine; Write-host "Not found" -ForegroundColor Red; }

                Install_Appx -File $AppPath -License $LicensePath

                return
            }
        }
    }
}

} else { Install_Appx -File "$($ISO)\$($Rule.File)" -License "$($ISO)\$($Rule.License)"; }

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

}

```

### 5.8. 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`
  - [https://github.com/ikeyi/solutions/blob/main/\\_Learn/Packaging.tutorial/OS.10/22H2/Expand/Install/Install.Clear.Flag.ps1](https://github.com/ikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.10/22H2/Expand/Install/Install.Clear.Flag.ps1)
- 复制代码

```

$LANG = "zh-CN"; Get-AppXProvisionedPackage -Path "D:\ISOTEMP_Custom\Install\Install\Mount" | Foreach-object { if
($_.DisplayName -Like "*LanguageExperiencePack*$(Lang)*") { Write-host " $($_.DisplayName)"; Write-Host " Deleting
".PadRight(22) -NoNewline; try { Remove-AppXProvisionedPackage -Path "D:\ISOTEMP_Custom\Install\Install\Mount" -
PackageName $_.PackageName -ErrorAction SilentlyContinue | Out-Null; Write-host "Finish" -ForegroundColor Green; } catch
{ Write-host "Failed" -ForegroundColor Red; }}}

```

### 5.9. 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:\ISOTEMP_Custom\Install\Install\Mount"
```

## 6. 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。

### 6.1. 功能启用包

- 学习：[KB5015684：使用启用包对 Windows 10 版本 22H2 的特别推荐更新](#)
- 注意：使用 Windows 10 22H2 19045.2006 相同版本和以上版本号时，可跳过功能启用包。
- 制作 Windows 10 版本 2004、20H2、21H1、21H2 时，需提前安装“功能启用包”后才能安装 19045.\* 的累积更新，下载后保存到：[D:\ISOTEMP\\_Custom\Install\Install\Update](#)，根据架构选择下载：

#### 6.1.1. x64, 默认

- 直连下载

```
https://catalog.s.download.windowsupdate.com/c/upgr/2022/07/windows10.0-kb5015684-x64\_523c039b86ca98f2d818c4e6706e2cc94b634c4a.msu
```

- 安装

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Install\Install\Mount" -PackagePath "D:\ISOTEMP_Custom\Install\Install\Update\windows10.0-kb5015684-x64_523c039b86ca98f2d818c4e6706e2cc94b634c4a.msu"
```

#### 6.1.2. x86

- 直连下载

```
https://catalog.s.download.windowsupdate.com/c/upgr/2022/07/windows10.0-kb5015684-x86\_556015f4260dd75ca30b3e84484ea5b3ec97fa08.msu
```

- 安装

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Install\Install\Mount" -PackagePath "D:\ISOTEMP_Custom\Install\Install\Update\windows10.0-kb5015684-x86_556015f4260dd75ca30b3e84484ea5b3ec97fa08.msu"
```

## 6.1.3. Arm64

- 直连下载

[https://catalog.s.download.windowsupdate.com/c/upgr/2022/07/windows10.0-kb5015684-arm64\\_a4cc6e95084da14adb972e1d67cf573a244ed7a3.msu](https://catalog.s.download.windowsupdate.com/c/upgr/2022/07/windows10.0-kb5015684-arm64_a4cc6e95084da14adb972e1d67cf573a244ed7a3.msu)

- 安装

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Install\Install\Mount" -PackagePath  
"D:\ISOTEMP_Custom\Install\Install\Update\windows10.0-kb5015684-arm64_a4cc6e95084da14adb972e1d67cf573a244ed7a3.msu"
```

## 6.2. 初始版本

- 注意：提供该选项是制作相同版本，如果安装其它版本请跳过下载初始版本所需的累积更新；
- 累积更新 KB5017308 已无法从 <https://www.catalog.update.microsoft.com/Search.aspx?q=KB5017308> 里搜索到，通过直连方式下载后保存到：D:\ISOTEMP\_Custom\Install\Install\Update，根据架构选择下载：

## 6.2.1. x64, 默认

- 直连下载

[https://catalog.s.download.windowsupdate.com/c/msdownload/update/software/secu/2022/09/windows10.0-kb5017308-x64\\_2027053968a06948b45d139d95475ab4feeee5654.msu](https://catalog.s.download.windowsupdate.com/c/msdownload/update/software/secu/2022/09/windows10.0-kb5017308-x64_2027053968a06948b45d139d95475ab4feeee5654.msu)

- 安装

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Install\Install\Mount" -PackagePath  
"D:\ISOTEMP_Custom\Install\Install\Update\windows10.0-kb5017308-x64_2027053968a06948b45d139d95475ab4feeee5654.msu"
```

## 6.2.2. x86

- 直连下载

[https://catalog.s.download.windowsupdate.com/d/msdownload/update/software/secu/2022/09/windows10.0-kb5017308-x86\\_ec788348202c33b871c8af028d045debd273576c.msu](https://catalog.s.download.windowsupdate.com/d/msdownload/update/software/secu/2022/09/windows10.0-kb5017308-x86_ec788348202c33b871c8af028d045debd273576c.msu)

- 安装

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Install\Install\Mount" -PackagePath  
"D:\ISOTEMP_Custom\Install\Install\Update\windows10.0-kb5017308-x86_ec788348202c33b871c8af028d045debd273576c.msu"
```

## 6.2.3. Arm64

- 直连下载

[https://catalog.s.download.windowsupdate.com/d/msdownload/update/software/secu/2022/09/windows10.0-kb5017308-arm64\\_1ca51a0b3abdab7ee891bd1e1e6d3f03bc15e324.msu](https://catalog.s.download.windowsupdate.com/d/msdownload/update/software/secu/2022/09/windows10.0-kb5017308-arm64_1ca51a0b3abdab7ee891bd1e1e6d3f03bc15e324.msu)

- 安装

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Install\Install\Mount" -PackagePath  
"D:\ISOTEMP_Custom\Install\Install\Update\windows10.0-kb5017308-arm64_1ca51a0b3abdab7ee891bd1e1e6d3f03bc15e324.msu"
```

## 6.3. 其它版本

查阅“[Windows 10 版本信息](#)”，例如下载累积更新：KB5066791，版本号：19045.6465，前往下载页面：

<https://www.catalog.update.microsoft.com/Search.aspx?q=KB5066791>，下载后保存到：

D:\ISOTEMP\_Custom\Install\Install\Update，或通过直连下载，根据架构选择下载：

## 6.3.1. x64, 默认

- 直连下载

[https://catalog.s.download.windowsupdate.com/c/msdownload/update/software/secu/2025/10/windows10.0-kb5066791-x64\\_3210d264091be5effb3253d05397c4daefba44c8.msu](https://catalog.s.download.windowsupdate.com/c/msdownload/update/software/secu/2025/10/windows10.0-kb5066791-x64_3210d264091be5effb3253d05397c4daefba44c8.msu)

优先安装 [7Zip](#) 压缩软件，下载完成后，选择文件后点击“[鼠标右键](#)”后选择菜单：[7Zip -> 解压到这](#)。

- 添加

优先安装服务堆栈更新 (SSU) “[SSU-19041.6449-x64.cab](#)”，如果您不优先安装服务堆栈更新 (SSU) 则无法继续安装此更新。

- 服务堆栈更新 (SSU)

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Install\Install\Mount" -PackagePath  
"D:\ISOTEMP_Custom\Install\Install\Update\SSU-19041.6449-x64.cab"
```

- 累积更新

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Install\Install\Mount" -PackagePath  
"D:\ISOTEMP_Custom\Install\Install\Update\windows10.0-kb5066791-x64_3210d264091be5effb3253d05397c4daefba44c8.cab"
```

## 6.3.2. x86

- 直连下载

[https://catalog.s.download.windowsupdate.com/c/msdownload/update/software/secu/2025/10/windows10.0-kb5066791-x86\\_c8f251a7b071fa63c27db04105d7b3cd5ef683c1.msu](https://catalog.s.download.windowsupdate.com/c/msdownload/update/software/secu/2025/10/windows10.0-kb5066791-x86_c8f251a7b071fa63c27db04105d7b3cd5ef683c1.msu)

优先安装 [7Zip](#) 压缩软件，下载完成后，选择文件后，点击“[鼠标右键](#)”后选择菜单：[7Zip -> 解压到这](#)。

- 添加

优先安装服务堆栈更新 (SSU) “[SSU-19041.6449-x86.cab](#)”，如果您不优先安装服务堆栈更新 (SSU) 则无法继续安装此更新。

- 服务堆栈更新 (SSU)

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Install\Install\Mount" -PackagePath  
"D:\ISOTEMP_Custom\Install\Install\Update\SSU-19041.6449-x86.cab"
```

- 累积更新

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Install\Install\Mount" -PackagePath  
"D:\ISOTEMP_Custom\Install\Install\Update\windows10.0-kb5066791-x86_c8f251a7b071fa63c27db04105d7b3cd5ef683c1.cab"
```

#### 6.3.3. Arm64

- 直连下载

[https://catalog.s.download.windowsupdate.com/c/msdownload/update/software/secu/2025/10/windows10.0-kb5066791-arm64\\_28dfd4874e2cd23882608cdcba89a9cc2132d677.msu](https://catalog.s.download.windowsupdate.com/c/msdownload/update/software/secu/2025/10/windows10.0-kb5066791-arm64_28dfd4874e2cd23882608cdcba89a9cc2132d677.msu)

优先安装 [7Zip](#) 压缩软件，下载完成后，选择文件后，点击“[鼠标右键](#)”后选择菜单：[7Zip -> 解压到这](#)。

- 添加

优先安装服务堆栈更新 (SSU) “[SSU-19041.6449-arm64.cab](#)”，如果您不优先安装服务堆栈更新 (SSU) 则无法继续安装此更新。

- 服务堆栈更新 (SSU)

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Install\Install\Mount" -PackagePath  
"D:\ISOTEMP_Custom\Install\Install\Update\SSU-19041.6449-arm64.cab"
```

- 累积更新

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Install\Install\Mount" -PackagePath  
"D:\ISOTEMP_Custom\Install\Install\Update\windows10.0-kb5066791-arm64_28dfd4874e2cd23882608cdcba89a9cc2132d677.cab"
```

#### 6.4. 固化更新，可选项

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:\ISOTEMP_Custom\Install\Install\Mount" /cleanup-image /StartComponentCleanup /ResetBase
```

##### 6.4.1. 固化更新后清理组件

```
$Mount = "D:\ISOTEMP_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; }}
```

#### 7. 驱动

#### 8. 部署引擎：添加

- 了解“[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。

#### 9. 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:\ISOTEMP_Custom\Install\Install\Mount" -ScanHealth
```

#### 10. 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:\ISOTEMP_Custom\Install\Install\Update\Winlib\WinRE.wim"; $CopyTo =  
"D:\ISOTEMP_Custom\Install\Install\Mount\Windows\System32\Recovery"; Copy-Item -Path $WinRE -Destination $CopyTo -Force;
```

#### 11. 保存映像：Install.wim

```
Save-WindowsImage -Path "D:\ISOTEMP_Custom\Install\Install\Mount"
```

#### 12. 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:\ISOTEMP_Custom\Install\Install\Mount" -Discard
```

[循环操作区域，结束。](#)

### 13. 如何批量替换 Install.wim 里的所有索引号里的 WinRE.wim

#### 13.1. 获取 WimLib

前往 <https://wimlib.net> 官方网站后，选择不同的版本：arm64, x64, x86，下载完成后解压到：D:\Wimlib

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

##### 13.2.1. 从 Install.wim 里提取 WinRE.wim 文件 Install.wim

- Install.WinRE.Replace.wim.ps1
  - \Expand\Install\Install.WinRE.Extract.ps1
  - [https://github.com/ikeyi/solutions/blob/main/\\_Learn/Packaging.tutorial/OS.10/22H2/Expand/Install/Install.WinRE.Replace.wim.ps1](https://github.com/ikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.10/22H2/Expand/Install/Install.WinRE.Replace.wim.ps1)

##### • 复制代码

```
$Arguments = @("extract", "D:\ISOTEMP\sources\install.wim", "1", "\Windows\System32\Recovery\Winre.wim", "--dest-dir=""D:\ISOTEMP_Custom\Install\Install\Update\Winlib"""); New-Item -Path "D:\ISOTEMP_Custom\Install\Install\Update\Winlib" -ItemType Directory; Start-Process -FilePath "d:\wimlib\wimlib-imagemex.exe" -ArgumentList $Arguments -wait -nonewwindow;
```

##### 13.2.2. 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
- [https://github.com/ikeyi/solutions/blob/main/\\_Learn/Packaging.tutorial/OS.10/22H2/Expand/Install/Install.WinRE.Replace.wim.ps1](https://github.com/ikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.10/22H2/Expand/Install/Install.WinRE.Replace.wim.ps1)

##### • 复制代码

```
Get-WindowsImage -ImagePath "D:\ISOTEMP\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:\ISOTEMP\sources\install.wim", $_.ImageIndex, "--command=""add 'D:\ISOTEMP_Custom\Install\Install\Update\Winlib\WinRE.wim' '\Windows\System32\Recovery\WinRe.wim'''"); Start-Process -FilePath "d:\wimlib\wimlib-imagemex.exe" -ArgumentList $Arguments -wait -nonewwindow; Write-Host " Finish`n" -ForegroundColor Green; }
```

### 14. 重建 Install.wim 后可缩小文件大小

#### • Install.Rebuild.wim.ps1

- \Expand\Install\Install.Rebuild.wim.ps1

- [https://github.com/ilikeyi/solutions/blob/main/\\_Learn/Packaging.tutorial/OS.10/22H2/Expand/Install/Install.Rebuild.wim.ps1](https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.10/22H2/Expand/Install/Install.Rebuild.wim.ps1)

- 复制代码

```
$InstallWim = "D:\ISOTEMP\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; }
```

## 15. 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。

### 15.1. 拆分和合并

#### 15.1.1. 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

- [https://github.com/ilikeyi/solutions/blob/main/\\_Learn/Packaging.tutorial/OS.10/22H2/Expand/Install/Install.Split.ps1](https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.10/22H2/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:\ISOTEMP\sources\install.wim" -SplitImagePath "D:\ISOTEMP\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:\ISOTEMP\sources\install.swm" -PathType leaf) { Remove-Item -Path "D:\ISOTEMP\sources\install.wim"; Write-Host "Done" -ForegroundColor Green; } else { Write-Host "Failed" -ForegroundColor Red; }
```

#### 15.1.2. 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
  - [https://github.com/ilikeyi/solutions/blob/main/\\_Learn/Packaging.tutorial/OS.10/22H2/Expand/Install/Install.Merging.ps1](https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.10/22H2/Expand/Install/Install.Merging.ps1)

- 复制代码

```
Write-host "Merge all Install.*.swm files into Install.wim"; Get-WindowsImage -ImagePath "D:\ISOTEMP\Sources\install.swm" -ErrorAction SilentlyContinue | ForEach-Object { Write-Host "Image Name: " -NoNewline; Write-Host $_.ImageName -ForegroundColor Yellow; Write-Host "Index Number: " -NoNewline; Write-Host $_.ImageIndex -ForegroundColor Yellow; Write-Host "Exporting".PadRight(28) -NoNewline; dism /export-image /SourceImageFile:"D:\ISOTEMP\Sources\install.swm" /swmfile:"D:\ISOTEMP\sources\install*.swm" /SourceIndex:"$($_.ImageIndex)" /DestinationImageFile:"D:\ISOTEMP\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:\ISOTEMP\Sources\install.wim" -PathType leaf) { Get-ChildItem -Path "D:\ISOTEMP\sources" -Recurse -include "*.swm" | ForEach-Object { Write-Host "Delete: $($_.fullname)" -ForegroundColor Green; Remove-Item -Path $_.fullname; }; Write-Host "Done" -ForegroundColor Green; } else { Write-Host "Failed" -ForegroundColor Green; }
```

## 15.2. 固实压缩 ESD 格式和互转 WIM 格式

### 15.2.1. 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
- [https://github.com/ilikeyi/solutions/blob/main/\\_Learn/Packaging.tutorial/OS.10/22H2/Expand/Install/Install.Compress.ps1](https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.10/22H2/Expand/Install/Install.Compress.ps1)

- 复制代码

```
Write-host "Solid compressed Install.wim"; Get-WindowsImage -ImagePath "D:\ISOTEMP\Sources\install.wim" -ErrorAction SilentlyContinue | ForEach-Object { Write-Host "Image Name: " -NoNewline; Write-Host $_.ImageName -ForegroundColor Yellow; Write-Host "Index Number: " -NoNewline; Write-Host $_.ImageIndex -ForegroundColor Yellow; Write-Host "Compressing".PadRight(28) -NoNewline; dism /export-image /SourceImageFile:"D:\ISOTEMP\Sources\install.wim" /SourceIndex:"$($_.ImageIndex)" /DestinationImageFile:"D:\ISOTEMP\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:\ISOTEMP\Sources\install.esd" -PathType leaf) { Remove-Item -Path "D:\ISOTEMP\Sources\install.wim"; Write-Host "Done" -ForegroundColor Green; } else { Write-Host "Failed" -ForegroundColor Green; }
```

### 15.2.2. 压缩文件转换为 WIM 文件格式

- Install.Convert.ps1

- \Expand\Install\Install.Convert.ps1
- [https://github.com/ikeyi/solutions/blob/main/\\_Learn/Packaging/tutorial/OS.10/22H2/Expand/Install/Install.Convert.ps1](https://github.com/ikeyi/solutions/blob/main/_Learn/Packaging/tutorial/OS.10/22H2/Expand/Install/Install.Convert.ps1)

- 复制代码

```
Write-host "Convert ESD to WIM"; Get-WindowsImage -ImagePath "D:\ISOTEMP\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:\ISOTEMP\Sources\install.esd" -SourceIndex $_.ImageIndex -DestinationImagePath "D:\ISOTEMP\Sources\install.wim" -CompressionType "Max" -CheckIntegrity -ErrorAction SilentlyContinue | Out-Null; Write-Host "Done`n" -ForegroundColor Green; } catch { Write-Host $_ -ForegroundColor Yellow; Write-Host "Failed`n" -ForegroundColor Red; }; Write-host "`nVerify completion and delete old files"; if (Test-Path -Path "D:\ISOTEMP\Sources\install.wim" -PathType leaf) { Remove-Item -Path "D:\ISOTEMP\Sources\install.esd"; Write-Host "Done" -ForegroundColor Green; } else { Write-Host "Failed" -ForegroundColor Green; }}
```

## II. 自定义封装：boot.wim

### 1. 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:\ISOTEMP\Sources\Boot.wim"; Get-WindowsImage -ImagePath $ViewFile | Foreach-Object { Get-WindowsImage -ImagePath $ViewFile -index $_.ImageIndex };
```

### 2. 指定挂载 Boot.wim 路径

```
New-Item -Path "D:\ISOTEMP_Custom\Boot\Boot\Mount" -ItemType directory
```

### 3. 开始挂载 Boot.wim

默认索引号：2

```
Mount-WindowsImage -ImagePath "D:\ISOTEMP\sources\boot.wim" -Index "2" -Path "D:\ISOTEMP_Custom\Boot\Boot\Mount"
```

- 验证挂载状态

挂载完成后，查看“已挂载的 Windows 映像信息，包括挂载目录、映像名称、状态”等，运行命令：

```
Get-WindowsImage -Mounted
```

### 4. 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。

#### 4.1. 语言包：添加

- Boot.Instl.lang.ps1
  - \Expand\Boot\Boot.Instl.lang.ps1
  - [https://github.com/ikeyi/solutions/blob/main/\\_Learn/Packaging.tutorial/OS.10/22H2/Expand/Boot/Boot.Instl.lang.ps1](https://github.com/ikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.10/22H2/Expand/Boot/Boot.Instl.lang.ps1)
- 复制代码

```
$Mount = "D:\ISOTEMP_Custom\Boot\Boot\Mount"; $Sources = "D:\ISOTEMP_Custom\Boot\Boot\Language\Add\zh-CN"; $Initl_install_Language_Component = @();  
  
Get-WindowsPackage -Path $Mount | ForEach-Object { $Initl_install_Language_Component += $_.PackageName; }  
  
Add-WindowsPackage -Path $Mount -PackagePath "$($Sources)\WinPE-FontSupport-zh-CN.cab"  
  
$Language = @( @{ Match = "*WinPE*Setup*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){  
  
    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; Write-host " $($_) " -ForegroundColor Red; }  
  
            break  
  
        }  
    }  
}  
}
```

#### 4.2. 脱机映像语言：更改

## 4.2.1. 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:\ISOTEMP\_Custom\Boot\Boot\Mount" /Set-AllIntl:zh-CN

## 4.2.2. 查看可用的语言设置

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

## 4.3. 语言包：删除

- 添加语言后，如果要部署到非英语区域，可通过删除英语语言组件来节省空间。删除语言时，请按与添加语言组件相反的顺序卸载语言组件。
- 添加中文后，反向删除“**英语 - 美国**”，区域：en-US，需提前提取语言包
- Boot.Del.Specified.lang.Tag.ps1
  - \Expand\Boot\Boot.Del.Specified.lang.Tag.ps1
  - [https://github.com/ilkeyi/solutions/blob/main/\\_Learn/Packaging.tutorial/OS.10/22H2/Expand/Boot/Boot.Del.Specified.lang.Tag.ps1](https://github.com/ilkeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.10/22H2/Expand/Boot/Boot.Del.Specified.lang.Tag.ps1)
- 复制代码

```
$Lang = "en-US"

$Mount = "D:\ISOTEMP_Custom\Boot\Boot\Mount"

$Sources = "D:\ISOTEMP_Custom\Boot\Boot\Language\Del\en-US"

$Initl_install_Language_Component = @()

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

    $Initl_install_Language_Component += $_.PackageName

}

$Language = @()

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

@{ Match = "*Client-LanguagePack-Package*"; File = "Microsoft-Windows-Client-Language-Pack_x64_{$Lang}.cab"; }

)

ForEach ($Rule in $Language) {

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

    ForEach ($Component in $InitL_install_Language_Component) {

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

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

            Write-host " Language pack file: " -NoNewline; Write-host "$($Sources)\ $($Rule.File)" -ForegroundColor Green

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

            try {


```

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

Write-host "Finish" -ForegroundColor Green

} catch {

    Write-host "Failed" -ForegroundColor Red

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

}

break

}

}

}

$InitClearLanguagePackage = @()

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

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

    $InitClearLanguagePackage += $.PackageName

}

}

if ($InitClearLanguagePackage.count -gt 0) {

    ForEach ($item in $InitClearLanguagePackage) {

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

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

        try {

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

            Write-host "Finish" -ForegroundColor Green

        } catch {

            Write-host "Failed" -ForegroundColor Red

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

        }

    }

}
```

#### 4.4 组件：映像中已安装的所有包

#### 4.4.1. 查看

```
Get-WindowsPackage -Path "D:\ISOTEMP_Custom\Boot\Boot\Mount" | Out-GridView
```

#### 4.4.2. 导出到 Csv

```
$SaveTo = "D:\ISOTEMP_Custom\Boot\Boot\Report.Components.$(Get-Date -Format "yyyyMMddHHmmss").csv"; Get-WindowsPackage -Path "D:\ISOTEMP_Custom\Boot\Boot\Mount" | Export-Csv -NoType -Path $SaveTo; Write-host $SaveTo -ForegroundColor Green;
```

### 4.5. 语言包：同步到 ISO 安装程序

```
Copy-Item -Path "D:\ISOTEMP_Custom\Boot\Boot\Mount\sources\zh-CN" -Destination "D:\ISOTEMP\sources\zh-CN" -Recurse -Force
```

### 4.6. 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。

#### 4.6.1. 重新生成已挂载目录 lang.ini

重新生成的 Lang.ini 文件位置：[D:\ISOTEMP\\_Custom\Boot\Boot\Mount\Sources\lang.ini](#)

```
Dism /image:"D:\ISOTEMP_Custom\Boot\Boot\Mount" /gen-langini /distribution:"D:\ISOTEMP_Custom\Boot\Boot\Mount"
```

#### 4.6.2. 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:\ISOTEMP\Sources\lang.ini](#)

```
Dism /image:"D:\ISOTEMP_Custom\Boot\Boot\Mount" /gen-langini /distribution:"D:\ISOTEMP"
```

## 5. 累积更新

### 5.1. 添加

#### 5.1.1. KB5062682

前往下载页面：<https://www.catalog.update.microsoft.com/Search.aspx?q=KB5062682>，下载后保存到：

[D:\ISOTEMP\\_Custom\Boot\Boot\Update](#)，或通过直连下载，根据架构选择下载：

#### 5.1.1.1. x64, 默认

- 直连下载

[https://catalog.s.download.windowsupdate.com/d/msdownload/update/software/crup/2025/07/windows10-0-kb5062682-x64\\_c75730b6769533f9095651973482e541b99c366c.cab](https://catalog.s.download.windowsupdate.com/d/msdownload/update/software/crup/2025/07/windows10-0-kb5062682-x64_c75730b6769533f9095651973482e541b99c366c.cab)

- 安装

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Boot\Boot\Mount" -PackagePath  
"D:\ISOTEMP_Custom\Boot\Boot\Update\windows10.0-kb5062682-  
x64_c75730b6769533f9095651973482e541b99c366c.cab"
```

#### 5.1.1.2. x86

- 直连下载

[https://catalog.s.download.windowsupdate.com/d/msdownload/update/software/crup/2025/07/windows10.0-kb5062682-x86\\_a57817d950844e7bd31ba059062176ff8dd42176.cab](https://catalog.s.download.windowsupdate.com/d/msdownload/update/software/crup/2025/07/windows10.0-kb5062682-x86_a57817d950844e7bd31ba059062176ff8dd42176.cab)

- 安装

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Boot\Boot\Mount" -PackagePath  
"D:\ISOTEMP_Custom\Boot\Boot\Update\windows10.0-kb5062682-  
x86_a57817d950844e7bd31ba059062176ff8dd42176.cab"
```

#### 5.1.1.3. arm64

- 直连下载

[https://catalog.s.download.windowsupdate.com/d/msdownload/update/software/crup/2025/07/windows10.0-kb5062682-arm64\\_0139af354cf895bf9a6ec2185adcf595b1cde661.cab](https://catalog.s.download.windowsupdate.com/d/msdownload/update/software/crup/2025/07/windows10.0-kb5062682-arm64_0139af354cf895bf9a6ec2185adcf595b1cde661.cab)

- 安装

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Boot\Boot\Mount" -PackagePath  
"D:\ISOTEMP_Custom\Boot\Boot\Update\windows10.0-kb5062682-  
arm64_0139af354cf895bf9a6ec2185adcf595b1cde661.cab"
```

### 5.2. 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:\ISOTEMP_Custom\Boot\Boot\Mount" /cleanup-image /StartComponentCleanup /ResetBase
```

#### 5.2.1. 固化更新后清理组件

```
$Mount = "D:\ISOTEMP_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; }}
```

### 6. 驱动

## 7. 保存映像: Boot.wim

```
Save-WindowsImage -Path "D:\ISOTEMP_Custom\Boot\Boot\Mount"
```

## 8. 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:\ISOTEMP_Custom\Boot\Boot\Mount" -Discard
```

## III. 部署引擎

- 了解“自动添加 Windows 系统已安装的语言”，学习：<https://github.com/ilkeyi/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/ilkeyi/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](#)”，通过无人值守来干预安装过程。

## 1. 添加方式

## 1.1. 添加到 ISO 安装介质

## 1.1.1. 无人值守

## 1.1.1.1. 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:\ISOTEMP\Autounattend.xml

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

## 1.1.1.2. 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:\ISOTEMP\Sources\Unattend.xml

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

## 1.1.1.3. 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

## 1.1.1.3.1. 创建 \$OEM\$ 路径

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

## 1.1.1.3.2. 复制

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

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

## 1.1.2. 部署引擎: 添加

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

## 1.1.2.1. 部署引擎: 复制

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

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

## 1.1.2.2. 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_Unused_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:\ISOTEMP\sources\$OEM\$1\Yi\Engine\Deploy\Allow" -ItemType Directory -ErrorAction SilentlyContinue | Out-Null

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

}
```

## 1.2. 添加到已挂载

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

### 1.2.1. 无人值守

复制 [D:\Multilingual\Learn\Unattend\Mul.Unattend.xml](#) 到 [D:\ISOTEMP\\_Custom\Install\Install\Mount\Panther\Unattend.xml](#)

```
Copy-Item "D:\Multilingual\Learn\Unattend\Mul.Unattend.xml" -Destination "D:\ISOTEMP_Custom\Install\Install\Mount\Panther" -Force
```

### 1.2.2. 部署引擎

添加“[自动添加 Windows 系统已安装的语言](#)”到 [D:\ISOTEMP\\_Custom\Install\Install\Mount\Yi\Engine](#) 目录里。

#### 1.2.2.1. 部署引擎：复制

复制 [D:\Multilingual\Engine](#) 到 [D:\ISOTEMP\\_Custom\Install\Install\Mount\Yi\Engine](#)

```
Copy-Item "D:\Multilingual\Engine" -Destination "D:\ISOTEMP_Custom\Install\Install\Mount\Yi\Engine" -Recurse -Force
```

## 1.2.2.2. 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:\ISOTEMP_Custom\Install\Install\Mount\Yi\Engine\Deploy\Allow" -ItemType Directory -ErrorAction SilentlyContinue | Out-Null

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

}
```

## 2. 部署引擎：进阶

## 2.1. 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。

## 2.2. 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:\ISOTEMP\Autounattend.xml
- D:\ISOTEMP\Sources\Unattend.xml
- D:\ISOTEMP\sources\\$OEM\$\\$\$\Panther\unattend.xml
- D:\ISOTEMP\_Custom\Install\Install\Mount\Panther\Unattend.xml

### 2.2.1. 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。

#### 2.2.1.1. 多语言

```
<UILanguage>%OSDUILanguage%</UILanguage>  
<InputLocale>%OSDInputLocale%</InputLocale>  
<SystemLocale>%OSDSysLocale%</SystemLocale>  
<UILanguage>%OSDUILanguage%</UILanguage>  
<UILanguageFallback>%OSDUILanguageFallback%</UILanguageFallback>  
<UserLocale>%OSDUserLocale%</UserLocale>
```

#### 2.2.1.2. 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>
```

### 2.2.2. 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。

## 2.2.2.1. 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>
```

## 2.2.2.2. 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。

## 2.2.2.2.1. 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>

## 2.2.2.2. 替换

从开始处 <OOBE> 到 </OOBE>

<OOBE>

<ProtectYourPC>3</ProtectYourPC>

<HideEULAPage>true</HideEULAPage>

<HideWirelessSetupInOOBE>true</HideWirelessSetupInOOBE>

</OOBE>

## D. 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；

## 1.1. x64

[https://github.com/ilikeyi/Solutions/raw/refs/heads/main/\\_Encapsulation/Modules/AIO/Oscdimg/amd64/oscdimg.exe](https://github.com/ilikeyi/Solutions/raw/refs/heads/main/_Encapsulation/Modules/AIO/Oscdimg/amd64/oscdimg.exe)

## 1.2. x86

[https://github.com/ilikeyi/Solutions/raw/refs/heads/main/\\_Encapsulation/Modules/AIO/Oscdimg/x86/oscdimg.exe](https://github.com/ilikeyi/Solutions/raw/refs/heads/main/_Encapsulation/Modules/AIO/Oscdimg/x86/oscdimg.exe)

## 1.3. arm64

[https://github.com/ilikeyi/Solutions/raw/refs/heads/main/\\_Encapsulation/Modules/AIO/Oscdimg/arm64/oscdimg.exe](https://github.com/ilikeyi/Solutions/raw/refs/heads/main/_Encapsulation/Modules/AIO/Oscdimg/arm64/oscdimg.exe)

## 2. 使用 oscdimg 命令行生成一个 ISO 文件，保存到：D:\ISOTEMP.iso

## • ISO.ps1

◦ \Expand\ISO.ps1

◦ [https://github.com/ilikeyi/solutions/blob/main/\\_Learn/Packaging.tutorial/OS.10/22H2/Expand/ISO.ps1](https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.10/22H2/Expand/ISO.ps1)

## • 复制代码

```
$Oscdimg = "D:\Oscdimg.exe"; $ISO = "D:\ISOTEMP"; $Volume = "ISOTEMP"; $SaveTo = "D:\ISOTEMP.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;
```

## A. 部署前应注意

## 1. 在选择安装 Windows 11 的位置时

先选择“[磁盘分区](#)”，再选择“[格式化分区](#)”，再“[下一步](#)”，如果未格式化磁盘，覆盖安装会导致已知问题：

- 使用 Administrator 用户：
  - 应用程序图标会出现 UAC 安全提示；
  - 点右键运行 PS1 以管理员身份运行无效；

## 2. 运行安装程序时

- 你不得在正在使用的系统里运行 ISO 下的 Setup.exe 进入安装程序，否则会导致安装过程中复制 \$OEM\$ 目录异常，此问题属于安装程序的 BUG。
- 安装系统到物理设备时，您只能使用 [U 盘、CD-ROM、PE、通过网络安装（PXE 启动）](#) 等方式进入安装程序，必须“[全新安装](#)”。

## B. 部署操作系统到物理设备

物理设备进入系统安装引导前，你必须选择“[准备引导安装程序前先决条件](#)”中的“[创建可引导的安装物理存储介质、CD-ROM、通过网络安装（PXE 启动）](#)”其中一项并完成。

## 1. 准备引导安装程序前先决条件

部署系统安装文件到物理存储设备时，应准备可移动驱动器、CD-ROM 来存放 Windows 操作系统的安装文件。

## 1.1. 创建可引导的安装物理存储介质

准备存储大于 16G 的可移动硬盘、USB 驱动器，购买可移动驱动器时，应选择双接口（Type-C、USB3.1），选择带有 Type-C、USB3.1 双接口的好处有：

- 在安装系统过程中若缺少驱动时：可通过“手机”下载后，插上带有 Type-C 的可移动驱动器进行文件管理，将已下载的“驱动”复制到“可移动驱动器”里；
- 在日常过程中，可使用 Type-C 连接至手机用于存储临时文件和备份数据等操作。

## 1.1.1. 磁盘分区

- 在 MacOS（除 M 系列）、PC 里安装 Windows 系统，使用 [FAT32](#) 格式存放 Windows 系统安装文件是最佳的解决方案。

部署到正在使用的系统里，将原生启动 VHD 添加到现有启动菜单里

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- 存储设备小于 16G 时，建议您直接划分 1 个分区；
- 存储设备大于 32G 以上时，建议您划分 3 个分区，划分方案：

分区 1，分配第 2 分区 6 GB 后，剩余的所有磁盘空间用于：存放 Windows 系统安装文件（将 Yi.Deploy.Rule.iso 解压后可自定义部署）、日常可用于存储临时文件和备份数据等操作。。

分区 2：划分磁盘空间 6G，用于存放 PE 系统，推荐：

- Sergei Strelec | <https://sergeistrelec.name/winpe-10-8-sergei-strelec-english>
- Hiren's BootCD | <https://www.hirensbootcd.org>

#### 1.1.2. 复制系统安装文件到磁盘分区里

格式化分区请选择 Fat32 后，再复制 ISO 下的所有文件到 U 盘根目录即可完成创建。

### 1.2. CD-ROM

#### 1.2.1. 准备一台“可刻录光盘机”

#### 1.2.2. 准备“空白光盘”

1.2.3. 选择“ISO 文件”后，选择右键“刻录”功能后点击开始刻录，等待完成。

### 1.3. 通过网络安装（PXE 启动）

每软件使用方法不同，使用前请学习，可选择：

1.3.1. Serva | <https://www.vercot.com/~serva>

1.3.2. TinyPXE Server | [http://labalec.fr/erwan/?page\\_id=958](http://labalec.fr/erwan/?page_id=958)

1.3.3. iventory | <https://www.iventoy.com>

## 2. 物理设备进入系统安装引导

- 开机时，根据不同的主板按不同的键进入“启动菜单”“BIOS 菜单里选择磁盘引导”，常见的 BIOS 启动热键：F2、F8、F9、F11、F12、ESC
- 根据启动介质选择不同的菜单：CD-ROM、PXE、选择 U 盘已识别出来的分区。

## C. 部署到正在使用的系统里，将原生启动 VHD 添加到现有启动菜单里

### 1. 创建 VHD/VHDX 文件

#### 1.1. 磁盘管理交互式

部署到正在使用的系统里，将原生启动 VHD 添加到现有启动菜单里

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打开“磁盘管理 (diskmgmt.msc)”，选择“动作”，选择“创建 VHD”，弹出“创建或附加虚拟磁盘”对话框后：

- 设置“位置：D:\OS.vhdx”
- 设置“虚拟磁盘大小：120，选择：GB”
- 选择“虚拟磁盘格式：VHDX”
- 选择“动态扩展”

点击“确定”后，显示磁盘区域会新增一个磁盘，依次：

- 选择“磁盘 2 (选择时请查看是否选择正确的磁盘)”后点击“右键”，选择“初始化磁盘”
- 选择“磁盘 2 分区”后点击“右键”，选择“新建简单卷向导”并完成。

## 1.2. 命令行创建

快速创建（保存到：D:\OS.vhdx，虚拟磁盘大小：120GB，动态扩展，分配盘符：Q），命令行：

- 输入 Diskpart 后“回车”，在此对话框里依次运行：

```
Create Vdisk File="D:\OS.vhdx" Maximum=122880 Type=expandable  
Select Vdisk file="D:\OS.vhdx"  
Attach Vdisk  
Create Partition Primary  
Format Fs=NTFS Label="VOS" Quick  
Assign Letter=Q  
Exit
```

## 2. 应用 Install.wim 里的系统到 VHD/VHDX 文件里

完成“创建 VHD/VHDX 文件”后，可应用 Install.wim 里指定的索引号到指定的盘符，已设置：映像文件：D:\ISOTemp\Sources\Install.wim，索引号：1，应用到盘符：Q，命令行：

```
Expand-WindowsImage -ImagePath "D:\ISOTemp\Sources\install.wim" -ApplyPath "Q:\" -Index 1
```

## 3. 将原生启动 VHD 添加到现有 Windows 10/11 启动菜单中

### 3.1. 备份 BCD

使用 BCDEDIT 工具 /export 选项备份您的 BCD 存储。在命令提示符下，运行：`bcdedit /export c:\bcdbackup`

- 3.2. 复制一个现有的 Windows 10/11 安装启动项。然后修改副本，使其用作 VHD 启动项。在命令提示符下，运行：

```
bcddedit /copy {default} /d "VHD New Windows 11"
```

当 BCDDedit 命令成功完成时，它会在命令提示符窗口中返回 {GUID} 作为输出。

- 3.3. 在上一个命令的命令提示符输出中找到 {GUID}。复制 GUID（包括大括号），以便在后续步骤中使用。

- 3.4. 设置 VHD 启动项的设备和操作系统设备选项，必须替换 {GUID}。在命令提示符下，运行：

```
bcddedit /set {default} device vhd="[D:]\OS.vhdx"
```

```
bcddedit /set {default} osdevice vhd="[D:]\OS.vhdx"
```

- 3.5. 可选项：

- 3.5.1. 将 VHD 的启动项设置为默认启动项。计算机重启后，启动菜单将显示计算机上所有 Windows 安装，并在操作系统选择倒计时结束后启动 VHD。在命令提示符下，输入：

```
bcddedit /default {guid}
```

- 3.5.2. 某些基于 x86 的系统需要内核的启动配置选项，以便检测某些硬件信息并成功地从 VHD 进行本地启动。在命令提示符下，输入：

```
bcddedit /set {guid} detecthal on
```

有关如何使用 BCDDedit 工具的更多信息，请参阅此 [Microsoft 网站](#)。

## D. 部署到虚拟机

常见的有 Windows 自带的 Hyper-V、VMware Workstation Pro、VirtualBox 等。

### 1. 启用 Hyper-V

- 确保您的系统符合要求：Windows 10/11 专业版或企业版，配备具有二级地址转换（SLAT）的 64 位处理器，并且至少有 4 GB 内存。  
Hyper-V 不适用于 Windows 家庭版。
- 启用 Hyper-V 后，您可以使用 Hyper-V 管理器或 PowerShell 命令开始创建虚拟机。
- Hyper-V 是内置于 Windows 的虚拟化平台，允许您创建和管理虚拟机。以下是在系统上启用 Hyper-V 的方法。

#### 1.1. 使用 PowerShell

以管理员身份打开 Windows PowerShell：按 Win + S，输入 “PowerShell”，右键点击，然后选择 “以管理员身份运行”，运行以下命

令以启用 Hyper-V:

```
Enable-WindowsOptionalFeature -Online -FeatureName Microsoft-Hyper-V -All
```

当系统提示时，输入 **Y** 重启计算机以完成安装，当系统提示时，重启计算机。

## 1.2. 在“启用或关闭 Windows 功能”里选择

### 1.2.1. 打开“启用或关闭 Windows 功能”对话框

1.2.1.1. 运行 `OptionalFeatures` 后弹出“启用或关闭 Windows 功能”。

1.2.1.2. 使用控制面板

- 打开控制面板：按下 `Win` 键 + `S`，输入“控制面板”，然后打开它。

- 导航到 `程序 > 程序和功能 > 启用或关闭 Windows 功能`。

1.2.2. 打开后勾选 `Hyper-V` 复选框，然后点击确定。

1.2.3. 重启计算机以完成安装。

## 2. VMware Workstation Pro

官方网站 | <https://www.vmware.com/products/desktop-hypervisor/workstation-and-fusion>

## 3. VirtualBox

官方网站 | <https://www.virtualbox.org>

## E. 进阶部署

### 1. 全自动安装

- 批量部署过程中，想实现全自动安装，需要修改应预答配置；
- 多硬盘

批量安装优先判断多少个硬盘并初始化，根据不同的硬盘需求去实现不同的解决方案。

## 2. 部署引擎

如果添加了部署引擎（`Multilingual`、`YiSuite`），在部署中，您可以“自定义”部署过程，下载模板：`Yi.Engine.Deploy.Rule.iso`，下载完成后，解压到任意磁盘，或在首次部署时，挂载 ISO 或修改 ISO 内容，了解更多：

- Multilingual | <https://github.com/ilikeyi/Multilingual>
- YiSuite | <https://github.com/ilikeyi/YiSuite>

## 2.1. 自定义部署 Office

下载模板 `Yi.Engine.Deploy.Rule.iso` 后，解压到任意磁盘，示例解压到：D:\Yi，选择版本后运行下载脚本：

### 2.1.1. Office 365

```
& "D:\Yi\Office\365\amd64\Download.Office.amd64.ps1"  
& "D:\Yi\Office\365\x86\Download.Office.x86.ps1"
```

### 2.1.2. Office 2024

```
& "D:\Yi\Office\2024\amd64\Download.Office.amd64.ps1"  
& "D:\Yi\Office\2024\x86\Download.Office.x86.ps1"
```

### 2.1.3. Office 2021

```
& "D:\Yi\Office\2021\amd64\Download.Office.amd64.ps1"  
& "D:\Yi\Office\2021\x86\Download.Office.x86.ps1"
```

安装前请下载 Office 安装包，下载完成后：按此顺序搜索：365、2024、2021；

发现了可用的安装包：首次部署会搜索 `Yi.ps1` 文件并执行 Office 安装进程；

手动运行：D:\Yi\Office\{ 365 | 2024 | 2021 }\{ amd64 | x86 }\Office\Install.Office.ps1 可进入安装进程。

可持续性：

自定义部署：在使用移动 U 盘，可将 `Yi` 目录保存到 U 盘分区，在安装系统过程中，一直保持连接状态，自动运行自定义部署策略。

## 2.2. 应预答用户方案

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。

### 2.2.1. 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>
```

#### 2.2.2. OOBE 交互式创建新用户

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。

##### 2.2.2.1. 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>`

##### 2.2.2.2. 替换

从开始处 `<OOBE>` 到 `</OOBE>`

`<OOBE>`

```
<ProtectYourPC>3</ProtectYourPC>

<HideEULAPage>true</HideEULAPage>

<HideWirelessSetupInOOBE>true</HideWirelessSetupInOOBE>

</OOBE>
```

### 章节 3 学习

#### A. 附加版

Install.wim 里有多个版本时，常规操作是依次挂载后自定义操作，在制作过程中减少反复的流程，制作好所需版后，可附加为其它的版本。

##### 1. 附加版：仅需制作主要的所需版 ID

版本 ID：Core、CoreN、Professional、ProfessionalN、EnterpriseS、EnterpriseSN，差异：内置 InBox Apps 分配不同等。

##### 2. 附加版：制作可附加版 ID 和所需版 ID 对照

编组	所需版 ID	可附加版 ID	备注
1	Core	Core, CoreSingleLanguage, ProfessionalN, EducationN, ProfessionalEducationN, ProfessionalWorkstationN, EnterpriseN, CloudEditionN	
2	CoreN	CoreN, CoreSingleLanguage, Professional, Education, ProfessionalCountrySpecific, ProfessionalEducation, ProfessionalSingleLanguage, ProfessionalWorkstation, Enterprise, IoTEnterprise, IoTEnterpriseK, ServerRdsh, CloudEdition	
3	Professional	Professional, Education, ProfessionalCountrySpecific, ProfessionalEducation, ProfessionalSingleLanguage, ProfessionalWorkstation, Enterprise, IoTEnterprise, IoTEnterpriseK, ServerRdsh, CloudEdition	
4	ProfessionalN	ProfessionalN, EducationN, ProfessionalEducationN, ProfessionalWorkstationN, EnterpriseN, CloudEditionN	
5	EnterpriseS	EnterpriseS, IoTEnterpriseS, IoTEnterpriseSK	
6	EnterpriseSN	EnterpriseSN	

##### 3. 附加版：排序

排序	操作系统名称	所需版 ID	可附加版 ID	备注
1	Windows 10 Home	Core	Core	
2	Windows 10 Home N	CoreN	CoreN	
3	Windows 10 Home Single Language	Core	CoreSingleLanguage	
4	Windows 10 Education	Professional	Education	

排序	操作系统名称	所需版 ID	可附加版 ID	备注
5	Windows 10 Education N	ProfessionalN	EducationN	
6	Windows 10 Pro	Professional	Professional	
7	Windows 10 Pro N	ProfessionalN	ProfessionalN	
8	Windows 10 Pro Education	Professional	ProfessionalEducation	
9	Windows 10 Pro Education N	ProfessionalN	ProfessionalEducationN	
10	Windows 10 Pro for Workstations	Professional	ProfessionalWorkstation	
11	Windows 10 Pro N for Workstations	ProfessionalN	ProfessionalWorkstationN	
12	Windows 10 Enterprise	Professional	Enterprise	
13	Windows 10 Enterprise multi-session / Virtual Desktops	Professional	ServerRdsh	
14	Windows 10 Enterprise N	ProfessionalN	EnterpriseN	
15	Windows 10 IoT Enterprise	Professional	IoTEnterprise	
16	Windows 10 IoT Enterprise Subscription	Professional	IoTEnterpriseK	
17	Windows 10 Enterprise LTSC	EnterpriseS	EnterpriseS	
18	Windows 10 Enterprise N LTSC	EnterpriseS	IoTEnterpriseS	
19	Windows 10 IoT Enterprise LTSC	EnterpriseS	IoTEnterpriseSK	
20	Windows 10 IoT Enterprise Subscription LTSC	EnterpriseSN	EnterpriseSN	

#### 4. 附加版：事件

##### 4.1. 规则

脚本制作规则，根据“附加版：排序”的顺序，追加 install.wim 里的索引号到 Install.AE.Temp.wim 里。依次：

- 1) 挂载
- 2) 脱机更改版本 ID
- 3) 脱机更改序列号
- 4) 保存后卸载已挂载

依次循环完成以上后：

- 1) 重建 Install.AE.Temp.wim 文件
- 2) 移动 Install.wim 到备份目录

- 3) 重命名 Install.AE.Temp.wim 为 Install.wim

#### 4.2. 附加版：开始

需要依赖 Wimblı 才能生成，不提供代码复制。

- `Install.Additional.Edition.ps1`
  - `\Expand\Install\Install.Additional.Edition.ps1`
  - [https://github.com/ilikeyi/solutions/blob/main/\\_Learn/Packaging.tutorial/OS.10/22H2/Expand/Install/Install.Additional.Edition.ps1](https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.10/22H2/Expand/Install/Install.Additional.Edition.ps1)
- 复制以下代码到文本编辑框里，请输入绝对路径后再复制到终端里运行。

```
& "D:\YiSolutions\_Learn\Packaging.tutorial\OS.10\22H2\Expand\Install\Install.Additional.Edition.ps1"
```

## 章节 4 常见问题

### A. 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:\ISOTEMP_Custom\Install\Install\Mount" -Discard
```

```
Dismount-WindowsImage -Path "D:\ISOTEMP_Custom\Install\WinREMount" -Discard
```

```
Dismount-WindowsImage -Path "D:\ISOTEMP_Custom\Boot\Boot\Mount" -Discard
```

### B. 修复挂载出现异常的问题

#### 1. 查看已挂载

```
Get-WindowsImage -Mounted
```

#### 2. 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
```

#### 3. 删除与已损坏的已装载映像关联的所有资源。

```
Clear-WindowsCorruptMountPoint
```

```
Dism /cleanup-wim
```

### C. 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

### 1.1. 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; } }}}}
```

### 1.2. 手动删除

#### 1.2.1. 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](#)

#### 1.2.2. 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](#)

#### 1.2.3. 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。

## 2. 磁盘清理

运行 [cleanmgr](#)，选择要清理的磁盘和类型。



Yi's 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>

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文档版本：5.0

首次公开发行时间：4 / 2023

文档里包含的所有脚本，最后测试时间：1 / 2026

文档最近更新日期：1 / 2026

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