



YI'S SOLUTIONS

## MICROSOFT WINDOWS 11 24H2 AND 25H2

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

在这背后藏着很多的隐藏故事，想解开这些，你准备好开始这场封装之旅了吗？

已过时的：

- Microsoft Windows 10 22H2

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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（或者说 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-d1cfee92f442/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

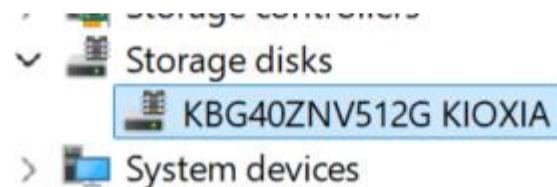
Windows 安全模式默认不加载此 NVMe 驱动，故还需执行以下命令使其加载，生效后安全模式即可正常使用

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

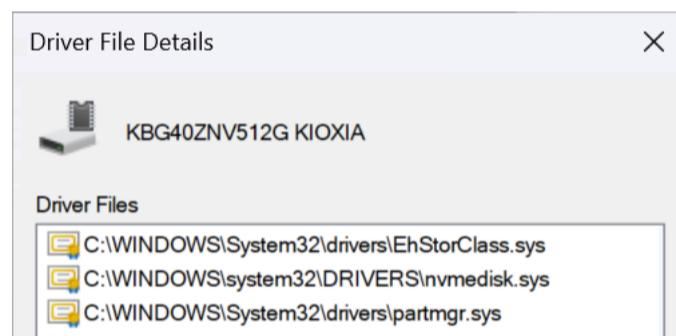
```
reg add HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\SafeBoot\Network\{75416E63-5912-4DFA-AE8F-3EFACCAFFB14}
```

### 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. 虚拟内存盘

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. 7-Zip
  - 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. 制作 Windows 11 24H2 和 25H2 时，请使用 Windows 11 24H2 (26100.1742) 初始版本；
- 1.1.2. 每版本更新时请重新制作镜像，例如从 24H2 跨越到 25H2 时，应避免出现其它兼容性问题请勿在旧镜像基础上制作；
- 1.1.3. 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；
- 1.1.4. 制作中请使用“初始版本”、“开发者版”制作。微软官方文档里曾短暂的出现过在制作中必须使用初始版本，后来这句在官方文档里却被删除了；
- 1.1.5. 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。
- 1.1.6. 进化过程：Microsoft Windows 11 24H2, Build 26100.1742 +
  - 检查点更新 (KB5054156) +
  - 初始版本累积更新 (KB5043080) +
  - 服务堆栈更新 (SSU) + 累积更新 (KB5074105)= OS Build 26200.7705

#### 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\\_11\\_consumer\\_editions\\_version\\_24h2\\_x64\\_dvd\\_1d5fcad3.iso](https://files.rg-adguard.net/file/1ebf9c88-803f-636e-ad8a-5b60966dcd64)

文件列表：<https://files.rg-adguard.net/file/1ebf9c88-803f-636e-ad8a-5b60966dcd64>

1.2.1.2. 文件名：[en-us\\_windows\\_11\\_business\\_editions\\_version\\_24h2\\_x64\\_dvd\\_59a1851e.iso](https://files.rg-adguard.net/file/4bfa831a-0073-3bb4-5dde-6c07df68d7e3)

文件列表：<https://files.rg-adguard.net/file/4bfa831a-0073-3bb4-5dde-6c07df68d7e3>

1.2.1.3. 文件名: [en-us\\_windows\\_11\\_iot\\_enterprise\\_version\\_24h2\\_x64\\_dvd\\_3a99b72b.iso](#)

文件列表: <https://files.rg-adguard.net/file/d8ee9445-b9eb-5f45-f75e-e92a057820bf>

1.2.1.4. 文件名: [en-us\\_windows\\_11\\_enterprise\\_ltsc\\_2024\\_x64\\_dvd\\_965cfb00.iso](#)

文件列表: <https://files.rg-adguard.net/file/142ca376-487f-e858-a606-e120e70b9d02>

1.2.1.5. 文件名: [en-us\\_windows\\_11\\_iot\\_enterprise\\_ltsc\\_2024\\_x64\\_dvd\\_f6b14814.iso](#)

1.2.1.6. 文件列表: <https://files.rg-adguard.net/file/9160d5cf-f480-a1c9-a62c-b75ab0708d2c>

1.2.2. arm64

1.2.2.1. 文件名: [en-us\\_windows\\_11\\_consumer\\_editions\\_version\\_24h2\\_arm64\\_dvd\\_4cc70bf6.iso](#)

文件列表: <https://files.rg-adguard.net/file/9f751f60-0919-4a5a-8fb5-7bd6340a5df6>

1.2.2.2. 文件名: [en-us\\_windows\\_11\\_business\\_editions\\_version\\_24h2\\_arm64\\_dvd\\_ad92e9d8.iso](#)

文件列表: <https://files.rg-adguard.net/file/cfb08972-7f11-f3a5-ae7c-8f084dc1996e>

1.2.2.3. 文件名: [en-us\\_windows\\_11\\_iot\\_enterprise\\_version\\_24h2\\_arm64\\_dvd\\_e9155a10.iso](#)

文件列表: <https://files.rg-adguard.net/file/bacf17e5-a307-5a01-1a35-71268dc0c2e3>

1.2.2.4. 文件名: [en-us\\_windows\\_11\\_iot\\_enterprise\\_ltsc\\_2024\\_arm64\\_dvd\\_ec517836.iso](#)

文件列表: <https://files.rg-adguard.net/file/de2234af-1514-ff50-50af-5a3395549c42>

1.3. 示例下载 [en-us\\_windows\\_11\\_consumer\\_editions\\_version\\_24h2\\_x64\\_dvd\\_1d5fcad3.iso](#) 后, 解压到: D:\en-us\_windows\_11\_consumer\_editions\_version\_24h2\_x64\_dvd\_1d5fcad3

**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\_11\_consumer\_editions\_version\_24h2\_x64\_dvd\_1d5fcad3 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\\_11\\_business\\_editions\\_version\\_24h2\\_x64\\_dvd\\_59a1851e.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\\_11\\_iot\\_enterprise\\_version\\_24h2\\_x64\\_dvd\\_3a99b72b.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、3，添加命令：

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

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

- 1.5.3. 下载 [en-us\\_windows\\_11\\_enterprise\\_ltsc\\_2024\\_x64\\_dvd\\_965cfb00.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\\_11\\_iot\\_enterprise\\_ltsc\\_2024\\_x64\\_dvd\\_f6b14814.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、3，添加命令：

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

```
Export-WindowsImage -SourceImagePath "H:\sources\install.wim" -SourceIndex 3 -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。

1.8. 报告

查看映像包里已安装：语言包、已关联的语言包组件、预安装 InBox Apps 应用程序等详细信息，下载报告后，使用 Excel 软件打开 .xlsx。

1.8.1. 报告：总览

包含：ISO 系统安装包、映像版本、区域、区域关联、已关联的语言包组件等。

[Report.Overview.xlsx](#)

- [\Expand\Install\Report.Overview.xlsx](#)
- [https://raw.githubusercontent.com/ilikeyi/solutions/main/\\_Learn/Packaging/tutorial/OS.11/24H2/Expand/Install/Report.Overview.xlsx](https://raw.githubusercontent.com/ilikeyi/solutions/main/_Learn/Packaging/tutorial/OS.11/24H2/Expand/Install/Report.Overview.xlsx)

1.8.2. 报告：完整

包含：ISO 系统安装包、映像版本、区域、区域关联、已关联的语言包组件、已安装 InBox Apps 预安装应用程序等。

[en-us](#)、[ar-sa](#)、[bg-bg](#)、[cs-cz](#)、[da-dk](#)、[de-de](#)、[el-gr](#)、[en-gb](#)、[es-es](#)、[es-mx](#)、[et-ee](#)、[fi-fi](#)、[fr-ca](#)、[fr-fr](#)、[he-il](#)、[hr-hr](#)、[hu-hu](#)、[it-it](#)、[ja-jp](#)、[ko-kr](#)、[lt-lt](#)、[lv-lv](#)、[nb-no](#)、[nl-nl](#)、[pl-pl](#)、[pt-br](#)、[pt-pt](#)、[ro-ro](#)、[ru-ru](#)、[sk-sk](#)、[sl-si](#)、[sr-latn-rs](#)、[sv-se](#)、[th-th](#)、[tr-tr](#)、[uk-ua](#)、[zh-cn](#)、[zh-tw](#)

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

## 2.2. 语言包：下载

2.2.1. 下载：[https://software-static.download.prss.microsoft.com/dbazure/888969d5-f34g-4e03-ac9d-1f9786c66749/26100.1.240331-1435.ge\\_release\\_amd64fre\\_CLIENT\\_LOF\\_PACKAGES\\_OEM.iso](https://software-static.download.prss.microsoft.com/dbazure/888969d5-f34g-4e03-ac9d-1f9786c66749/26100.1.240331-1435.ge_release_amd64fre_CLIENT_LOF_PACKAGES_OEM.iso)

文件列表：<https://files.rg-adguard.net/file/025cf5d-f5fa-7d00-246e-76c04a40e210>

## 3. InBox Apps

### 3.1. 下载最新的 InBox Apps 安装包

下载连接：[https://software-static.download.prss.microsoft.com/dbazure/888969d5-f34g-4e03-ac9d-1f9786c66749/26100.6584.250904-1728.ge\\_release\\_svc\\_prod1\\_amd64fre\\_InboxApps.iso](https://software-static.download.prss.microsoft.com/dbazure/888969d5-f34g-4e03-ac9d-1f9786c66749/26100.6584.250904-1728.ge_release_svc_prod1_amd64fre_InboxApps.iso)

文件列表：<https://files.rg-adguard.net/file/ada764e8-717a-d080-099b-d3aa44b84dab>

### 3.2. 修复缺少项和回退旧版本

3.2.1. Microsoft.SecHealthUI

26100.6584.250904-1728.ge\_release\_svc\_prod1\_amd64fre\_InboxApps.iso 里安装包

Microsoft.SecHealthUI\_8wekyb3d8bbwe.x64.appx 提供的版本号：1000.26100.6584.00，安装此版本后无法汉化，必须使用该版本：1000.26100.1.0，下载时请可通过以下方式获取：

3.2.1.1. 从 Github 里下载

3.2.1.1.1. Microsoft.SecHealthUI\_8wekyb3d8bbwe.x64.appx

[https://github.com/ilkeyi/Solutions/raw/refs/heads/main/\\_Learn/Download.Package/Windows.11.25H2/Microsoft.SecHealthUI\\_8wekyb3d8bbwe.x64.appx](https://github.com/ilkeyi/Solutions/raw/refs/heads/main/_Learn/Download.Package/Windows.11.25H2/Microsoft.SecHealthUI_8wekyb3d8bbwe.x64.appx)

3.2.1.1.2. Microsoft.SecHealthUI\_8wekyb3d8bbwe.arm64.appx

[https://github.com/ilkeyi/Solutions/raw/refs/heads/main/\\_Learn/Download.Package/Windows.11.25H2/Microsoft.SecHealthUI\\_8wekyb3d8bbwe.arm64.appx](https://github.com/ilkeyi/Solutions/raw/refs/heads/main/_Learn/Download.Package/Windows.11.25H2/Microsoft.SecHealthUI_8wekyb3d8bbwe.arm64.appx)

3.2.1.2. 从 uupdump.net 里搜索并下载

打开<https://uupdump.net> 后：在菜单栏选择 Windows 11，下拉菜单选择 24H2，查找或在搜索栏上搜索“26100.2”，未搜索到请选择其它版本里查找，显示所有文件后搜索名称“SecHealthUI”，注意查看

SHA1 是否相同，不是相同就找其它版本。

#### 3.2.1.2.1. x64

- 打开 [https://uupdump.net/getfile.php?id=f85d43a4-60e9-4607-8997-a761beb7ef77&file=Microsoft.SecHealthUI\\_8wekyb3d8bbwe.appx](https://uupdump.net/getfile.php?id=f85d43a4-60e9-4607-8997-a761beb7ef77&file=Microsoft.SecHealthUI_8wekyb3d8bbwe.appx) 后显示结果  
“Microsoft.SecHealthUI\_8wekyb3d8bbwe.appx | SHA1:  
81e1da943d518a7eddc92fa1bc572b42aa458e28 | 7.01 MiB”
- 选择此文件并进行下载，下载完成后，获得文件 “5bf271eb-c77f-4760-b6c8-08de575abc24”，重命名为：Microsoft.SecHealthUI\_8wekyb3d8bbwe.x64.appx

#### 3.2.1.2.2. arm64

- 打开 [https://uupdump.net/getfile.php?id=a7c6c75e-5d2b-4d77-b7dd-5588614da877&file=Microsoft.SecHealthUI\\_8wekyb3d8bbwe.appx](https://uupdump.net/getfile.php?id=a7c6c75e-5d2b-4d77-b7dd-5588614da877&file=Microsoft.SecHealthUI_8wekyb3d8bbwe.appx) 后显示结果  
“Microsoft.SecHealthUI\_8wekyb3d8bbwe.appx | SHA1:  
b1daf2046d448e9d0504661cf4cfdbb7e4cdbea2 | 8 MiB”
- 选择此文件并进行下载，下载完成后，获得文件 “1fb6d544-e4ee-470a-8402-76fdc849d97c”，重命名为：Microsoft.SecHealthUI\_8wekyb3d8bbwe.arm64.appx

#### 3.2.2. Microsoft.HEVCVideoExtension

26100.6584.250904-1728.ge\_release\_svc\_prod1\_amd64fre\_InboxApps.iso 里未包含

Microsoft.HEVCVideoExtension\_8wekyb3d8bbwe.appxbundle 安装包文件，必须使用该版本：2.4.13.0，下载时请可通过以下方式获取：

##### 3.2.2.1. 无法获得文件时，请通过手动方式下载：

###### 3.2.2.1.1. Microsoft.HEVCVideoExtension\_8wekyb3d8bbwe.appxbundle

###### 3.2.2.1.1.1. 直连下载

[https://github.com/ilkeyi/Solutions/raw/refs/heads/main/\\_Learn/Download.Package/Windows.11.25H2/Microsoft.HEVCVideoExtension\\_8wekyb3d8bbwe.appxbundle](https://github.com/ilkeyi/Solutions/raw/refs/heads/main/_Learn/Download.Package/Windows.11.25H2/Microsoft.HEVCVideoExtension_8wekyb3d8bbwe.appxbundle)

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

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

<https://www.microsoft.com/store/productId/9N4WGH0Z6V>

HQ

## 3.2.2.1.2.2. 搜索结果：

[Microsoft.HEVCVideoExtension\\_2.4.13.0.\\*.appxbundle](#)

## 3.2.2.1.2.3. 下载后保存到“桌面”，重命名：

[Microsoft.HEVCVideoExtension\\_8wekyb3d8bbwe.appxbundle](#)

## 3.2.2.1.2. 许可证

## 3.2.2.1.2.1. 预保存的许可证

将 {所在位

置}:\YiSolutions\\_Learn\Packaging.tutorial\OS.11\25H2\Expand\License\15a63

83d188a454ca98e15931ce48dc4\_License1.xml 复制到桌面，本地没有就在  
线下载获取。

## 3.2.2.1.2.2. 通过在线下载连接，下载文件后，保存到桌面

[https://github.com/ilikeyi/Solutions/raw/refs/heads/main/\\_Learn/Download.Package/Windows.11.25H2/15a6383d188a454ca98e15931ce48dc4\\_License1.xml](https://github.com/ilikeyi/Solutions/raw/refs/heads/main/_Learn/Download.Package/Windows.11.25H2/15a6383d188a454ca98e15931ce48dc4_License1.xml)

## 3.2.3. 通过以上方法下载后，将获得以下 4 个文件：

3.2.3.1. [Microsoft.SecHealthUI\\_8wekyb3d8bbwe.x64.appx](#)3.2.3.2. [Microsoft.SecHealthUI\\_8wekyb3d8bbwe.arm64.appx](#)3.2.3.3. [Microsoft.HEVCVideoExtension\\_8wekyb3d8bbwe.appxbundle](#)3.2.3.4. [15a6383d188a454ca98e15931ce48dc4\\_License1.xml](#)3.2.4. 使用 ISO 编辑工具，编辑 [26100.6584.250904-1728.ge\\_release\\_svc\\_prod1\\_amd64fre\\_InboxApps.iso](#)，将已准备好的文件  
添加到 [\[ISO\]:\packages](#) 目录里；

## B. 语言包：提取

## I. 语言包：准备

挂载 [26100.1.240331-1435.ge\\_release\\_amd64fre\\_CLIENT\\_LOF\\_PACKAGES\\_OEM.iso](#) 或解压到任意位置；

## 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

## 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.11/24H2/Expand/Extract.ps1](https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/24H2/Expand/Extract.ps1)
- 复制代码

```
Function Extract_Language {
```

```
param($Act, $NewLang, $Expand, $ISO, $SaveTo)
```

```
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", "wu-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 = @(
            "LanguagesAndOptionalFeatures\Microsoft-Windows-LanguageFeatures-Fonts-{DiyLang}-Package~31bf3856ad364e35~AMD64~~.cab";
            "LanguagesAndOptionalFeatures\Microsoft-Windows-Client-Language-Pack_x64_{Lang}.cab";
            "LanguagesAndOptionalFeatures\Microsoft-Windows-LanguageFeatures-Basic-{Lang}-Package~31bf3856ad364e35~AMD64~~.cab";
            "LanguagesAndOptionalFeatures\Microsoft-Windows-LanguageFeatures-Handwriting-{Lang}-Package~31bf3856ad364e35~AMD64~~.cab";
            "LanguagesAndOptionalFeatures\Microsoft-Windows-LanguageFeatures-OCR-{Lang}-Package~31bf3856ad364e35~AMD64~~.cab";
            "LanguagesAndOptionalFeatures\Microsoft-Windows-LanguageFeatures-Speech-{Lang}-Package~31bf3856ad364e35~AMD64~~.cab";
            "LanguagesAndOptionalFeatures\Microsoft-Windows-LanguageFeatures-TextToSpeech-{Lang}-Package~31bf3856ad364e35~AMD64~~.cab";
            "LanguagesAndOptionalFeatures\Microsoft-Windows-InternetExplorer-Optional-Package~31bf3856ad364e35~AMD64~{Lang}~.cab";
            "LanguagesAndOptionalFeatures\Microsoft-Windows-Notepad-FoD-Package~31bf3856ad364e35~AMD64~{Lang}~.cab";
            "LanguagesAndOptionalFeatures\Microsoft-Windows-Notepad-System-FoD-Package~31bf3856ad364e35~AMD64~{Lang}~.cab";
            "LanguagesAndOptionalFeatures\Microsoft-Windows-Notepad-System-FoD-Package~31bf3856ad364e35~AMD64~{Lang}~.cab";
            "LanguagesAndOptionalFeatures\Microsoft-Windows-MediaPlayer-Package~31bf3856ad364e35~AMD64~{Lang}~.cab";
            "LanguagesAndOptionalFeatures\Microsoft-Windows-MediaPlayer-Package~31bf3856ad364e35~AMD64~{Lang}~.cab";
            "LanguagesAndOptionalFeatures\Microsoft-Windows-MSPaint-FOD-Package~31bf3856ad364e35~AMD64~{Lang}~.cab";
            "LanguagesAndOptionalFeatures\Microsoft-Windows-MSPaint-FOD-Package~31bf3856ad364e35~AMD64~{Lang}~.cab";
            "LanguagesAndOptionalFeatures\Microsoft-Windows-PowerShell-ISE-FOD-Package~31bf3856ad364e35~AMD64~{Lang}~.cab";
            "LanguagesAndOptionalFeatures\Microsoft-Windows-PowerShell-ISE-FOD-Package~31bf3856ad364e35~AMD64~{Lang}~.cab";
            "LanguagesAndOptionalFeatures\Microsoft-Windows-Printing-PMCPPC-FoD-Package~31bf3856ad364e35~AMD64~{Lang}~.cab";
            "LanguagesAndOptionalFeatures\Microsoft-Windows-StepsRecorder-Package~31bf3856ad364e35~AMD64~{Lang}~.cab";
            "LanguagesAndOptionalFeatures\Microsoft-Windows-StepsRecorder-Package~31bf3856ad364e35~AMD64~{Lang}~.cab";
            "LanguagesAndOptionalFeatures\Microsoft-Windows-WMIC-FoD-Package~31bf3856ad364e35~AMD64~{Lang}~.cab";
            "LanguagesAndOptionalFeatures\Microsoft-Windows-WMIC-FoD-Package~31bf3856ad364e35~AMD64~{Lang}~.cab";
            "LanguagesAndOptionalFeatures\HyperV-OptionalFeature-VirtualMachinePlatform-Client-Disabled-FOD-Package~31bf3856ad364e35~AMD64~{Lang}~.cab";
            "LanguagesAndOptionalFeatures\Microsoft-Windows-DirectoryServices-ADAM-Client-FOD-Package~31bf3856ad364e35~AMD64~{Lang}~.cab"
        )
    }
)
```

```
Package~31bf3856ad364e35~AMD64~{Lang}~.cab"; "LanguagesAndOptionalFeatures\Microsoft-Windows-DirectoryServices-ADAM-Client-FOD-
Package~31bf3856ad364e35~wow64~{Lang}~.cab"; "LanguagesAndOptionalFeatures\Microsoft-Windows-EnterpriseClientSync-Host-FOD-
Package~31bf3856ad364e35~AMD64~{Lang}~.cab"; "LanguagesAndOptionalFeatures\Microsoft-Windows-EnterpriseClientSync-Host-FOD-
Package~31bf3856ad364e35~wow64~{Lang}~.cab"; "LanguagesAndOptionalFeatures\Microsoft-Windows-ProjFS-OptionalFeature-FOD-
Package~31bf3856ad364e35~AMD64~{Lang}~.cab"; "LanguagesAndOptionalFeatures\Microsoft-Windows-SenseClient-FoD-
Package~31bf3856ad364e35~AMD64~{Lang}~.cab"; "LanguagesAndOptionalFeatures\Microsoft-Windows-SnippingTool-FoD-
Package~31bf3856ad364e35~AMD64~{Lang}~.cab"; "LanguagesAndOptionalFeatures\Microsoft-Windows-SimpleTCP-FOD-
Package~31bf3856ad364e35~AMD64~{Lang}~.cab"; "LanguagesAndOptionalFeatures\Microsoft-Windows-SmbDirect-FOD-
Package~31bf3856ad364e35~AMD64~{Lang}~.cab"; "LanguagesAndOptionalFeatures\Microsoft-Windows-Telnet-Client-FOD-
Package~31bf3856ad364e35~AMD64~{Lang}~.cab"; "LanguagesAndOptionalFeatures\Microsoft-Windows-TerminalServices-AppServer-Client-FOD-
Package~31bf3856ad364e35~AMD64~{Lang}~.cab"; "LanguagesAndOptionalFeatures\Microsoft-Windows-TerminalServices-AppServer-Client-FOD-
Package~31bf3856ad364e35~wow64~{Lang}~.cab"; "LanguagesAndOptionalFeatures\Microsoft-Windows-TFTP-Client-FOD-
Package~31bf3856ad364e35~AMD64~{Lang}~.cab"; "LanguagesAndOptionalFeatures\Microsoft-Windows-VBSCRIPT-FoD-Package~31bf3856ad364e35~AMD64~{Lang}~.cab";
"LanguagesAndOptionalFeatures\Microsoft-Windows-VBSCRIPT-FoD-Package~31bf3856ad364e35~wow64~{Lang}~.cab"; "LanguagesAndOptionalFeatures\Microsoft-
Windows-WinOcr-FOD-Package~31bf3856ad364e35~AMD64~{Lang}~.cab"; "LanguagesAndOptionalFeatures\Microsoft-Windows-WinOcr-FOD-
Package~31bf3856ad364e35~wow64~{Lang}~.cab"; "LanguagesAndOptionalFeatures\Microsoft-Windows-InternationalFeatures-{Specific}-
Package~31bf3856ad364e35~amd64~{Lang}~.cab"; ) ); @{ Path = "Install\WinRE"; Rule = @(
    "Windows Preinstallation Environment\x64\WinPE_OCs\WinPE-FontSupport-{Lang}.cab",
    "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\lp.cab",
    "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\winpe-securestartup_{Lang}.cab",
    "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\winpe-audioBroker_{Lang}.cab",
    "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\winpe-audiobrokers_{Lang}.cab",
    "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\winpe-audiocore_{Lang}.cab",
    "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\winpe-connectivity_{Lang}.cab",
    "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\winpe-narrator_{Lang}.cab",
    "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\winpe-enhancedstorage_{Lang}.cab",
    "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\winpe-scripting_{Lang}.cab",
    "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\winpe-speech-tts_{Lang}.cab",
    "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\winpe-srh_{Lang}.cab",
    "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\winpe-srt_{Lang}.cab",
    "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\winpe-wds-tools_{Lang}.cab",
    "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\winpe-wmi_{Lang}.cab",
    "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\winpe-appxDeployment_{Lang}.cab",
    "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\winpe-appxPackaging_{Lang}.cab",
    "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\winpe-storageWMI_{Lang}.cab",
    "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\winpe-wifi_{Lang}.cab",
    "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\winpe-windowsupdate_{Lang}.cab",
    "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\winpe-rejuv_{Lang}.cab",
    "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\winpe-opcServices_{Lang}.cab",
    "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\winpe-hta_{Lang}.cab
) ); @{ Path = "Boot\Boot"; Rule = @(
    "Windows Preinstallation Environment\x64\WinPE_OCs\{Lang}\lp.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
) );
$NewFonts = Match_Required_Fonts -Lang $NewLang
$SpecificPackage = Match_Other_Region_Specific_Requirements -Lang $NewLang
Foreach ($item in $Expand) {
    $Language = @()
    Foreach ($itemList in $AdvLanguage) {
        if ($itemList.Path -eq $item) {
            Foreach ($PrintLang in $itemList.Rule) { $Language += "$($PrintLang)".Replace("{Lang}", $NewLang).Replace("{DiyLang}", $NewFonts).Replace("{Specific}", $SpecificPackage); }
        }
    }
    Extract_Process -NewSaveTo $itemList.Path -Package $Language -Name $item
}
```

```
}

}

}

}

$Extract_language_Pack = @(
    @{ Tag = "zh-CN"; Act = "Add"; Scope = @( "Install\Install"; "Install\WinRE"; "Boot\Boot" ) }
    @{ Tag = "en-US"; Act = "Del"; Scope = @( "Install\Install"; "Install\WinRE"; "Boot\Boot" ) }
)

ForEach ($item in $Extract_language_Pack) { Extract_Language -Act $item.Act -NewLang $item.Tag -Expand $item.Scope -ISO "Auto" -SaveTo "D:\ISOTEMP_Custom"; }
```

### 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/ikeyi/solutions/blob/main/\\_Learn/Packaging/tutorial/OS.11/24H2/Expand/Install/WinRE/WinRE.Instl.lang.ps1](https://github.com/ikeyi/solutions/blob/main/_Learn/Packaging/tutorial/OS.11/24H2/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 = "*WinPE-appxdeployment*"; File = "winpe-appxdeployment_zh-CN.cab"; };
@{ Match = "*WinPE-AppxPackaging*"; File = "winpe-appxpackaging_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 = "*connectivity*"; File = "winpe-connectivity_zh-CN.cab"; };
@{ Match = "*EnhancedStorage*"; File = "winpe-enhancedstorage_zh-CN.cab"; }; @{ Match = "*hta*"; File = "winpe-hta_zh-CN.cab"; }; @{ Match = "*Narrator*"; File = "winpe-narrator_zh-CN.cab"; };
@{ Match = "*opcservices*"; File = "winpe-opcservices_zh-CN.cab"; }; @{ Match = "*rejuv*"; File = "winpe-rejuv_zh-CN.cab"; }; @{ Match = "*scripting*";
File = "winpe-scripting_zh-CN.cab"; }; @{ Match = "*SecureStartup*"; File = "winpe-securestartup_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 = "*StorageWMI*"; File = "winpe-storagewmi_zh-CN.cab"; };
@{ Match = "*wds-tools*"; File = "winpe-wds-tools_zh-CN.cab"; }; @{ Match = "*WiFi*"; File = "winpe-wifi_zh-CN.cab"; }; @{ Match = "*windowsupdate*";
File = "winpe-windowsupdate_zh-CN.cab"; }; @{ Match = "*WinPE-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; }}}
}
```

## 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=KB5070186>，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.sfdelivery.mp.microsoft.com/filestreamingservice/files/4bbd25e0-ac80-41bc-bd38-1bdb0bb63d6/public/windows11.0-kb5070186-x64\\_71c4a1f083355193e464c0bd3e538dd34753f8dd.cab](https://catalog.sfdelivery.mp.microsoft.com/filestreamingservice/files/4bbd25e0-ac80-41bc-bd38-1bdb0bb63d6/public/windows11.0-kb5070186-x64_71c4a1f083355193e464c0bd3e538dd34753f8dd.cab)

- 安装

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Install\WinRE\Mount" -PackagePath  
"D:\ISOTEMP_Custom\Install\WinRE\Update\windows11.0-kb5070186-  
x64_71c4a1f083355193e464c0bd3e538dd34753f8dd.cab"
```

## 3.1.5.1.2. arm64

- 直连下载

[https://catalog.sfdelivery.mp.microsoft.com/filestreamingservice/files/842afa37-e29b-435c-9c22-36f32e81e5c3/public/windows11.0-kb5070186-arm64\\_04864c55245d82fec095d6677bc26b4ed70cb1bf.cab](https://catalog.sfdelivery.mp.microsoft.com/filestreamingservice/files/842afa37-e29b-435c-9c22-36f32e81e5c3/public/windows11.0-kb5070186-arm64_04864c55245d82fec095d6677bc26b4ed70cb1bf.cab)

- 安装

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Install\WinRE\Mount" -PackagePath  
"D:\ISOTEMP_Custom\Install\WinRE\Update\windows11.0-kb5070186-  
arm64_04864c55245d82fec095d6677bc26b4ed70cb1bf.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.11/24H2/Expand/Install/WinRE/WinRE.Rebuild.ps1](https://github.com/ilkeyi/solutions/blob/main/_Learn/Packaging/tutorial/OS.11/24H2/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.11/24H2/Expand/Install/WinRE/WinRE.Backup.ps1](https://github.com/ilkeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/24H2/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.11/24H2/Expand/Install/Install.Instl.lang.ps1](https://github.com/ilkeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/24H2/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 = @();

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

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

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

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

    if ($Script:Init_Folder_All_File.Count -gt 0) { ForEach ($item in $Script:Init_Folder_All_File) { Write-host " $($item)"; } } else { Write-host "There are no language pack files locally"; return; } } else { Write-Host "Path does not exist: $($Sources)\$($Lang)"; return; }

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

$Script:Search_File_Order = @()

@{ Name = "Fonts"; Description = "Fonts"; Rule = @( "*Fonts*"; ); }

@{ Name = "Basic"; Description = "Basic"; Rule = @( "*LanguageFeatures-Basic*"; "*Client*Language*Pack*"; ); }

@{ Name = "OCR"; Description = "Optical character recognition"; Rule = @( "*LanguageFeatures-OCR*"; ); }

@{ Name = "Handwriting"; Description = "Handwriting recognition"; Rule = @( "*LanguageFeatures-Handwriting*"; ); }

@{ Name = "TextToSpeech"; Description = "Text-to-speech"; Rule = @( "*LanguageFeatures-TextToSpeech*"; ); }

@{ Name = "Speech"; Description = "Speech recognition"; Rule = @( "*LanguageFeatures-Speech*"; ); }

@{ Name = "RegionSpecific"; Description = "Other region-specific requirements"; Rule = @( "*InternationalFeatures*"; ); }

@{ Name = "Retail"; Description = "Retail demo experience"; Rule = @( "*RetailDemo*"; ); }

@{ Name = "Features_On_Demand"; Description = "Features on demand"; Rule = @(
    "*InternetExplorer*x~x86~*"; "*InternetExplorer*x~x64~*";
    "*InternetExplorer*x~amd64~*"; "*InternetExplorer*x~wow64~*"; "*InternetExplorer*x~arm64.x86~*"; "*InternetExplorer*x~arm64~*"; "*MSPaint*x~x86~*"; "*MSPaint*x~x64~*";
    "*MSPaint*x~amd64~*"; "*MSPaint*x~wow64~*"; "*MSPaint*x~arm64.x86~*"; "*MSPaint*x~arm64~*"; "*Notepad-FoD-Package*x~x86~*"; "*Notepad-FoD-Package*x~x64~*";
    "*Notepad-FoD-Package*x~amd64~*"; "*Notepad-FoD-Package*x~wow64~*"; "*Notepad-FoD-Package*x~arm64.x86~*"; "*Notepad-FoD-Package*x~arm64~*"; "*Notepad-FoD-Package*x~x86~*";
    "*Notepad-FoD-Package*x~x64~*"; "*Notepad-FoD-Package*x~amd64~*"; "*Notepad-FoD-Package*x~wow64~*"; "*Notepad-FoD-Package*x~arm64~*"; "*Notepad-FoD-Package*x~x86~*";
    "*Notepad-FoD-Package*x~x64~*"; "*Notepad-System-FoD-Package*x~x86~*"; "*Notepad-System-FoD-Package*x~amd64~*"; "*Notepad-System-FoD-Package*x~wow64~*";
    "*Notepad-System-FoD-Package*x~arm64.x86~*"; "*Notepad-System-FoD-Package*x~arm64~*"; "*MediaPlayer*x~x86~*"; "*MediaPlayer*x~x64~*";
    "*MediaPlayer*x~amd64~*"; "*MediaPlayer*x~wow64~*"; "*MediaPlayer*x~arm64.x86~*"; "*MediaPlayer*x~arm64~*"; "*PowerShell*ISE*x~x86~*";
    "*PowerShell*ISE*x~x64~*"; "*PowerShell*ISE*x~amd64~*"; "*PowerShell*ISE*x~wow64~*"; "*PowerShell*ISE*x~arm64.x86~*"; "*PowerShell*ISE*x~arm64~*";
    "*StepsRecorder*x~x86~*"; "*StepsRecorder*x~x64~*"; "*StepsRecorder*x~amd64~*"; "*StepsRecorder*x~wow64~*"; "*StepsRecorder*x~arm64.x86~*";
    "*StepsRecorder*x~arm64~*"; "*SnippingTool*x~x86~*"; "*SnippingTool*x~x64~*"; "*SnippingTool*x~amd64~*"; "*SnippingTool*x~wow64~*"; "*SnippingTool*x~arm64.x86~*";
    "*SnippingTool*x~arm64~*"; "*WMIC*x~x86~*"; "*WMIC*x~x64~*"; "*WMIC*x~amd64~*"; "*WMIC*x~wow64~*"; "*WMIC*x~arm64.x86~*"; "*WMIC*x~arm64~*";
    "*WordPad*x~x86~*"; "*WordPad*x~x64~*"; "*WordPad*x~amd64~*"; "*WordPad*x~wow64~*"; "*WordPad*x~arm64.x86~*"; "*WordPad*x~arm64~*"; "*Printing-WFS*x~x86~*";
    "*Printing-WFS*x~x64~*"; "*Printing-WFS*x~amd64~*"; "*Printing-WFS*x~wow64~*"; "*Printing-WFS*x~arm64.x86~*"; "*Printing-WFS*x~arm64~*"; "*Printing-PMCPPC*x~x86~*";
    "*Printing-PMCPPC*x~x64~*"; "*Printing-PMCPPC*x~amd64~*"; "*Printing-PMCPPC*x~wow64~*"; "*Printing-PMCPPC*x~arm64.x86~*"; "*Printing-PMCPPC*x~arm64~*";
    "*Telnet-Client*x~x86~*"; "*Telnet-Client*x~x64~*"; "*Telnet-Client*x~amd64~*"; "*Telnet-Client*x~wow64~*"; "*Telnet-Client*x~arm64.x86~*"; "*Telnet-Client*x~arm64~*";
    "*TFTP-Client*x~x86~*"; "*TFTP-Client*x~x64~*"; "*TFTP-Client*x~amd64~*"; "*TFTP-Client*x~wow64~*"; "*TFTP-Client*x~arm64.x86~*"; "*TFTP-Client*x~arm64~*";
    "*VBSCRIPT*x~x86~*"; "*VBSCRIPT*x~x64~*"; "*VBSCRIPT*x~amd64~*"; "*VBSCRIPT*x~wow64~*"; "*VBSCRIPT*x~arm64.x86~*"; "*VBSCRIPT*x~arm64~*"; "*WinOcr-FOD-";
    Package*x~x86~*"; "*WinOcr-FOD-Package*x~x64~*"; "*WinOcr-FOD-Package*x~amd64~*"; "*WinOcr-FOD-Package*x~wow64~*"; "*WinOcr-FOD-Package*x~arm64.x86~*";
    "*WinOcr-FOD-Package*x~arm64~*"; "*ProjFS-OptionalFeature-FOD-Package*x~x86~*"; "*ProjFS-OptionalFeature-FOD-Package*x~x64~*"; "*ProjFS-OptionalFeature-FOD-";
    Package*x~amd64~*"; "*ProjFS-OptionalFeature-FOD-Package*x~wow64~*"; "*ProjFS-OptionalFeature-FOD-Package*x~arm64.x86~*"; "*ProjFS-OptionalFeature-FOD-";
    Package*x~arm64~*"; "*ServerCoreFonts-NonCritical-Fonts-BitmapFonts-FOD-Package*x~x86~*"; "*ServerCoreFonts-NonCritical-Fonts-BitmapFonts-FOD-Package*x~x64~*";
    "*ServerCoreFonts-NonCritical-Fonts-BitmapFonts-FOD-Package*x~amd64~*"; "*ServerCoreFonts-NonCritical-Fonts-BitmapFonts-FOD-Package*x~wow64~*";
    "*ServerCoreFonts-NonCritical-Fonts-BitmapFonts-FOD-Package*x~arm64.x86~*"; "*ServerCoreFonts-NonCritical-Fonts-BitmapFonts-FOD-Package*x~arm64~*";
    "*ServerCoreFonts-NonCritical-Fonts-Support-FOD-Package*x~x86~*"; "*ServerCoreFonts-NonCritical-Fonts-Support-FOD-Package*x~x64~*"; "*ServerCoreFonts-NonCritical-";
    Fonts-Support-FOD-Package*x~amd64~*"; "*ServerCoreFonts-NonCritical-Fonts-Support-FOD-Package*x~wow64~*"; "*ServerCoreFonts-NonCritical-Fonts-Support-FOD-"
```

```
Package*~arm64.x86~*"; **ServerCoreFonts-NonCritical-Fonts-Support-FOD-Package*~arm64~*"; **ServerCoreFonts-NonCritical-Fonts-TrueType-FOD-Package*~x86~*";
**ServerCoreFonts-NonCritical-Fonts-TrueType-FOD-Package*~x64~*"; **ServerCoreFonts-NonCritical-Fonts-TrueType-FOD-Package*~amd64~*"; **ServerCoreFonts-
NonCritical-Fonts-TrueType-FOD-Package*~wow64~*"; **ServerCoreFonts-NonCritical-Fonts-TrueType-FOD-Package*~arm64.x86~*"; **ServerCoreFonts-NonCritical-Fonts-
TrueType-FOD-Package*~arm64~*"; **SimpleTCP-FOD-Package*~x86~*"; **SimpleTCP-FOD-Package*~x64~*"; **SimpleTCP-FOD-Package*~amd64~*"; **SimpleTCP-FOD-
Package*~wow64~*"; **SimpleTCP-FOD-Package*~arm64.x86~*"; **SimpleTCP-FOD-Package*~arm64~*"; **VirtualMachinePlatform-Client-Disabled-FOD-
Package*~x86~*"; **VirtualMachinePlatform-Client-Disabled-FOD-Package*~x64~*"; **VirtualMachinePlatform-Client-Disabled-FOD-Package*~amd64~*";
**VirtualMachinePlatform-Client-Disabled-FOD-Package*~wow64~*"; **VirtualMachinePlatform-Client-Disabled-FOD-Package*~arm64.x86~*"; **VirtualMachinePlatform-
Client-Disabled-FOD-Package*~arm64~*"; **DirectoryServices-ADAM-Client-FOD-Package*~x86~*"; **DirectoryServices-ADAM-Client-FOD-Package*~x64~*";
**DirectoryServices-ADAM-Client-FOD-Package*~amd64~*"; **DirectoryServices-ADAM-Client-FOD-Package*~wow64~*"; **DirectoryServices-ADAM-Client-FOD-
Package*~arm64.x86~*"; **DirectoryServices-ADAM-Client-FOD-Package*~arm64~*"; **EnterpriseClientSync-Host-FOD-Package*~x86~*"; **EnterpriseClientSync-Host-
FOD-Package*~x64~*"; **EnterpriseClientSync-Host-FOD-Package*~amd64~*"; **EnterpriseClientSync-Host-FOD-Package*~wow64~*"; **EnterpriseClientSync-Host-FOD-
Package*~arm64.x86~*"; **EnterpriseClientSync-Host-FOD-Package*~arm64~*"; **SenseClient-FoD-Package*~x86~*"; **SenseClient-FoD-Package*~x64~*";
**SenseClient-FoD-Package*~amd64~*"; **SenseClient-FoD-Package*~wow64~*"; **SenseClient-FoD-Package*~arm64.x86~*"; **SenseClient-FoD-Package*~arm64~*";
**SmbDirect-FOD-Package*~x86~*"; **SmbDirect-FOD-Package*~x64~*"; **SmbDirect-FOD-Package*~amd64~*"; **SmbDirect-FOD-Package*~wow64~*"; **SmbDirect-
FOD-Package*~arm64.x86~*"; **SmbDirect-FOD-Package*~arm64~*"; **TerminalServices-AppServer-Client-FOD-Package*~x86~*"; **TerminalServices-AppServer-Client-
FOD-Package*~x64~*"; **TerminalServices-AppServer-Client-FOD-Package*~amd64~*"; **TerminalServices-AppServer-Client-FOD-Package*~wow64~*";
**TerminalServices-AppServer-Client-FOD-Package*~arm64.x86~*"; **TerminalServices-AppServer-Client-FOD-Package*~arm64~*"; ); })
```

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

```
$ExcludeNameItem = @( "Fonts"; "RegionSpecific"; )
```

```
ForEach ($WildCard in $Script:Init_Folder_All_File) {
```

```
    ForEach ($item in $Script:Search_File_Order) {
```

```
        ForEach ($NewRule in $item.Rule) {
```

```
            if ($WildCard -like "*$($NewRule)*") {
```

```
                Write-host "`n Fuzzy matching: " -NoNewline; Write-host $NewRule -ForegroundColor Green;
```

```
                Write-host " File name: " -NoNewline; Write-host $WildCard -ForegroundColor Green
```

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

```
                $TempSave = @{ Match_Name = $NewRule; FileName = $WildCard }
```

```
                $new = $OSDefaultUser + $TempSave
```

```
                if ($item.name -Contains $ExcludeNameItem) { Write-host " Do not match, install directly" -ForegroundColor Yellow; New-Variable -Name
"Init_File_Type_$( $item.Name)" -Value $new -Force; $Script:Init_Folder_All_File_Match_Done += $WildCard; } else { ForEach ($Component in
$Init_Install_Language_Component) { if ($Component -like "*$($NewRule)*") { 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; }}}}}}
```

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

```
                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)" -NoNewline;
```

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

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

ForEach ($WildCard in $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 " $($-' * 80)"

if ($OSDefaultUser.Count -gt 0){

ForEach ($item in $OSDefaultUser){

Write-host " File name: " -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 " $($_)`n" -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

```
$SaveTo = "D:\ISOTEMP_Custom\Install\Report.Components.$(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: Core, CoreSingleLanguage
- 群组 B: CoreN
- 群组 C: Education, Professional, ProfessionalEducation, ProfessionalWorkstation, Enterprise, IoTEnterprise, IoTEnterpriseK, ServerRdsh, ServerStandard, ServerDatacenter
- 群组 D: EducationN, ProfessionalN, ProfessionalEducationN, ProfessionalWorkstationN, EnterpriseN, EnterpriseGN, EnterpriseSN, CloudN, CloudEN, CloudEditionLN, StarterN

序号	软件包名称	产品 ID	群组	区域范围
1	Microsoft.AV1VideoExtension	9MVZQVXJBQ9V	A, C	All
2	Microsoft.AVCEncoderVideoExtension	9PB0TRCRHFX	A, C	All
3	Microsoft.GamingApp	9MV0B5HZVK9Z	A, C	All
4	Microsoft.HEIFImageExtension	9PMMSR1CGPWG	A, C	All

序号	软件包名称	产品ID	群组	区域范围
5	Microsoft.HEVCVideoExtension	9NMZLZ57R3T7	A, C	All
6	Microsoft.RawImageExtension	9NCTDW2W1BH8	A, C	All
7	Microsoft.VP9VideoExtensions	9N4D0MSMP0PT	A, C	All
8	Microsoft.WebMediaExtensions	9N5TDP8VCMHS	A, C	All
9	Microsoft.WebpImageExtension	9PG2DK419DRG	A, C	All
10	Microsoft.MPEG2VideoExtension	9N95Q1ZZPMH4	A, C	All
11	Microsoft.Windows.DevHome	9N8MHTPHNGVV	A, C	
12	Microsoft.WindowsSoundRecorder	9WZDNCRFHWKN	A, C	All
13	Microsoft.Xbox.TCUI	9NKNC0LD5NN6	A, C	All
14	Microsoft.XboxGamingOverlay	9NZKPSTSNW4P	A, C	All
15	Microsoft.ZuneMusic	9WZDNCRFJ3PT	A, C	All
16	Microsoft.CrossDevice	9NTXGKQ8P7N0	A, C, D	All
17	MSTeams	XP8BT8DW290MPQ	A, C, D	AD;AE;AF;AG;AI;AL;AM;AO;AQ;AR;AS;AT;AU;AW;AX;AZ;BA;BB;BD;BE;BF;BG;BH;BI;BJ;BL;BM;BN;BO;BQ;BR;BS;BT;BV;BW;BY;BZ;CA;CC;CD;CF;CG;CH;CI;CK;CL;CM;CO;CR;CU;CV;CW;CX;CY;CZ;DE;DJ;DK;DM;DO;DZ;EC;EE;EG;ER;ES;ET;FI;FJ;FK;FM;FO;FR;GA;GB;GD;GE;GF;GG;GH;GI;GL;GM;GN;GP;GQ;GR;GS;GT;GU;GW;GY;HK;HM;HN;HR;HT;HU;ID;IE;IL;IM;IN;IO;IQ;IR;IS;IT;JE;JM;JO;JP;KE;KG;KH;KI;KM;KN;KP;KR;KW;KY;KZ;LA;LB;LC;LI;LK;LR;LS;LT;LU;LV;LY;MA;MC;MD;ME;MF;MG;MH;MK;ML;MM;MN;MO;MP;MQ;MR;MS;MT;MU;MV;MW;MX;MY;MZ;NA;NC;NE;NF;NG;NI;NL;NO;NP;NR;NU;NZ;OM;PA;PE;PF;PG;PH;PK;PL;PM;PN;PR;PS;PT;PW;PY;QA;RE;RO;RS;RU;RW;SA;SB;SC;SD;SE;SG;SH;SI;SJ;SK;SL;SM;SN;SO;SR;SS;ST;SV;SX;SY;SZ;TC;TD;TF;TG;TH;TJ;TK;TL;TM;TN;TO;TR;TT;TV;TW;TZ;UA;UG;UM;US;UY;UZ;VA;VC;VE;VG;VI;VN;VU;WF;WS;XK;YE;YT;ZA;ZM;ZW
18	MicrosoftCorporationII.MicrosoftFamily	9PDJDJS743XF	A, B	All
19	Microsoft.UI.Xaml.2.8		A, B, C, D	All
20	Microsoft.WindowsAppRuntime.1.5		A, B, C, D	All
21	Microsoft.WindowsAppRuntime.1.6		A, B, C, D	All
22	Microsoft.WindowsAppRuntime.1.7		A, B, C, D	All
23	Microsoft.NET.Native.Framework.2.2		A, B, C, D	All
24	Microsoft.NET.Native.Runtime.22		A, B, C, D	All
25	Microsoft.VCLibs.140.00		A, B, C, D	All
26	Microsoft.VCLibs.140.00.UWPDesktop		A, B, C, D	All
27	Microsoft.Services.Store.Engagement		A, B, C, D	All
28	Microsoft.DesktopAppInstaller	9NBLGGH4NNS1	A, B, C, D	All
29	Microsoft.WindowsStore	9WZDNCRFJBMP	A, B, C, D	All

序号	软件包名称	产品ID	群组	区域范围
30	Microsoft.Windows.Client.WebExperience	9MSSGKG348SP	A, B, C, D	All
31	Clipchamp.Clipchamp	9P1J8S7CCWWT	A, B, C, D	All
32	ApplicationCompatibilityEnhancements	9PCSD6N03BKV	A, B, C, D	All
33	Microsoft.BingNews	9WZDNCRFHVFW	A, B, C, D	All
34	Microsoft.BingSearch	9NZBF4GT040C	A, B, C, D	All
35	Microsoft.BingWeather	9WZDNCRFJ3Q2	A, B, C, D	All
36	Microsoft.Copilot	9NHT9RB2F4HD	A, B, C, D	AD;AE;AF;AG;AI;AL;AM;AO;AQ;AR;AS;AT;AU;AW;AX;AZ;BA;BB;BD;BE;BF;BG;BH;BI;BJ;BL;BM;BN;BO;BQ;BR;BS;BT;BV;BW;BZ;CA;CC;CD;CF;CG;CH;CI;CK;CL;CM;CO;CR;CV;CW;CX;CY;CZ;DE;DJ;DK;DM;DO;DZ;EC;EE;EG;ER;ES;ET;FI;FJ;FK;FM;FO;FR;GA;GB;GD;GE;GF;GG;GH;GI;GL;GM;GN;GP;GQ;GR;GS;GT;GU;GW;GY;HK;HM;HN;HR;HT;HU;ID;IE;IL;IM;IN;IO;IQ;IS;IT;JE;JM;JO;JP;KE;KG;KH;KI;KM;KN;KR;KW;KY;KZ;LA;LB;LC;LI;LK;LR;LS;LT;LU;LV;LY;MA;MC;MD;ME;MF;MG;MH;MK;ML;MM;MN;MO;MP;MQ;MR;MS;MT;MU;MV;MW;MX;MY;MZ;NA;NC;NE;NF;NG;NI;NL;NO;NP;NR;NU;NZ;OM;PA;PE;PF;PG;PH;PK;PL;PM;PN;PR;PS;PT;PW;PY;QA;RE;RO;RS;RW;SA;SB;SC;SD;SE;SG;SH;SI;SJ;SK;SL;SM;SN;SO;SR;SS;ST;SV;SX;SZ;TC;TD;TF;TG;TH;TJ;TK;TL;TM;TN;TO;TR;TT;TV;TW;TZ;UA;UG;UM;US;UY;UZ;VA;VC;VE;VG;VI;VN;VU;WF;WS;XK;YE;YT;ZA;ZM;ZW
37	Microsoft.GetHelp	9PKDZBMV1H3T	A, B, C, D	All
38	Microsoft.MicrosoftOfficeHub	9WZDNCRD29V9	A, B, C, D	All
39	Microsoft.MicrosoftSolitaireCollection	9WZDNCRFHWD2	A, B, C, D	All
40	Microsoft.StickyNotes	9NBLGGH4QGHW	A, B, C, D	All
41	Microsoft.OutlookForWindows	9NRX63209R7B	A, B, C, D	AD;AE;AF;AG;AI;AL;AM;AO;AQ;AR;AS;AT;AU;AW;AX;AZ;BA;BB;BD;BE;BF;BG;BH;BI;BJ;BL;BM;BN;BO;BQ;BR;BS;BT;BV;BW;BY;BZ;CA;CC;CD;CF;CG;CH;CI;CK;CL;CM;CO;CR;CU;CV;CW;CX;CY;CZ;DE;DJ;DK;DM;DO;DZ;EC;EE;EG;ER;ES;ET;FI;FJ;FK;FM;FO;FR;GA;GB;GD;GE;GF;GG;GH;GI;GL;GM;GN;GP;GQ;GR;GS;GT;GU;GW;GY;HK;HM;HN;HR;HT;HU;ID;IE;IL;IM;IN;IO;IQ;IR;IS;IT;JE;JM;JO;JP;KE;KG;KH;KI;KM;KN;KP;KR;KW;KY;KZ;LA;LB;LC;LI;LK;LR;LS;LT;LU;LV;LY;MA;MC;MD;ME;MF;MG;MH;MK;ML;MM;MN;MO;MP;MQ;MR;MS;MT;MU;MV;MW;MX;MY;MZ;NA;NC;NE;NF;NG;NI;NL;NO;NP;NR;NU;NZ;OM;PA;PE;PF;PG;PH;PK;PL;PM;PN;PR;PS;PT;PW;PY;QA;RE;RO;RS;RU;RW;SA;SB;SC;SD;SE;SG;SH;SI;SJ;SK;SL;SM;SN;SO;SR;SS;ST;SV;SX;SY;SZ;TC;TD;TF;TG;TH;TJ;TK;TL;TM;TN;TO;TR;TT;TV;TW;TZ;UA;UG;UM;US;UY;UZ;VA;VC;VE;VG;VI;VN;VU;WF;WS;XK;YE;YT;ZA;ZM;ZW
42	Microsoft.Paint	9PCFS5B6T72H	A, B, C, D	All
43	Microsoft.PowerAutomateDesktop	9NFTCH6J7FHV	A, B, C, D	All
44	Microsoft.ScreenSketch	9MZ95KL8MR0L	A, B, C, D	All
45	Microsoft.SecHealthUI	9NK0JLZT7JD0	A, B, C, D	All
46	Microsoft.StorePurchaseApp	9NBLGGH4LS1F	A, B, C, D	All
47	Microsoft.Todos	9NBLGGH5R558	A, B, C, D	All
48	Microsoft.Windows.Photos	9WZDNCRFJBH4	A, B, C, D	All
49	Microsoft.WindowsAlarms	9WZDNCRFJ3PR	A, B, C, D	All

序号	软件包名称	产品ID	群组	区域范围
50	Microsoft.WindowsCalculator	9WZDNCRFHVN5	A, B, C, D	All
51	Microsoft.WindowsCamera	9WZDNCRFJBBG	A, B, C, D	All
52	Microsoft.WindowsFeedbackHub	9NBLGGH4R32N	A, B, C, D	All
53	Microsoft.WindowsNotepad	9MSMLRH6LZF3	A, B, C, D	All
54	Microsoft.WindowsTerminal	9N0DX20HK701	A, B, C, D	All
55	Microsoft.XboxIdentityProvider	9WZDNCRD1HKW	A, B, C, D	All
56	Microsoft.XboxSpeechToTextOverlay	9P086NHDNB9W	A, B, C, D	All
57	Microsoft.YourPhone	9NMPJ99VJBWV	A, B, C, D	All
58	MicrosoftCorporationII.QuickAssist	9P7BP5VNWKX5	A, B, C, D	All

### 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.11/24H2/Expand/Install/Install.InBox.Apps.Clear.all.ps1](https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/24H2/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. 已安装语言标记：了解

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. 了解区域

区域	产品 ID
<a href="#">en-US</a>	C9PDSCC711RVF
<a href="#">ar-sa</a>	9N4S78P86PKX

区域	产品 ID
<a href="#">af-za</a>	9PDW16B5HMXR
<a href="#">as-in</a>	9NTJLXMXX35J

区域	产品 ID
<a href="#">am-et</a>	9NGL4R61W3PL
<a href="#">az-latn-az</a>	9P5TFKZHQ5K8

be-by	9MXPBGNNDW3L
bn-in	9P1M44L7W84T
ca-es-valencia	9P9K3WMFSW90
cy-gb	9NKJ9TBML4HB
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	9NVF9QSLGTL0
sq-al	9MWLRGNMDGK7
sr-latn-rs	9NBZ0SJDPPT
ta-in	9PDZB1WT1B34
th-th	9MSTWFRL0LR4
tn-za	9NFSXM123DHT

bg-bg	9MX54588434F
bs-latn-ba	9MVFKLJ10MFL
chr-cher-us	9MX15485N3RK
da-dk	9NDMT2VKSNL1
en-gb	9NT52VQ39BVN
et-ee	9NFBHFMCR30L
fi-fi	9MW3PQ7SD3QK
fr-fr	9NHMG4BJKMDG
gl-es	9NXRNBRNPN9B
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

bn-bd	9PH7TKVXGGM8
ca-es	9P6JMKJQZ9S7
cs-cz	9P3WXZ1KTM7C
de-de	9P6CT0SLW589
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

ug-cn	9P52C5D7VL5S
uz-latn-uz	9P5P2T5P5L9S
xh-za	9NW3QWSLQD17
zh-tw	9PCJ4DHCQ1JQ

uk-ua	9PPPMZRSRGR8
vi-vn	9P0W68X0XZPT
yo-ng	9NGM3VPPZS5V
zu-za	9NNRM7KT5NB0

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 26200 内容, 搜索结果: Microsoft.LanguageExperiencePackzh-CN\_26200.\*.

[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 [26100.6584.250904-1728.ge\\_release\\_svc\\_prod1\\_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"
- 架构： x64
- Install.Inst.Inbox.apps.ps1
  - \Expand\Install\Install.Inst.Inbox.apps.ps1
  - [https://github.com/ikeyi/solutions/blob/main/\\_Learn/Packaging/tutorial/OS.11/24H2/Expand/Install/Install.Inst.Inbox.Apps.ps1](https://github.com/ikeyi/solutions/blob/main/_Learn/Packaging/tutorial/OS.11/24H2/Expand/Install/Install.Inst.Inbox.Apps.ps1)
- 复制代码

```
$ISO = "Auto"; $Mount = "D:\ISOTEMP_Custom\Install\Install\Mount"; $Arch = "x64";  
  
try{ Write-host "`n Offline image version: " -NoNewline; $Current_Edition_Version = (Get-WindowsEdition -Path $Mount).Edition; Write-Host $Current_Edition_Version -  
ForegroundColor Green; } catch { Write-Host "Error" -ForegroundColor Red; Write-Host " $($_) " -ForegroundColor Yellow; return; }  
  
$Pre_Config_Rules = @{
```

```
Edition = @(`@{ Name = @(`Core`); "CoreSingleLanguage"; }; Apps = @(`Microsoft.UI.Xaml.2.8`; `Microsoft.WindowsAppRuntime.1.5`; `Microsoft.WindowsAppRuntime.1.6`;  
"Microsoft.WindowsAppRuntime.1.7"; `Microsoft.NET.Native.Framework.2.2`; `Microsoft.NET.Native.Runtime.2.2`; `Microsoft.VCLibs.140.00`;  
"Microsoft.VCLibs.140.00.UWPDesktop"; `Microsoft.Services.Store.Engagement`; `Clipchamp.Clipchamp`; `Microsoft.ApplicationCompatibilityEnhancements`;  
"Microsoft.AV1VideoExtension"; `Microsoft.AVCEncoderVideoExtension`; `Microsoft.BingNews`; `Microsoft.BingSearch`; `Microsoft.BingWeather`; `Microsoft.Copilot`;  
"Microsoft/DesktopAppInstaller"; `Microsoft.GamingApp`; `Microsoft.GetHelp`; `Microsoft.HEIFImageExtension`; `Microsoft.HEVCVideoExtension`);
```

```
"Microsoft.MicrosoftOfficeHub"; "Microsoft.MicrosoftSolitaireCollection"; "Microsoft.MicrosoftStickyNotes"; "Microsoft.MPEG2VideoExtension";
"Microsoft.OutlookForWindows"; "Microsoft.Paint"; "Microsoft.PowerAutomateDesktop"; "Microsoft.RawImageExtension"; "Microsoft.ScreenSketch"; "Microsoft.SecHealthUI";
"Microsoft.StorePurchaseApp"; "Microsoft.Todos"; "Microsoft.VP9VideoExtensions"; "Microsoft.WebMediaExtensions"; "Microsoft.WebPImageExtension";
"Microsoft.Windows.DevHome"; "Microsoft.Windows.Photos"; "Microsoft.WindowsAlarms"; "Microsoft.WindowsCalculator"; "Microsoft.WindowsCamera";
"Microsoft.WindowsFeedbackHub"; "Microsoft.WindowsNotepad"; "Microsoft.WindowsSoundRecorder"; "Microsoft.WindowsStore"; "Microsoft.WindowsTerminal";
"Microsoft.Xbox.TCUI"; "Microsoft.XboxGamingOverlay"; "Microsoft.XboxIdentityProvider"; "Microsoft.XboxSpeechToTextOverlay"; "Microsoft.YourPhone";
"Microsoft.ZuneMusic"; "MicrosoftCorporationII.MicrosoftFamily"; "MicrosoftCorporationII.QuickAssist"; "MicrosoftWindows.Client.WebExperience"; "Microsoft.CrossDevice";
"MSTeams"; ) }; @{ Name = @( "CoreN" ); Apps = @( "Microsoft.UI.Xaml.2.8"; "Microsoft.WindowsAppRuntime.1.3"; "Microsoft.WindowsAppRuntime.1.4";
"Microsoft.NET.Native.Framework.2.2"; "Microsoft.NET.Native.Runtime.2.2"; "Microsoft.VCLibs.140.00"; "Microsoft.VCLibs.140.00.UWPDesktop";
"Microsoft.Services.Store.Engagement"; "Clipchamp.Clipchamp"; "Microsoft.ApplicationCompatibilityEnhancements"; "Microsoft.BingNews"; "Microsoft.BingSearch";
"Microsoft.BingWeather"; "Microsoft.Copilot"; "Microsoft/DesktopAppInstaller"; "Microsoft.GetHelp"; "Microsoft.MicrosoftOfficeHub"; "Microsoft.MicrosoftSolitaireCollection";
"Microsoft.MicrosoftStickyNotes"; "Microsoft.OutlookForWindows"; "Microsoft.Paint"; "Microsoft.PowerAutomateDesktop"; "Microsoft.ScreenSketch"; "Microsoft.SecHealthUI";
"Microsoft.StorePurchaseApp"; "Microsoft.Todos"; "Microsoft.Windows.Photos"; "Microsoft.WindowsAlarms"; "Microsoft.WindowsCalculator"; "Microsoft.WindowsCamera";
"Microsoft.WindowsFeedbackHub"; "Microsoft.WindowsNotepad"; "Microsoft.WindowsStore"; "Microsoft.WindowsTerminal"; "Microsoft.XboxIdentityProvider";
"Microsoft.XboxSpeechToTextOverlay"; "Microsoft.YourPhone"; "MicrosoftCorporationII.MicrosoftFamily"; "MicrosoftCorporationII.QuickAssist";
"MicrosoftWindows.Client.WebExperience"; "Microsoft.CrossDevice"; "MSTeams"; ) }; @{ Name = @( "Education"; "Professional"; "ProfessionalEducation";
"ProfessionalWorkstation"; "Enterprise"; "IoTEnterprise"; "IoTEnterpriseK"; "ServerRdsh"; "ServerStandard"; "ServerDatacenter"; ); Apps = @( "Microsoft.UI.Xaml.2.8";
"Microsoft.WindowsAppRuntime.1.3"; "Microsoft.WindowsAppRuntime.1.4"; "Microsoft.NET.Native.Framework.2.2"; "Microsoft.NET.Native.Runtime.2.2";
"Microsoft.VCLibs.140.00"; "Microsoft.VCLibs.140.00.UWPDesktop"; "Microsoft.Services.Store.Engagement"; "Clipchamp.Clipchamp";
"Microsoft.ApplicationCompatibilityEnhancements"; "Microsoft.AV1VideoExtension"; "Microsoft.AVCEncoderVideoExtension"; "Microsoft.BingNews"; "Microsoft.BingSearch";
"Microsoft.BingWeather"; "Microsoft.Copilot"; "Microsoft/DesktopAppInstaller"; "Microsoft.GamingApp"; "Microsoft.GetHelp"; "Microsoft.HEIFImageExtension";
"Microsoft.HEVCVideoExtension"; "Microsoft.MicrosoftOfficeHub"; "Microsoft.MicrosoftSolitaireCollection"; "Microsoft.MicrosoftStickyNotes";
"Microsoft.MPEG2VideoExtension"; "Microsoft.OutlookForWindows"; "Microsoft.Paint"; "Microsoft.PowerAutomateDesktop"; "Microsoft.RawImageExtension";
"Microsoft.ScreenSketch"; "Microsoft.SecHealthUI"; "Microsoft.StorePurchaseApp"; "Microsoft.Todos"; "Microsoft.VP9VideoExtensions"; "Microsoft.WebMediaExtensions";
"Microsoft.WebPImageExtension"; "Microsoft.Windows.DevHome"; "Microsoft.Windows.Photos"; "Microsoft.WindowsAlarms"; "Microsoft.WindowsCalculator";
"Microsoft.WindowsCamera"; "Microsoft.WindowsFeedbackHub"; "Microsoft.WindowsNotepad"; "Microsoft.WindowsSoundRecorder"; "Microsoft.WindowsStore";
"Microsoft.WindowsTerminal"; "Microsoft.Xbox.TCUI"; "Microsoft.XboxGamingOverlay"; "Microsoft.XboxIdentityProvider"; "Microsoft.XboxSpeechToTextOverlay";
"Microsoft.YourPhone"; "Microsoft.ZuneMusic"; "MicrosoftCorporationII.QuickAssist"; "MicrosoftWindows.Client.WebExperience"; "Microsoft.CrossDevice"; "MSTeams"; );
@{ Name = @( "EducationN"; "ProfessionalN"; "ProfessionalEducationN"; "ProfessionalWorkstationN"; "EnterpriseN"; "EnterpriseGN"; "EnterpriseSN"; "CloudN"; "CloudEN";
"CloudEditionLN"; "StarterN"; ); Apps = @( "Microsoft.UI.Xaml.2.8"; "Microsoft.WindowsAppRuntime.1.3"; "Microsoft.WindowsAppRuntime.1.4";
"Microsoft.NET.Native.Framework.2.2"; "Microsoft.NET.Native.Runtime.2.2"; "Microsoft.VCLibs.140.00"; "Microsoft.VCLibs.140.00.UWPDesktop";
"Microsoft.Services.Store.Engagement"; "Clipchamp.Clipchamp"; "Microsoft.ApplicationCompatibilityEnhancements"; "Microsoft.BingNews"; "Microsoft.BingSearch";
"Microsoft.BingWeather"; "Microsoft.Copilot"; "Microsoft/DesktopAppInstaller"; "Microsoft.GetHelp"; "Microsoft.MicrosoftOfficeHub"; "Microsoft.MicrosoftSolitaireCollection";
"Microsoft.MicrosoftStickyNotes"; "Microsoft.OutlookForWindows"; "Microsoft.Paint"; "Microsoft.PowerAutomateDesktop"; "Microsoft.ScreenSketch"; "Microsoft.SecHealthUI";
"Microsoft.StorePurchaseApp"; "Microsoft.Todos"; "Microsoft.Windows.Photos"; "Microsoft.WindowsAlarms"; "Microsoft.WindowsCalculator"; "Microsoft.WindowsCamera";
"Microsoft.WindowsFeedbackHub"; "Microsoft.WindowsNotepad"; "Microsoft.WindowsStore"; "Microsoft.WindowsTerminal"; "Microsoft.XboxIdentityProvider";
"Microsoft.XboxSpeechToTextOverlay"; "Microsoft.YourPhone"; "MicrosoftCorporationII.QuickAssist"; "MicrosoftWindows.Client.WebExperience"; "Microsoft.CrossDevice";
"MSTeams"; ) }; @{ Name = @( "EnterpriseS"; "EnterpriseSN"; "IoTEnterpriseS"; "IoTEnterpriseSK"; ); Apps = @( "Microsoft.SecHealthUI"; ) }
```

Rule = @(

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

@{ Name = "Microsoft.WindowsAppRuntime.1.5"; Match = "WindowsAppRuntime.{ARHC}.1.5"; License = "WindowsAppRuntime.{ARHC}.1.5"; Region = "All";
Dependencies = @(); }

@{ Name = "Microsoft.WindowsAppRuntime.1.6"; Match = "WindowsAppRuntime.{ARHC}.1.6"; License = "WindowsAppRuntime.{ARHC}.1.6"; Region = "All";
Dependencies = @(); }

@{ Name = "Microsoft.WindowsAppRuntime.1.7"; Match = "WindowsAppRuntime.{ARHC}.1.7"; License = "WindowsAppRuntime.{ARHC}.1.7"; Region = "All";
Dependencies = @(); }

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

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

{@ Name = "Microsoft.VCLibs.140.00"; Match = "Microsoft.VCLibs.{ARCTag}.14.00.appx"; License = "VCLibs.{ARCTag}.14.00.appx"; Region = "All"; Dependencies = @(); }

{@ Name = "Microsoft.VCLibs.140.00.UWPDesktop"; Match = "Microsoft.VCLibs.{ARCTag}.14.00.UWPDesktop"; License = "Microsoft.VCLibs.{ARCTag}.14.00.UWPDesktop"; Region = "All"; Dependencies = @(); }

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

{@ Name = "Microsoft.DesktopAppInstaller"; Match = "DesktopAppInstaller"; License = "DesktopAppInstaller"; Region = "All"; Dependencies = @("Microsoft.UI.Xaml.2.8", "Microsoft.VCLibs.140.00.UWPDesktop"); }

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

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

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

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

{@ Name = "Microsoft.AV1VideoExtension"; Match = "AV1VideoExtension"; License = "AV1VideoExtension"; Region = "All"; Dependencies = @(); }

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

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

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

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

{@ Name = "Microsoft.Copilot"; Match = "Copilot"; License = "Copilot"; Region = "AD;AE;AF;AG;AI;AL;AM;AO;AQ;AR;AS;AT;AU;AW;AX;AZ;BA;BB;BD;BE;BF;BG;BH;BI;BJ;BL;BM;BN;BO;BQ;BR;BS;BT;BV;BW;BZ;CA;CC;CD;CF;CG;CH;CI;CK;CL;CM;CO;CR;CV;CW;CX;CY;CZ;DE;DJ;DK;DM;DO;DZ;EC;EE;EG;ER;ES;ET;FI;FJ;FK;FM;FO;FR;GA;GB;GD;GE;GF;GG;GH;GI;GL;GM;GN;GP;GQ;GR;GS;GT;GU;GW;GY;HK;HM;HN;HR;HT;HU;ID;IE;IL;IM;IN;IO;IQ;IS;IT;JE;JM;JO;JP;KE;KG;KH;KI;KM;KN;KR;KW;KY;KZ;LA;LB;LC;LI;LK;LR;LS;LT;LU;LV;LY;MA;MC;MD;ME;MF;MG;MH;MK;ML;MM;MN;MO;MP;MQ;MR;MS;MT;MU;MV;MW;MX;MY;MZ;NA;NC;NE;NF;NG;NI;NL;NO;NP;NR;NU;NZ;OM;PA;PE;PF;PG;PH;PK;PL;PM;PN;PR;PS;PT;PW;PY;QA;RE;RO;RS;RW;SA;SB;SC;SD;SE;SG;SH;SI;SJ;SK;SL;SM;SN;SO;SR;SS;ST;SV;SX;SZ;TC;TD;TF;TG;TH;TJ;TK;TL;TM;TN;TO;TR;TT;TV;TW;TZ;UA;UG;UM;US;UY;UZ;VA;VC;VE;VG;VI;VN;VU;WF;WS;XK;YE;YT;ZA;ZM;ZW"; Dependencies = @("Microsoft.VCLibs.140.00"); }

{@ Name = "Microsoft.GamingApp"; Match = "GamingApp"; License = "GamingApp"; Region = "All"; Dependencies = @("Microsoft.UI.Xaml.2.8", "Microsoft.VCLibs.140.00", "Microsoft.VCLibs.140.00.UWPDesktop"); }

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

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

{@ Name = "Microsoft.HEVCVideoExtension"; Match = "HEVCVideoExtension"; License = "15a6383d188a454ca98e15931ce48dc4_License1"; Region = "All"; Dependencies = @("Microsoft.VCLibs.140.00"); }

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

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

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

{@ Name = "Microsoft.MPEG2VideoExtension"; Match = "MPEG2VideoExtension"; License = "MPEG2VideoExtension"; Region = "All"; Dependencies = @(); }

{@ Name = "Microsoft.OutlookForWindows"; Match = "Microsoft.OutlookForWindows_8wekyb3d8bbwe"; License = "Microsoft.OutlookForWindows_8wekyb3d8bbwe"; Region =
"AD;AE;AF;AG;AI;AL;AM;AO;AQ;AR;AS;AT;AU;AW;AX;AZ;BA;BB;BD;BE;BF;BG;BH;BI;BJ;BL;BM;BN;BO;BQ;BR;BS;BT;BV;BW;BY;BZ;CA;CC;CD;CF;CG;CH;CI;CK;CL;CM;CO;CR;CU;
CV;CW;CX;CY;CZ;DE;DJ;DK;DM;DO;DZ;EC;EE;EG;ER;ES;ET;FI;FJ;FK;FM;FO;FR;GA;GB;GD;GE;GF;GG;GH;GI;GL;GM;GN;GP;GQ;GR;GS;GT;GU;GW;GY;HK;HM;HN;HR;HT;HU;ID;I
E;IL;IM;IN;IO;IQ;IR;IS;IT;JE;JM;JO;JP;KE;KG;KH;KI;KM;KN;KP;KR;KW;KY;KZ;LA;LB;LC;LI;LK;LR;LS;LT;LU;LV;LY;MA;MC;MD;ME;MF;MG;MH;MK;ML;MM;MN;MO;MP;MQ;MR;MS;MT;M
U;MV;MW;MX;MY;MZ;NA;NC;NE;NF;NG;NI;NL;NO;NP;NR;NU;NZ;OM;PA;PE;PF;PG;PH;PK;PL;PM;PN;PR;PS;PT;PW;PY;QA;RE;RO;RS;RU;RW;SA;SB;SC;SD;SE;SG;SH;SI;SJ;SK;SL;
SM;SN;SO;SR;SS;ST;SV;SX;SY;SZ;TC;TD;TF;TG;TH;TJ;TK;TL;TM;TN;TO;TR;TT;TV;TW;TZ;UA;UG;UM;US;UY;UZ;VA;VC;VE;VG;VI;VN;VU;WF;WS;XK;YE;YT;ZA;ZM;ZW"; Dependencies
= @(); }

{@ Name = "Microsoft.Paint"; Match = "Paint"; License = "Paint"; Region = "All"; Dependencies = @("Microsoft.VCLibs.140.00", "Microsoft.VCLibs.140.00.UWPDesktop",
"Microsoft.UI.Xaml.2.8"); }

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

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

{@ Name = "Microsoft.ScreenSketch"; Match = "ScreenSketch"; License = "ScreenSketch"; Region = "All"; Dependencies = @("Microsoft.UI.Xaml.2.8",
"Microsoft.WindowsAppRuntime.1.3", "Microsoft.VCLibs.140.00", "Microsoft.VCLibs.140.00.UWPDesktop"); }

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

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

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

{@ Name = "Microsoft.VP9VideoExtensions"; Match = "VP9VideoExtensions"; License = "VP9VideoExtensions"; Region = "All"; Dependencies = @(); }

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

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

{@ Name = "Microsoft.Windows.DevHome"; Match = "DevHome"; License = "DevHome"; Region = "All"; Dependencies = @("Microsoft.WindowsAppRuntime.1.3",
"Microsoft.VCLibs.140.00.UWPDesktop"); }

{@ Name = "Microsoft.Windows.Photos"; Match = "Windows.Photos"; License = "Windows.Photos"; Region = "All"; Dependencies = @("Microsoft.UI.Xaml.2.8",
"Microsoft.VCLibs.140.00", "Microsoft.VCLibs.140.00.UWPDesktop"); }

{@ Name = "Microsoft.WindowsAlarms"; Match = "WindowsAlarms"; License = "WindowsAlarms"; Region = "All"; Dependencies = @("Microsoft.UI.Xaml.2.8",
"Microsoft.NET.Native.Framework.2.2", "Microsoft.NET.Native.Runtime.2.2", "Microsoft.VCLibs.140.00", "Microsoft.VCLibs.140.00.UWPDesktop",
"Microsoft.WindowsAppRuntime.1.3"); }

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

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

{@ Name = "Microsoft.WindowsFeedbackHub"; Match = "WindowsFeedbackHub"; License = "WindowsFeedbackHub"; Region = "All"; Dependencies = }
```

```
("@("Microsoft.UI.Xaml.2.8", "Microsoft.NET.Native.Framework.2.2", "Microsoft.NET.Native.Runtime.2.2", "Microsoft.VCLibs.140.00", "Microsoft.VCLibs.140.00.UWPDesktop"); }

{@{ Name = "Microsoft.WindowsNotepad"; Match = "WindowsNotepad"; License = "WindowsNotepad"; Region = "All"; Dependencies = @("Microsoft.UI.Xaml.2.8",
"Microsoft.VCLibs.140.00", "Microsoft.VCLibs.140.00.UWPDesktop"); }

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

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

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

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

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

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

{@{ Name = "Microsoft.YourPhone"; Match = "YourPhone"; License = "YourPhone"; Region = "All"; Dependencies = @("Microsoft.WindowsAppRuntime.1.4",
"Microsoft.VCLibs.140.00", "Microsoft.VCLibs.140.00.UWPDesktop"); }

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

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

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

{@{ Name = "MSTeams"; Match = "MSTeams*{ARHC}"; License = "MSTeams*{ARHC}"; Region =
"AD;AE;AF;AG;AI;AL;AM;AO;AQ;AR;AS;AT;AU;AW;AX;AZ;BA;BB;BD;BE;BF;BG;BH;BI;BJ;BL;BM;BN;BO;BQ;BR;BS;BT;BV;BW;BY;BZ;CA;CC;CD;CF;CG;CH;CI;CK;CL;CM;CO;CR;CU;
CV;CW;CX;CY;CZ;DE;DJ;DK;DM;DO;DZ;EC;EE;EG;ER;ES;ET;FI;FJ;FK;FM;FO;FR;GA;GB;GD;GE;GF;GG;GH;GI;GL;GM;GN;GP;GQ;GR;GS;GT;GU;GW;GY;HK;HM;HR;HT;HU;ID;I
E;IL;IM;IN;IO;IQ;IR;IS;IT;JE;JM;JO;JP;KE;KG;KH;KI;KM;KN;KP;KR;KW;KY;KZ;LA;LB;LC;LI;LK;LR;LS;LT;LU;LV;LY;MA;MC;MD;ME;MF;MG;MH;MK;ML;MM;MN;MO;MP;MQ;MR;MS;MT;M
U;MV;MW;MX;MY;MZ;NA;NC;NE;NF;NG;NI;NL;NO;NP;NR;NU;NZ;OM;PA;PE;PF;PG;PH;PK;PL;PM;PN;PR;PS;PT;PW;PY;QA;RE;RO;RS;RU;RW;SA;SB;SC;SD;SE;SG;SH;SI;SJ;SK;SL;
SM;SN;SO;SR;SS;ST;SV;SX;SY;SZ;TC;TD;TF;TG;TH;TJ;TK;TL;TM;TN;TO;TR;TT;TV;TW;TZ;UA;UG;UM;US;UY;UZ;VA;VC;VE;VG;VI;VN;VU;WF;WS;XK;YE;YT;ZA;ZM;ZW"; Dependencies
= @("Microsoft.WindowsAppRuntime.1.3", "Microsoft.VCLibs.140.00", "Microsoft.VCLibs.140.00.UWPDesktop"); }

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

}

$Allow_Install_App = @()

ForEach ($item in $Pre_Config_Rules.Edition) { if ($item.Name -contains $Current_Edition_Version) { Write-host "`n Match to: "-NoNewline; Write-host
$Current_Edition_Version -ForegroundColor Green; $Allow_Install_App = $item.Apps; break; }}

Write-host "`n The app to install ( $($Allow_Install_App.Count) item )"-ForegroundColor Yellow; Write-host " $($`" * 80)`"

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

Function Match_InBox_Apps_Install_Pack {
```

```
param ( $NewPath )

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

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

if ($Pre_Config_Rules.Rule.Count -gt 0){

    ForEach ($itemInBoxApps in $Pre_Config_Rules.Rule){

        $InstallPacker = ""; $InstallPackerCert = ""; $SearchNewStructure = $itemInBoxApps.Match.Replace("{ARCH}", $NewArch).Replace("{ARCHC}",
$NewArchC).Replace("{ARCHTag}", $NewArchCTag); $SearchNewLicense = $itemInBoxApps.License.Replace("{ARCH}", $NewArch).Replace("{ARCHC}",
$NewArchC).Replace("{ARCHTag}", $NewArchCTag);

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

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

                $InstallPacker = $_.FullName

                Get-ChildItem -Path $NewPath -Filter "*$($SearchNewLicense)*" -Include *.xml -Recurse -Force -ErrorAction SilentlyContinue | ForEach-Object { $InstallPackerCert =
$_.FullName; }

                $Script:InBoxAppx += @{
                    Name = $itemInBoxApps.Name;
                    Depend = $itemInBoxApps.Dependencies;
                    Region = $itemInBoxApps.Region;
                    Search =
$SearchNewStructure;
                    InstallPacker = $InstallPacker;
                    Certificate = $InstallPackerCert;
                    CertificateRule = $SearchNewLicense;
                }

            }

        }

    }

}

Write-host "`n InBox Apps: Installation packages, automatic search for full disk or specified paths" -ForegroundColor Yellow; Write-host " $($`'* 80)" ; $Script:InBoxAppx = @();

if ($ISO -eq "Auto") { Get-PSDrive -PSProvider FileSystem -ErrorAction SilentlyContinue | ForEach-Object { $AppPath = Join-Path -Path $_.Root -ChildPath "packages" -
ErrorAction SilentlyContinue; Match_InBox_Apps_Install_Pack -NewPath $AppPath; } } else { Match_InBox_Apps_Install_Pack -NewPath $ISO }

Write-host " Search Complete" -ForegroundColor Green; Write-host "`n InBox Apps: Installer Match Results" -ForegroundColor Yellow; Write-host " $($`'* 80)";

if ($Script:InBoxAppx.Count -gt 0) { Write-host " Match successful" -ForegroundColor Green; } else { Write-host " Failed match" -ForegroundColor Red; return; }

Write-host "`n InBox Apps: Details of the application to be installed ( $($Script:InBoxAppx.Count) item )" -ForegroundColor Yellow; Write-host " $($`'* 80)";

ForEach ($Rule in $Script:InBoxAppx) { Write-host " Apps name: ".PadRight(22) -NoNewline; Write-host $Rule.Name -ForegroundColor Yellow; Write-host " Region:
".PadRight(22) -NoNewline; Write-host $Rule.Region -ForegroundColor Yellow; Write-host " Apps installer: ".PadRight(22) -NoNewline; Write-host $Rule.InstallPacker -
ForegroundColor Yellow; Write-host " License: ".PadRight(22) -NoNewline; Write-host $Rule.Certificate -ForegroundColor Yellow; Write-host """; }

Write-host "`n InBox Apps: Installation" -ForegroundColor Yellow; Write-host " $($`'* 80)";

ForEach ($Rule in $Script:InBoxAppx){

    Write-host " Name: " -NoNewline; Write-host $Rule.Name -ForegroundColor Yellow; Write-host " $($`'* 80)";

    if($Allow_Install_App -contains $Rule.Name){

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

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

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

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

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

try{

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

Write-Host "Done`n" -ForegroundColor Green

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

} else {

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

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

try{

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

Write-Host "Done`n" -ForegroundColor Green

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

} else {

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

try{

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

Write-Host "Done`n" -ForegroundColor Green

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

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

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

}
```

## 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/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/24H2/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“检查点更新”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

- 你添加最新累积更新前，需要优先添加功能启用包，否则无法添加最新的累积更新，前往下载页面：

<https://www.catalog.update.microsoft.com/Search.aspx?q=KB5054156>，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：

#### 6.1.1. x64 eKB，默认

- 直连下载

[https://catalog.sf.dl.delivery.mp.microsoft.com/filestreamingservice/files/67731ce0-1988-426a-afa3-044a032eb6c6/public/windows11.0-kb5054156-x64\\_9fd13360d2c5af23ec4f591b86f1c1db37aada37.msu](https://catalog.sf.dl.delivery.mp.microsoft.com/filestreamingservice/files/67731ce0-1988-426a-afa3-044a032eb6c6/public/windows11.0-kb5054156-x64_9fd13360d2c5af23ec4f591b86f1c1db37aada37.msu)

- 添加

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Install\Install\Mount" -PackagePath
"D:\ISOTEMP_Custom\Install\Install\Update\windows11.0-kb5054156-
x64_9fd13360d2c5af23ec4f591b86f1c1db37aada37.msu"
```

#### 6.1.2. Arm64 eKB

- 直连下载

[https://catalog.sf.dl.delivery.mp.microsoft.com/filestreamingservice/files/2e42e2b9-993c-4cc5-a8c5-6e20fc64b17e/public/windows11.0-kb5054156-arm64\\_e57cf6837a8b9877786ec3e7a366503a6072f5e5.msu](https://catalog.sf.dl.delivery.mp.microsoft.com/filestreamingservice/files/2e42e2b9-993c-4cc5-a8c5-6e20fc64b17e/public/windows11.0-kb5054156-arm64_e57cf6837a8b9877786ec3e7a366503a6072f5e5.msu)

- 添加

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Install\Install\Mount" -PackagePath  
"D:\ISOTEMP_Custom\Install\Install\Update\windows11.0-kb5054156-  
arm64_e57cf6837a8b9877786ec3e7a366503a6072f5e5.msu"
```

## 6.2. 初始版本累积更新

- 安装此更新脱机下报错误代码: `0x80070228`, 不用管, 你不重新安装此更新, 安装其它累积更新会遇到无法添加。
- 累积更新 `KB5043080` 已无法从 <https://www.catalog.update.microsoft.com/Search.aspx?q=KB5043080> 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.sf.dl.delivery.mp.microsoft.com/filestreamingservice/files/d8b7f92b-bd35-4b4c-96e5-46ce984b31e0/public/windows11.0-kb5043080-x64\\_953449672073f8fb99badb4cc6d5d7849b9c83e8.msu](https://catalog.sf.dl.delivery.mp.microsoft.com/filestreamingservice/files/d8b7f92b-bd35-4b4c-96e5-46ce984b31e0/public/windows11.0-kb5043080-x64_953449672073f8fb99badb4cc6d5d7849b9c83e8.msu)

- 添加

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Install\Install\Mount" -PackagePath  
"D:\ISOTEMP_Custom\Install\Install\Update\windows11.0-kb5043080-  
x64_953449672073f8fb99badb4cc6d5d7849b9c83e8.msu"
```

### 6.2.2. Arm64

- 直连下载

[https://catalog.sf.dl.delivery.mp.microsoft.com/filestreamingservice/files/f263aa64-f367-42f0-9cad-328f342b93f7/public/windows11.0-kb5043080-arm64\\_df540a05f9b118e339c5520f4090bb5d450f090b.msu](https://catalog.sf.dl.delivery.mp.microsoft.com/filestreamingservice/files/f263aa64-f367-42f0-9cad-328f342b93f7/public/windows11.0-kb5043080-arm64_df540a05f9b118e339c5520f4090bb5d450f090b.msu)

- 添加

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Install\Install\Mount" -PackagePath  
"D:\ISOTEMP_Custom\Install\Install\Update\windows11.0-kb5043080-  
arm64_df540a05f9b118e339c5520f4090bb5d450f090b.msu"
```

## 6.3. 其它版本

安装其它版本前请按顺序添加: 检查点更新 (`KB5054156`) + 初始版本累积更新 (`KB5043080`) + 服务堆栈更新 (`SSU`) + 累积更新 (`KB5074105`)。

查阅“[Windows 11 版本信息](#)”, 例如下载累积更新: `KB5074105`, 版本号: `26200.7705`, 前往下载页面:

<https://www.catalog.update.microsoft.com/Search.aspx?q=KB5074105>, 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.sf.dl.delivery.mp.microsoft.com/filestreamingservice/files/1f3ba14b-3831-4dd8-8839-b63b795497e4/public/windows11.0-kb5074105-x64\\_74e1f93136eef7114e2bed8ff032b049ec62992a.msu](https://catalog.sf.dl.delivery.mp.microsoft.com/filestreamingservice/files/1f3ba14b-3831-4dd8-8839-b63b795497e4/public/windows11.0-kb5074105-x64_74e1f93136eef7114e2bed8ff032b049ec62992a.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 -> 打开压缩包，找到 SSU-\*-.cab 开头的文件，拖动到 D:\ISOTEMP\_Custom\Install\Install\Update

- 添加

优先安装服务堆栈更新 (SSU) “SSU-26100.7704-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-26100.7704-x64.cab"
```

- 累积更新

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Install\Install\Mount" -PackagePath  
"D:\ISOTEMP_Custom\Install\Install\Update\windows11.0-kb5074105-  
x64_74e1f93136eef7114e2bed8ff032b049ec62992a.msu"
```

#### 6.3.2. Arm64

- 直连下载

[https://catalog.sf.dl.delivery.mp.microsoft.com/filestreamingservice/files/c0006a9a-e5f4-4ac8-8399-2fd5b0af9d47/public/windows11.0-kb5074105-arm64\\_e07308c4ec1ad810544f6cddd3e7c1cb50373e9f.msu](https://catalog.sf.dl.delivery.mp.microsoft.com/filestreamingservice/files/c0006a9a-e5f4-4ac8-8399-2fd5b0af9d47/public/windows11.0-kb5074105-arm64_e07308c4ec1ad810544f6cddd3e7c1cb50373e9f.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 -> 打开压缩包，找到 SSU-\*-.cab 开头的文件，拖动到 D:\ISOTEMP\_Custom\Install\Install\Update

- 添加

优先安装服务堆栈更新 (SSU) “SSU-26100.7704-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-26100.7704-arm64.cab"
```

- 累积更新

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Install\Install\Mount" -PackagePath  
"D:\ISOTEMP_Custom\Install\Install\Update\windows11.0-kb5074105-  
arm64_e07308c4ec1ad810544f6cddd3e7c1cb50373e9f.msu"
```

#### 6.4. 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\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.Replace.wim.ps1
  - [https://github.com/ilkeyi/solutions/blob/main/\\_Learn/Packaging/tutorial/OS.11/24H2/Expand/Install/Install.WinRE.Replace.wim.ps1](https://github.com/ilkeyi/solutions/blob/main/_Learn/Packaging/tutorial/OS.11/24H2/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-imaged.exe" -ArgumentList $Arguments -wait -newwindow; Write-Host "
    Finish`n" -ForegroundColor Green;
}
```

## 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/ilkeyi/solutions/blob/main/\\_Learn/Packaging/tutorial/OS.11/24H2/Expand/Install/Install.WinRE.Replace.wim.ps1](https://github.com/ilkeyi/solutions/blob/main/_Learn/Packaging/tutorial/OS.11/24H2/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-imaged.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.11/24H2/Expand/Install/Install.Rebuild.wim.ps1](https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/24H2/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.11/24H2/Expand/Install/Install.Split.ps1](https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/24H2/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.11/24H2/Expand/Install/Install.Merging.ps1](https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/24H2/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.11/24H2/Expand/Install/Install.Compress.ps1](https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/24H2/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.11/24H2/Expand/Install/Install.Convert.ps1](https://github.com/ikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/24H2/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/ilkeyi/solutions/blob/main/\\_Learn/Packaging.tutorial/OS.11/24H2/Expand/Boot/Boot.Instl.lang.ps1](https://github.com/ilkeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/24H2/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-LanguagePack-Package*";
    File = "lp.cab";
  };
  @{
    Match = "*WinPE*Setup*Client*Package*";
    File = "WINPE-SETUP-CLIENT_zh-CN.CAB";
  };
  @{
    Match = "*WinPE*Setup*Package*";
    File = "WinPE-Setup_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 = "*SecureStartup*";
    File = "winpe-securestartup_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 = "*WinPE-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. 组件：映像中已安装的所有包

### 4.3.1. 查看

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

### 4.3.2. 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;
```

## 4.4. 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
```

## 4.5. 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。

### 4.5.1. 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"
```

### 4.5.2. 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

准备可用的累积更新文件, 请更改示例文件名: KB\_Boot.cab

### 5.1. 添加

```
Add-WindowsPackage -Path "D:\ISOTEMP_Custom\Boot\Boot\Mount" -PackagePath  
"D:\ISOTEMP_Custom\Boot\Boot\Update\KB_Boot.cab"
```

### 5.2. 删除

```
Remove-WindowsPackage -Path "D:\ISOTEMP_Custom\Boot\Boot\Mount" -PackagePath  
"D:\ISOTEMP_Custom\Boot\Boot\Update\KB_Boot.cab"
```

### 5.3. 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
```

#### 5.3.1. 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. 其它

### 7.1. 绕过 TPM 安装时检查

- Boot.Bypass.TPM.ps1
  - \Expand\Boot\Boot.Bypass.TPM.ps1
  - [https://github.com/ilikeyi/solutions/blob/main/\\_Learn/Packaging.tutorial/OS.11/24H2/Expand/Boot/Boot.Bypass.TPM.ps1](https://github.com/ilikeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/24H2/Expand/Boot/Boot.Bypass.TPM.ps1)
- 复制代码

```
$RegSystem = "D:\ISOTEMP_Custom\Boot\Boot\Mount\Windows\System32\Config\SYSTEM"; $RandomGuid = [guid]::NewGuid();  
Write-Host " HKLM:$($RandomGuid)"; New-PSDrive -PSProvider Registry -Name OtherTasksTPM -Root HKLM -ErrorAction
```

```
SilentlyContinue | Out-Null; Start-Process reg -ArgumentList "Load ""HKLM\$\($RandomGuid)"" ""$($RegSystem)"" -Wait -  
WindowStyle Hidden -ErrorAction SilentlyContinue; New-Item "HKLM:\$\($RandomGuid)\Setup\LabConfig" -force -ea  
SilentlyContinue | Out-Null; New-ItemProperty -LiteralPath "HKLM:\$\($RandomGuid)\Setup\LabConfig" -Name "BypassCPUCheck" -  
Value 1 -PropertyType DWord -Force -ea SilentlyContinue | Out-Null; New-ItemProperty -LiteralPath  
"HKLM:\$\($RandomGuid)\Setup\LabConfig" -Name "BypassStorageCheck" -Value 1 -PropertyType DWord -Force -ea  
SilentlyContinue | Out-Null; New-ItemProperty -LiteralPath "HKLM:\$\($RandomGuid)\Setup\LabConfig" -Name "BypassRAMCheck" -  
Value 1 -PropertyType DWord -Force -ea SilentlyContinue | Out-Null; New-ItemProperty -LiteralPath  
"HKLM:\$\($RandomGuid)\Setup\LabConfig" -Name "BypassTPMCheck" -Value 1 -PropertyType DWord -Force -ea SilentlyContinue |  
Out-Null; New-ItemProperty -LiteralPath "HKLM:\$\($RandomGuid)\Setup\LabConfig" -Name "BypassSecureBootCheck" -Value 1 -  
PropertyType DWord -Force -ea SilentlyContinue | Out-Null; [gc]::collect(); Start-Process reg -ArgumentList "unload  
""HKLM\$\($RandomGuid)"" -Wait -WindowStyle Hidden -ErrorAction SilentlyContinue; Remove-PSDrive -Name OtherTasksTPM;
```

#### 8. 保存映像: Boot.wim

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

#### 9. 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/ilikeyi/Multilingual>，如何下载：
  - 进入网站后，点击“代码”，“下载压缩包”，下载完成后得到 [main.zip](#) 压缩包文件。
  - 前往 <https://github.com/ilikeyi/Multilingual/releases> 下载页面，选择可用版本：1.1.1.1，选择下载源代码格式：zip，下载完成后得到 [Multilingual-1.1.1.1.zip](#) 压缩包文件；
- 将已下载的 [main.zip](#) 或 [Multilingual-1.1.1.1.zip](#)，解压到：D:\Multilingual-1.1.1.1，重命名：D:\Multilingual
- 学习[无人值守 Windows 安装参考](#)，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_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\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>`

##### 2.2.2.2.2. 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/ilkeyi/Solutions/raw/refs/heads/main/\\_Encapsulation/Modules/AIO/Oscdimg/arm64/oscdimg.exe](https://github.com/ilkeyi/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/ilkeyi/solutions/blob/main/\\_Learn/Packaging.tutorial/OS.11/24H2/Expand/ISO.ps1](https://github.com/ilkeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/24H2/Expand/ISO.ps1)
- 复制代码

```
$Oscdimg = "D:\Oscdimg.exe"; $ISO = "D:\ISOTEMP"; $Volume = "ISOTEMP"; $SaveTo = "D:\ISOTEMP.iso"; $Arguments = @("-m", "-o", "-u2", "-udfver102", "-l""$($Volume)""", "-bootdata:2#p0,e,b""$($ISO)\boot\efisboot.com""#pEF,e,b""$($ISO)\efi\microsoft\boot\efisys.bin""", """$($ISO)""", """$($SaveTo)"""); Start-Process -FilePath $Oscdimg -ArgumentList $Arguments -wait -nonewwindow;
```

## 章节 2 部署

### 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。
- 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：

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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- 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

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
```

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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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：

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

当 BCDEDIT 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：

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

```
bcdedit /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：

```
bcdedit /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：

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

有关如何使用 BCDEDIT 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. OOBEST 交互式创建新用户

设置自定义用户后，安装系统完成后，在 OOBEST 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,	

编组	所需版 ID	可附加版 ID	备注
		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 11 Home	Core	Core	
2	Windows 11 Home N	CoreN	CoreN	
3	Windows 11 Home Single Language	Core	CoreSingleLanguage	
4	Windows 11 Education	Professional	Education	
5	Windows 11 Education N	ProfessionalN	EducationN	
6	Windows 11 Pro	Professional	Professional	
7	Windows 11 Pro N	ProfessionalN	ProfessionalN	
8	Windows 11 Pro Education	Professional	ProfessionalEducation	
9	Windows 11 Pro Education N	ProfessionalN	ProfessionalEducationN	
10	Windows 11 Pro for Workstations	Professional	ProfessionalWorkstation	
11	Windows 11 Pro N for Workstations	ProfessionalN	ProfessionalWorkstationN	
12	Windows 11 Enterprise	Professional	Enterprise	
13	Windows 11 Enterprise multi-session / Virtual Desktops	Professional	ServerRdsh	
14	Windows 11 Enterprise N	ProfessionalN	EnterpriseN	
15	Windows 11 IoT Enterprise	Professional	IoTEnterprise	
16	Windows 11 IoT Enterprise Subscription	Professional	IoTEnterpriseK	
17	Windows 11 Enterprise LTSC	EnterpriseS	EnterpriseS	
18	Windows 11 Enterprise N LTSC	EnterpriseS	IoTEnterpriseS	
19	Windows 11 IoT Enterprise LTSC	EnterpriseS	IoTEnterpriseSK	
20	Windows 11 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/ilkeyi/solutions/blob/main/\\_Learn/Packaging.tutorial/OS.11/24H2/Expand/Install/Install.Additional.Edition.ps1](https://github.com/ilkeyi/solutions/blob/main/_Learn/Packaging.tutorial/OS.11/24H2/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.11\24H2\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\WinRE\Mount" -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。

## 章节 5 已知问题

## 1. 使用 Windows 11 25H2 (26200.6584) 初始版本添加“累积更新”后“固化更新”会导致“健康”问题

测试文件: [en-us\\_windows\\_11\\_business\\_editions\\_version\\_25h2\\_x64\\_dvd\\_41c521e7.iso](#), 在封装过程中添加累积更新 (KB5072033

“26200.7462” ) 后, 检查组件健康是正常的, 未固化更新前无任何问题。

使用固化更新命令 “`Dism /Image:"D:\ISOTEMP" /cleanup-image /StartComponentCleanup /ResetBase`” 后, 检查健康状态为“损坏”。已知解决方案:

- 使用 Windows 11 24H2 (26100.1742) 初始版本制作即可解决固化更新后的健康问题。

## 2. Windows 安全中心

在测试全新安装初始版本 Windows 11 25H2 26200.6584 中文版时, 映像文件: [zh-](#)

[cn\\_windows\\_11\\_consumer\\_editions\\_version\\_25h2\\_x64\\_dvd\\_0549fc93.iso](#), 安装系统完成后打开 Windows 安全中心是英文版, 语言包未汉化。该问题从 Windows 11 24H2 的 5 月 6 月份的镜像就已经开始出现, 打开 Windows 更新, 更新推送后即可解决。



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>

作者：Yi

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

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