

## SUSE Linux Enterprise Desktop 15 SP7

# 安装快速入门

本《快速入门》将引导您逐步完成安装 SUSE® Linux Enterprise Desktop 15 SP7 的过程。

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# 1 欢迎安装 SUSE Linux Enterprise Desktop

执行以下过程可在所有支持的硬件平台上安装本产品。这些过程假设您已成功引导至安装系统中。有关更详细的安装说明和部署策略，请参见《Deployment Guide》。有关引导至安装系统中所需满足的先决条件，请参见《Deployment Guide》，第 2 章 “Installation on AMD64 and Intel 64”。

## 1.1 统一安装程序

从 SUSE Linux Enterprise Desktop 15 开始，安装媒体仅包含统一安装程序 - 一个用于安装、更新和注册所有 SUSE Linux Enterprise 基础产品的精简系统。在安装期间，您可以通过选择要基于统一安装程序安装的模块和扩展来添加功能。

## 1.2 脱机安装或者安装但不注册

默认安装媒体 SLE-15-SP7-Online-ARCH-GM-media1.iso 的大小已经过优化，不包含任何模块和扩展。因此，安装过程中需要能够访问网络，以注册您的产品并检索模块和扩展的储存库数据。

若要安装但不注册系统，请使用 <https://www.suse.com/download/sled/> 中的 SLE-15-SP7-Full-ARCH-GM-media1.iso 映像，并参见《Deployment Guide》，第 5 章

“Installation steps”，第 5.6.3 节 “Installing without registration” 获取相关说明。



### 提示：将安装媒体映像复制到可卸闪存盘

使用以下命令将安装映像的内容复制到可卸闪存盘。

```
> sudo dd if=IMAGE of=FLASH_DISK bs=4M && sync
```

需将 IMAGE 替换为映像文件 SLE-15-SP7-Online-ARCH-GM-media1.iso 或 SLE-15-SP7-Full-ARCH-GM-media1.iso 的路径。需将 FLASH\_DISK 替换为闪存设备。要识别设备，请插入该设备并运行：

```
# grep -Ff <(hwinfo --disk --short) <(hwinfo --usb --short)
disk:
```

/dev/sdc

General USB Flash Disk

确保设备的大小足以容纳所需的映像。可使用以下命令检查设备的大小：

```
# fdisk -l /dev/sdc | grep -e "^/dev"
/dev/sdc1 *      2048 31490047 31488000  15G 83 Linux
```

在此示例中，设备的容量为 15 GB。对于 SLE-15-SP7-Full-ARCH-GM-media1.iso 使用的命令是：

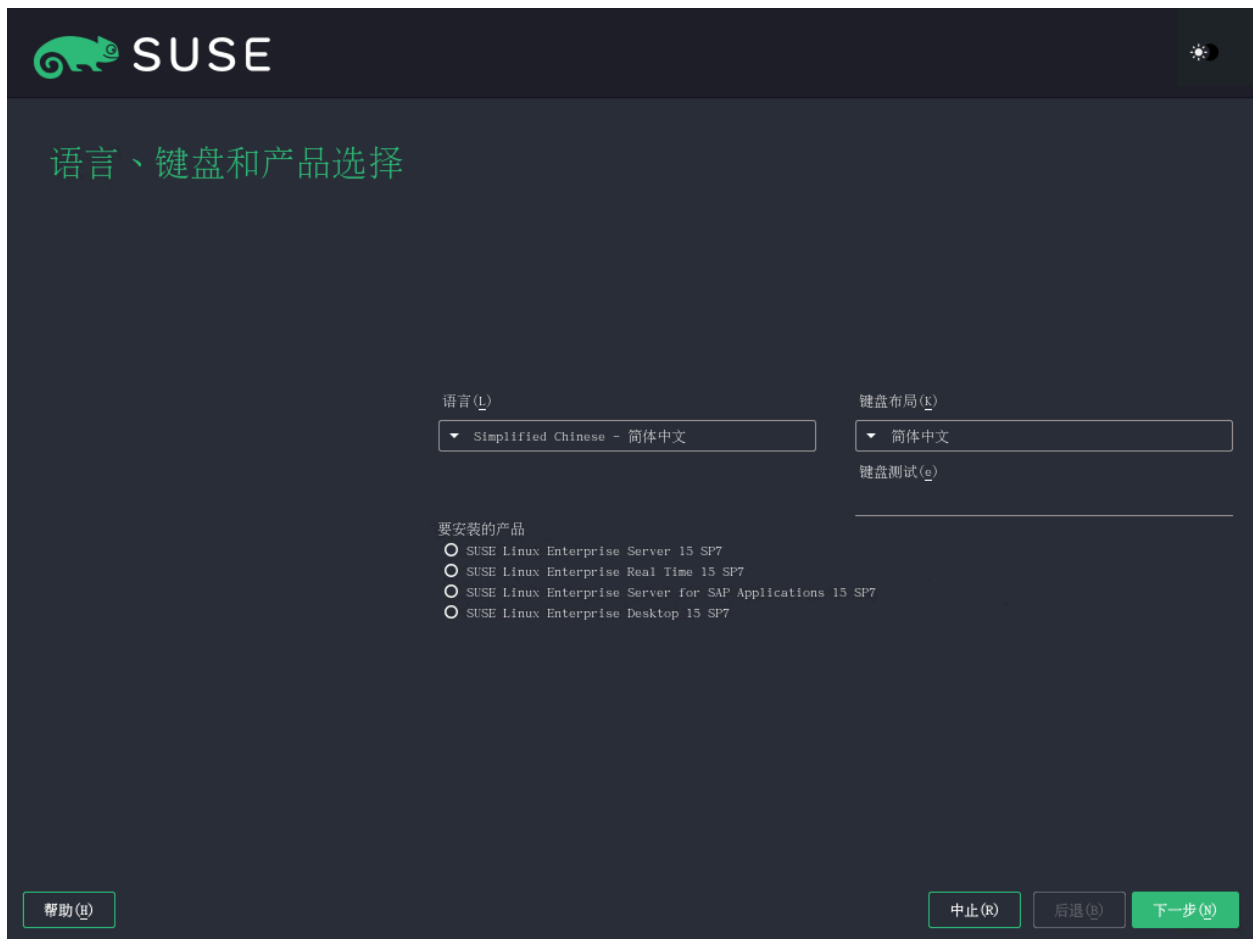
```
dd if=SLE-15-SP7-Full-ARCH-GM-media1.iso of=/dev/sdc bs=4M && sync
```

在运行 dd 命令时，不得挂载该设备。请注意，分区中的所有数据都将被删除！

## 2 安装过程

要安装 SUSE Linux Enterprise Desktop，请从统一安装程序媒体引导至安装程序，然后开始安装。

## 2.1 语言、键盘和产品选择



语言和键盘布局设置会根据您在引导屏幕上选择的语言进行初始化。如果您之前未更改默认设置，则语言为“英语（美国）”。如果需要，可在此处更改设置。使用键盘测试文本框可测试布局。


使用统一安装程序可以安装所有 SUSE Linux Enterprise 基础产品：

- SUSE Linux Enterprise Server 15 SP7（有关安装说明，请参见 <https://documentation.suse.com/sles/> )
- SUSE Linux Enterprise Desktop 15 SP7（本文所述产品）
- SUSE Linux Enterprise Real Time 15 SP7（有关安装说明，请参见 <https://documentation.suse.com/sle-rt/> )
- SUSE Linux Enterprise Server for SAP Applications 15 SP7（有关安装说明，请参见 <https://documentation.suse.com/sles-sap> )

选择要安装的产品。您需有相应产品的注册码。本文档假设您已选择 SUSE Linux Enterprise Desktop。单击下一步继续。

## 提示：浅色主题和高对比度主题

如果您难以看清安装程序中的标签，可以更改挂件颜色和主题。

单击  按钮或按 **Shift + F3** 键打开主题选择对话框。从列表选择一个主题，然后关闭对话框。

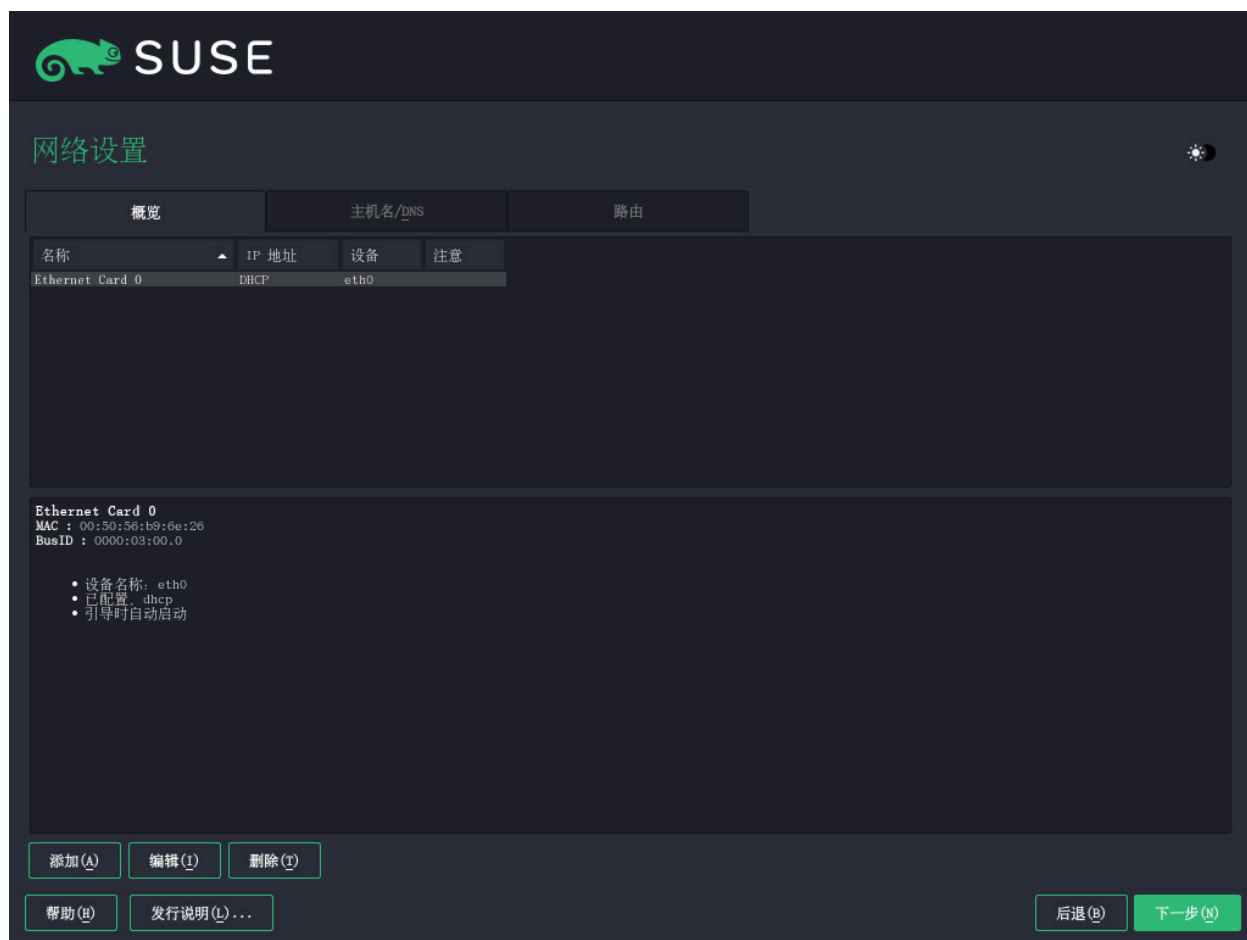
按 **Shift + F4** 可切换到适合视力受损用户的颜色方案。再按一下按钮可切换回默认方案。

## 2.2 许可协议



阅读许可协议。此内容以您在引导屏幕上选择的语言显示。可以通过许可证语言下拉列表获取翻译。您需要选中我同意许可条款接受该协议，才能安装 SUSE Linux Enterprise Desktop。单击下一步继续。

## 2.3 网络设置

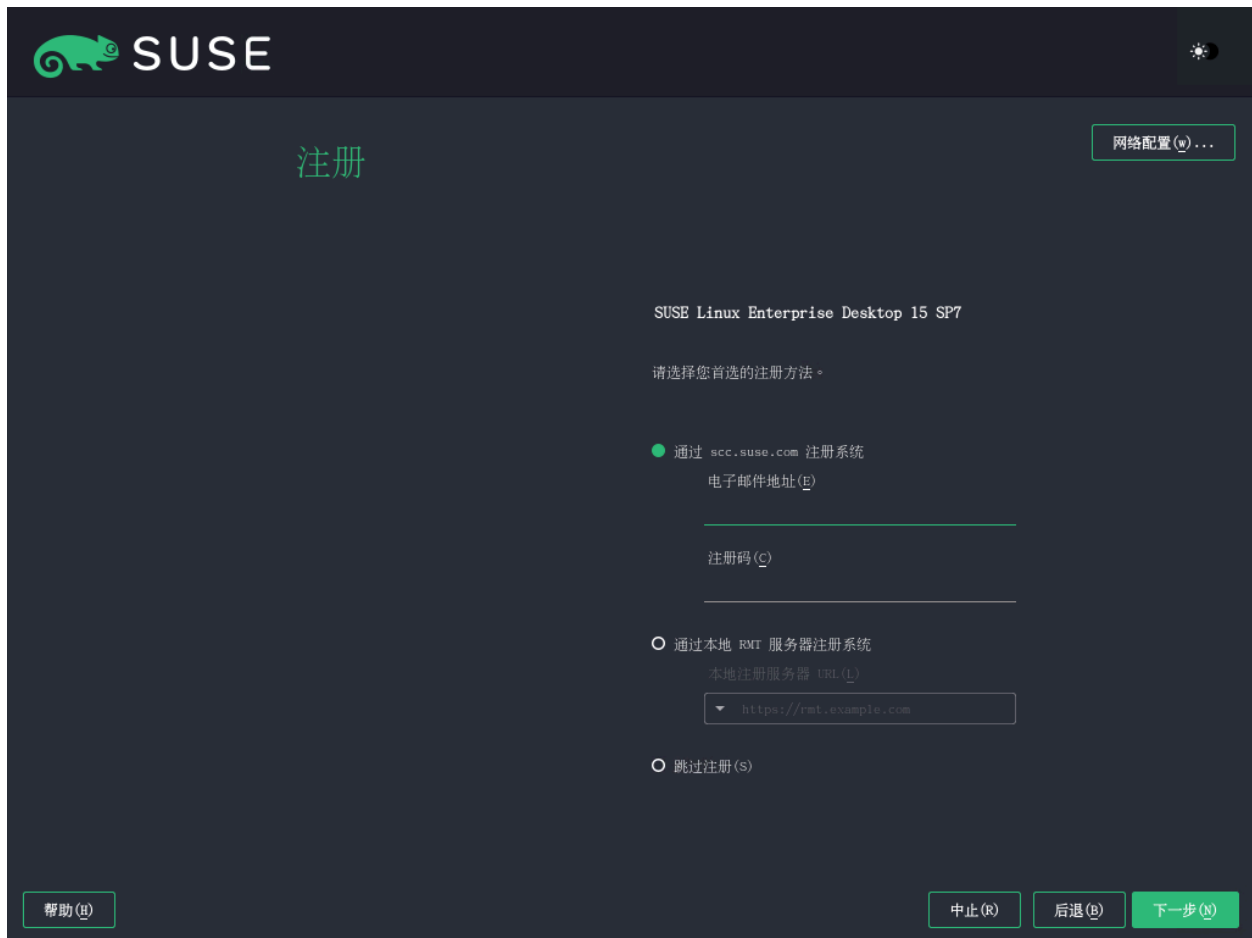


随后会进行系统分析，在此过程中，安装程序会探测存储设备，并尝试查找其他安装的系统。

如果在开始安装期间已通过 DHCP 自动配置了网络，您将转到注册步骤。

如果尚未配置网络，则网络设置对话框将会打开。从列表中选择网络接口，然后使用编辑对其进行配置。也可以手动添加一个接口。有关详细信息，请参见《Deployment Guide》，第 5 章 “Installation steps”，第 5.5 节 “Network settings” 和《管理指南》，第 23 章 “基本网络知识”，第 23.4 节 “使用 YaST 配置网络连接”。如果您希望在不访问网络的情况下执行安装，请不做任何更改跳过此步骤，然后单击下一步继续。

## 2.4 注册



The image shows the SUSE Linux Enterprise Desktop 15 SP7 registration window. At the top left is the SUSE logo. The title bar says '注册' (Registration). In the top right corner, there is a button labeled '网络配置 (W) ...' (Network Configuration (W) ...). The main content area has the text 'SUSE Linux Enterprise Desktop 15 SP7' and '请选择您首选的注册方法。' (Please select your preferred registration method.). There are three radio button options: 1. '通过 scc.suse.com 注册系统' (Register via scc.suse.com system) with a sub-label '电子邮件地址 (E)' (Email address (E)) and a text input field. 2. '通过本地 RMT 服务器注册系统' (Register via local RMT server system) with a sub-label '本地注册服务器 URL (U)' (Local registration server URL (U)) and a dropdown menu showing 'https://rmt.example.com'. 3. '跳过注册 (S)' (Skip registration (S)). At the bottom left is a button labeled '帮助 (H)' (Help (H)). At the bottom right are three buttons: '中止 (R)' (Cancel (R)), '后退 (B)' (Back (B)), and '下一步 (N)' (Next (N)).

要获取技术支持和产品更新，需要在 SUSE Customer Center 或本地注册服务器中注册并激活 SUSE Linux Enterprise Desktop。在此阶段注册产品还可让您立即获得访问更新储存库的权限。如此，您便可以将最新的更新和可用补丁随系统一起安装。

在注册时，将从注册服务器加载模块和扩展的储存库和依赖项。

### 通过 scc.suse.com 注册系统

要注册到 SUSE Customer Center 中，请输入与您的 SUSE Customer Center 帐户关联的电子邮件地址，以及 SUSE Linux Enterprise Desktop 的注册代码。单击下一步继续。

### 通过本地 RMT 服务器注册系统

如果您的组织提供了本地注册服务器，您也可以在該服务器中注册。激活通过本地 RMT 服务器注册系统，然后从下拉列表中选择相应 URL，或者键入地址。单击下一步继续。

## 跳过注册

如果您处于脱机状态，或想跳过注册过程，请激活跳过注册。单击确定接受警告，然后单击下一步继续。

### ！ 重要：跳过注册

需要注册您的系统和扩展才能检索更新以及获得支持资格。仅当从 SLE-15-SP7-Full-ARCH-GM-media1.iso 映像安装时，才能跳过注册。

如果在安装期间未注册，以后随时可以从运行中的系统上注册。为此，请运行 YaST › 产品注册或命令行工具 SUSEConnect。


### 📎 注意：信任储存库

根据您的硬件的不同，注册期间可添加包含硬件驱动程序的其他储存库。如果要添加，系统将要求您信任其中的每个储存库。

### 💡 提示：在安装时安装产品补丁

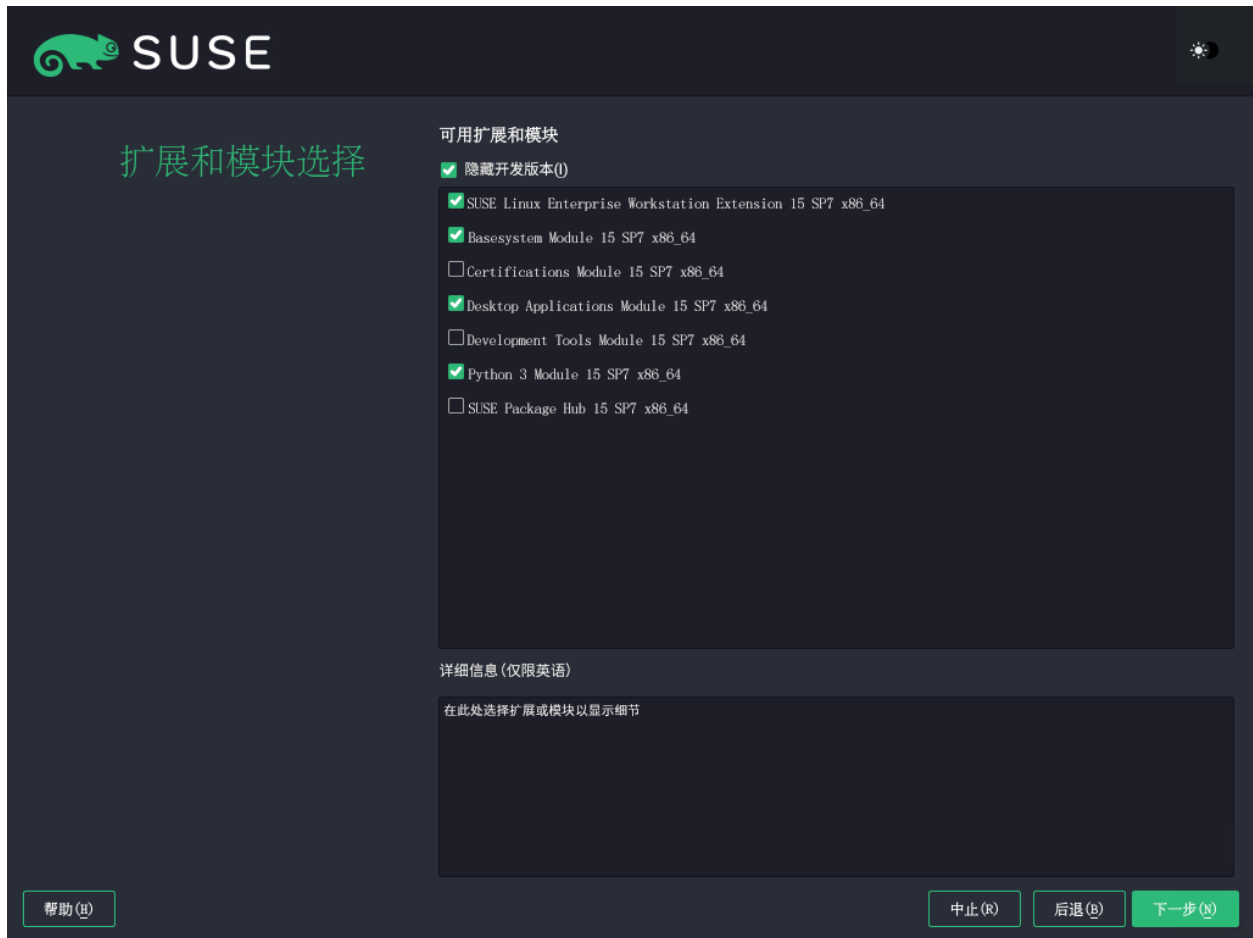
成功注册 SUSE Linux Enterprise Desktop 后，系统会在安装期间询问您是否安装最新的可用联机更新。如果您选择是，最新的软件包将随系统一起安装，如此便不必在安装后应用更新。建议激活此选项。

### 📎 注意：用于接收更新的防火墙设置

如果系统受到会阻止传出流量的防火墙的保护，请确保允许通过端口 80 和 443 连接至 <https://scc.suse.com/> 和 <https://updates.suse.com>，以便接收更新。有关详细信息，例如 IP 地址和代理服务器配置，请参见 <https://www.suse.com/support/kb/doc/?id=000021034> 。



## 2.5 扩展和模块选择



成功注册系统后，安装程序会列出适用于 SUSE Linux Enterprise Desktop 的模块和扩展。模块是用于根据需要定制产品的组件。它们包含在 SUSE Linux Enterprise Desktop 订阅中。扩展可在产品中添加功能。扩展只能单独购买。

在安装的第一步中选择的产品将决定有哪些模块或扩展可用。有关模块及其生命周期的说明，请选择一个模块查看附带的文本。《[Modules and Extensions Quick Start](https://documentation.suse.com/sles-15/html/SLES-all/article-modules.html)》（[模块和扩展快速入门](https://documentation.suse.com/sles-15/html/SLES-all/article-modules.html)）（<https://documentation.suse.com/sles-15/html/SLES-all/article-modules.html>）[🔗](#)中提供了更多详细信息。

模块的选择会间接影响安装范围，因为该选择定义了哪些软件源（储存库）可用于安装，以及可用于运行中的系统。

以下模块和扩展适用于 SUSE Linux Enterprise Desktop：

## **Basesystem 模块**

此模块在统一安装程序的基础上添加一个基本系统。其他所有模块和扩展都需要此模块。只包含基础系统的安装范围相当于旧版 SUSE Linux Enterprise Desktop 的安装软件集 minimal system。系统默认已选择安装此模块，不应将其取消选择。

**依赖项：**无

## **Certifications Module**

包含 FIPS 认证软件包。

**依赖项：**Server Applications

## **Desktop Applications Module**

向系统添加图形用户界面和最基本的桌面应用程序。系统默认已选择安装此模块；不建议将其取消选择。

**依赖项：**Basesystem

## **Development Tools Module**

包含编译及调试应用程序所需的编译器（包括 gcc）和库。取代了以前的 Software Development Kit (SDK)。

**依赖项：**Basesystem、Desktop Applications

## **Python 3 Module**

此模块包含选定 Python 3 软件包的最新版本。


**依赖项：**Basesystem

## **SUSE Linux Enterprise Workstation Extension**

包含其他桌面工具（如办公套件）或多媒体软件（如音乐和视频播放器）。此扩展包含在 SUSE Linux Enterprise Desktop 订阅中，且默认已选定加以安装；不建议将其取消选择。

**依赖项：**Basesystem、Desktop Applications

## **SUSE Package Hub**

用于访问 openSUSE 社区维护的各个 SUSE Linux Enterprise Desktop 软件包。提供的这些软件包不享有 L3 支持，且不影响 SUSE Linux Enterprise Desktop 的受支持情况。有关详细信息，请参见 <https://packagehub.suse.com/> .

**依赖项：**Basesystem

某些模块需要已安装其他模块。因此，在选择某个模块时，可能会自动选择其他模块来满足依赖关系。

根据具体的产品，注册服务器可能会将模块和扩展标记为建议安装。系统会将建议的模块和扩展预先选为要加以注册和安装。如要避免安装这些建议的项目，请手动取消选择。

选择要安装的模块和扩展，然后单击下一步继续。如果您选择了一个或多个扩展，系统会提示您提供相应的注册码。根据所做的选择，您可能还需要接受附加的许可协议。

## 重要：脱机安装默认选择的模块

使用 SLE-15-SP7-Full-ARCH-GM-media1.iso 执行脱机安装时，默认只会选择 Basesystem Module。要安装 SUSE Linux Enterprise Desktop 的全部默认软件包集，请另外选择 Desktop Applications Module、SUSE Linux Enterprise Workstation Extension 和 Python 3 Module。

## 2.6 附加产品



附加产品对话框可让您向 SUSE Linux Enterprise Desktop 添加并非由 SUSE Customer Center 提供的其他软件源（称为“储存库”）。附加产品可以包括第三方产品和驱动程序，以及适用于您系统的其他软件。



### 提示：在安装期间添加驱动程序

您还可以通过附加产品对话框添加驱动程序更新储存库。<https://drivers.suse.com/> 上会提供 SUSE Linux Enterprise 的驱动程序更新。这些驱动程序已通过 SUSE SolidDriver Program 创建。

如果要跳过此步骤，请单击下一步继续。否则，请激活我要安装其他附加产品。请指定媒体类型、本地路径或托管储存库的网络资源，然后按照屏幕上的指导操作。

选中下载储存库说明文件可立即下载用于描述储存库的文件。如果不激活，系统将在安装启动后下载它们。单击下一步继续，并根据需要插入媒体。您可能需要接受附加许可协议，具体取决于附加产品的内容。单击下一步继续。如果您选择了需要注册密钥的附加产品，在继续下一步之前，系统会要求您输入该密钥。

## 2.7 系统角色



可用的系统角色取决于所选的模块和扩展。例如，系统角色定义要预先选定加以安装的整套软件集。请参考屏幕上的说明做出选择。选择角色，然后单击下一步继续。如果在已启用的模块中，只有一个角色或者没有任何角色适合相关的基础产品，则不会显示系统角色对话框。



### 提示：发行说明

从此步骤开始，可以通过选择发行说明在安装过程中的任一屏幕上查看发行说明。

## 2.8 建议的分区



查看系统建议的分区设置。如果需要，可以更改它们。您可以选择以下选项：

### 引导性配置

启动可用来优化分区建议的向导。此处可用的选项取决于系统设置。如果系统包含多个硬盘，则您可以选择要使用哪个磁盘，以及要将根分区放到哪个位置。如果磁盘已包含分区，请决定是要去除分区还是调整分区的大小。

在后续步骤中，您还可以添加 LVM 支持和磁盘加密配置。您可以更改根分区的文件系统，并决定是否创建单独的主分区。

### 专家分区程序

打开专家分区程序，如《Deployment Guide》，第 7 章 “Expert Partitioner”，第 7.1 节 “Using the Expert Partitioner” 中所述。此选项可让您完全控制分区设置，以及创建自定义设置。它面向的是专家用户。



## 警告：磁盘空间单位

请注意，在分区时，磁盘空间的计量单位是二进制而不是十进制。例如，如果您输入 1GB、1GiB 或 1G 作为大小，这些数字全部表示 1 GiB（千兆二进制字节），而不是 1 GB（千兆字节）。

### 二进制

1 GiB = 1 073 741 824 字节。

### 十进制

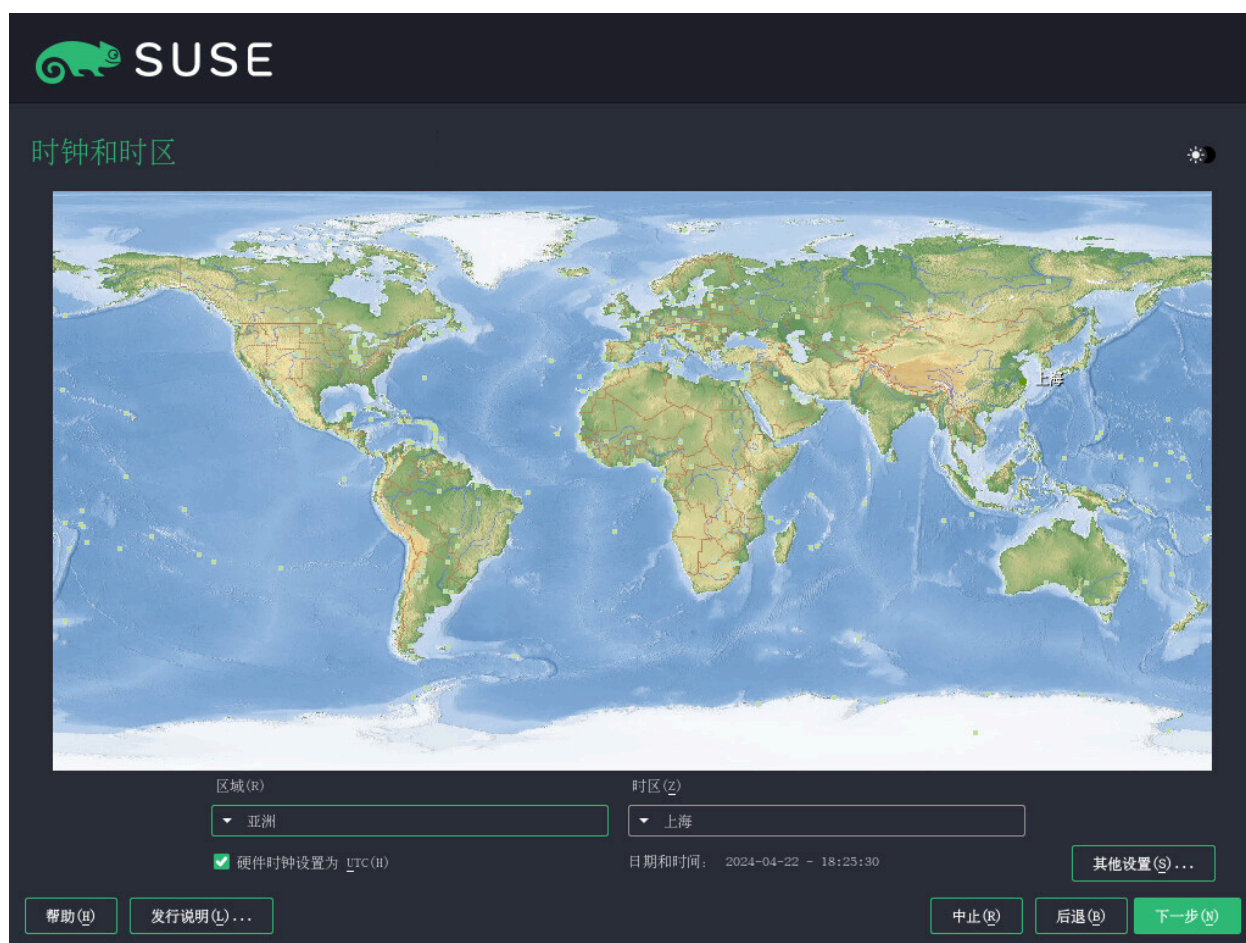
1 GB = 1 000 000 000 字节。

### 差异

1 GiB  $\approx$  1.07 GB。

要接受建议的设置而不做任何改动，请选择下一步继续。

## 2.9 时钟和时区



选择系统使用的时钟和时区。要手动调整时间或配置 NTP 服务器以保持时间的同步，请选择其他设置。有关详细信息，请参见《Deployment Guide》，第 5 章 “Installation steps”，第 5.11 节 “Clock and time zone”。单击下一步继续。



## 2.10 本地用户



本地用户

● 创建新用户 (C)

用户的完整名称 (F)

用户名 (U)

口令 (P)

确认口令 (O)

☐ 对系统管理员使用此口令 (S)

☐ 自动登录 (A)

○ 跳过用户创建 (S)

帮助 (H) 发行说明 (L)... 中止 (R) 后退 (B) 下一步 (N)

要创建本地用户，请在用户的完整名称字段中输入姓氏和名称，在用户名字段中输入登录名，在口令字段中输入口令。

口令至少为 8 个字符，而且应包含大小写字母及数字。口令最长为 72 个字符，区分大小写。

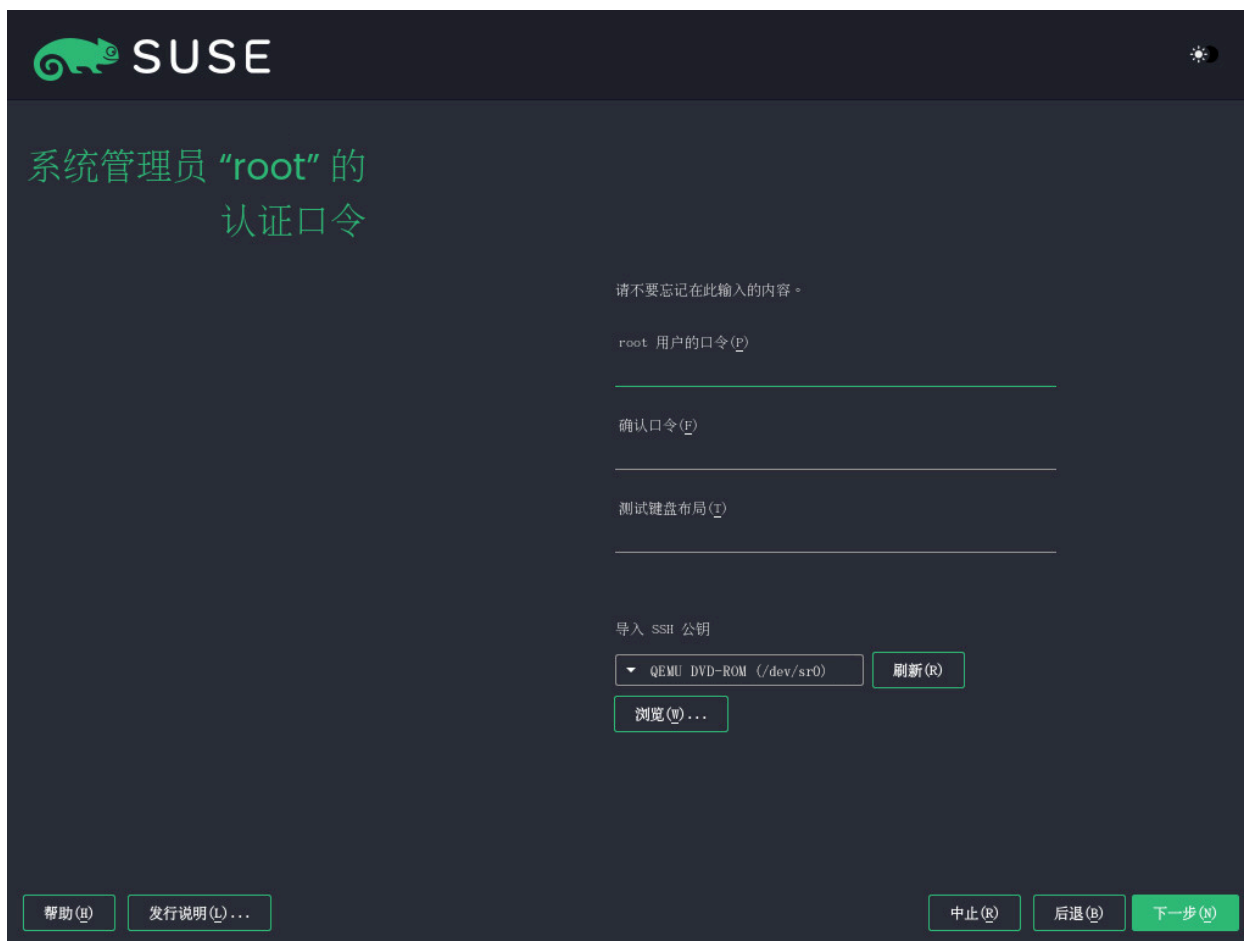
出于安全考虑，强烈建议您**不要**启用自动登录。此外，也**不应**对系统管理员使用此口令，而应在安装的下一步中提供一个单独的 root 口令。

如果在包含旧版 Linux 安装的系统上安装，您可以从旧版安装导入用户数据。单击选择用户查看可用用户帐户的列表。选择一个或多个用户。

在集中管理用户的环境（例如，通过 NIS 或 LDAP 进行管理）中，您可以跳过本地用户的创建过程。在这种情况下，请选择跳过用户创建。

单击下一步继续。

## 2.11 系统管理员 “root” 的身份验证



SUSE

### 系统管理员 “root” 的认证口令

请不要忘记在此输入的内容。

root 用户的口令(P)

确认口令(E)

测试键盘布局(T)

导入 SSH 公钥

QEMU DVD-ROM (/dev/sr0) 刷新(R)

浏览(W)...

帮助(H) 发行说明(L)... 中止(R) 后退(B) 下一步(N)

键入系统管理员（称为 root 用户）的口令，或者提供公共 SSH 密钥。如果需要，您也可以同时使用这两种身份凭证。

由于 root 用户配备了众多的权限，因此请慎重选择口令。千万不要忘记 root 口令！您在此处输入之后，就不能检索该口令。



### 提示：口令和键盘布局

建议仅使用 US ASCII 字符。如果发生系统错误，或者您需要在救援模式下启动系统时，键盘可能不会本地化。

如果您要使用公共密钥通过 SSH 远程访问系统，请从可卸媒体或现有分区导入密钥。有关更多信息，请参见《Deployment Guide》，第 5 章 “Installation steps”，第 5.13 节 “Authentication for the system administrator root”。

单击下一步继续。

## 2.12 安装设置



使用安装设置屏幕查看并根据需要更改若干建议的安装设置。每个设置的当前配置都在此处列出。要进行更改，请单击标题。有些设置（如防火墙或 SSH）可以直接通过单击相应链接更改。

### ！ 重要：远程访问

您也可以在日后随时从安装的系统更改此处可以更改的设置。但是，如果您在安装后需要立即进行远程访问，则可能需在安全设置中打开 SSH 端口。

## 软件

安装范围由为此安装选择的模块和扩展定义。但是，根据您所做的选择，不一定会选中模块中提供的所有软件包加以安装。

单击软件会打开软件选择和系统任务屏幕，您可在此处选择或取消选择某些软件集来更改软件选择。每个软件集都包含特定功能（例如 KVM 主机服务器）所需的几个软件包。如果想要基于要安装的软件包进行更详细的选择，请选择细节切换到 YaST 软件管理器。有关更多信息，请参见《管理指南》，第 8 章“安装或去除软件”。

## 引导

此部分显示引导加载程序配置。建议您仅在确实需要时才更改默认设置。有关细节，请参见《管理指南》，第 18 章“引导加载程序 GRUB 2”。

## 安全性

CPU 缓解策略是指为防御 CPU 边信道攻击而部署的软件缓解策略对应的内核引导命令行参数。单击选定的项可选择其他选项。有关详细信息，请参见《管理指南》，第 18 章“引导加载程序 GRUB 2” CPU 缓解措施。

系统默认会对配置的所有网络接口都启用防火墙。要完全禁用 `firewalld`，请单击禁用（不建议如此）。有关配置细节，请参见《安全和强化指南》，第 23 章“伪装和防火墙”。



### 注意：用于接收更新的防火墙设置

如果系统受到会阻止传出流量的防火墙的保护，请确保允许通过端口 80 和 443 连接至 <https://scc.suse.com/> 和 <https://updates.suse.com/>，以便接收更新。有关详细信息，例如 IP 地址和代理服务器配置，请参见 <https://www.suse.com/support/kb/doc/?id=000021034>。

SSH 服务默认处于启用状态，但在防火墙中其端口 (22) 是关闭的。单击打开可将该端口打开，单击禁用可将该服务禁用。请注意，如果禁用了 SSH，将无法进行远程登录。有关更多信息，请参考《安全和强化指南》，第 22 章“使用 OpenSSH 保护网络操作”。

默认的主要 Linux 安全模块为 AppArmor。要禁用该模块，请在安全设置中针对模块选择无。

## 安全策略

单击以启用 [Defense Information Systems Agency STIG 安全策略](#)。如果有任何安装设置与该策略不兼容，系统将提示您进行相应修改。有些设置可以自动调整，其余设置则需要用户输入信息。

启用安全性配置文件可让系统在首次引导时执行完整的 SCAP 修正。您也可以选择仅扫描或不执行任何操作，稍后再使用 OpenSCAP 手动修正系统。有关详细信息，请参见《Deployment Guide》，第 5 章 “Installation steps”，第 5.14.4 节 “Security Profiles”。

## 网络配置

显示当前网络配置。默认情况下，**wicked** 用于安装的服务器，NetworkManager 用于桌面工作负载。单击网络配置可更改设置。有关详细信息，请参见《管理指南》，第 23 章 “基本网络知识”，第 23.4 节 “使用 YaST 配置网络连接”。

## Kdump

如果发生内核崩溃，Kdump 可将内存映像（“内核转储”）保存到文件系统中。如此，您便可以通过调试转储文件来查找崩溃原因。Kdump 已预先配置好，默认处于启用状态。有关更多信息，请参见《系统分析和微调指南》，第 18 章 “Kexec 和 Kdump”，第 18.7 节 “Kdump 基本配置”。

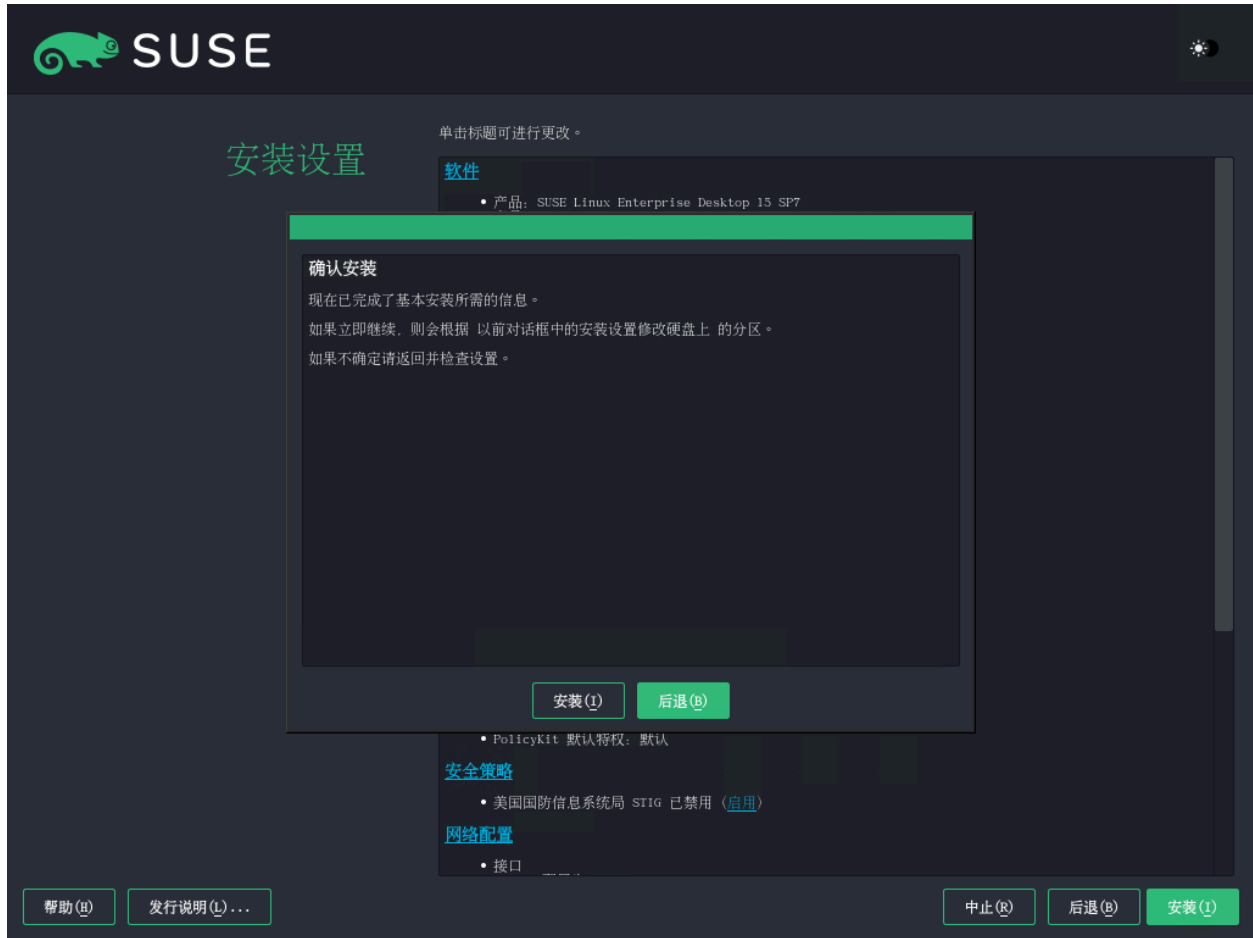
## 默认 systemd 目标

SUSE Linux Enterprise Desktop 默认会引导至图形桌面。由于从命令行运行桌面系统并不太符合常理，因此建议不要更改此设置。

## 系统

单击系统可查看详细的硬件信息。在随后显示的屏幕中，还可以更改内核设置，有关更多信息，请参见《Deployment Guide》，第 5 章 “Installation steps”，第 5.14.8 节 “System”。

## 2.13 开始安装



在安装设置屏幕上确定了系统配置后，单击**安装**。根据您做的软件选择，您可能需要先同意许可协议，安装确认屏幕才会弹出。到目前为止，我们还未对您的系统进行任何更改。当您再次单击**安装**后，安装过程即会开始。

## 2.14 安装过程



安装期间会显示进度。安装例程完成后，计算机会重引导至安装的系统。

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