



网页部署与云服务器操作指南

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About me

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网页部署

以 PKUHUB 笔记平台为例

准备条件：

1.一台云服务器

2.一个已备案的域名

3.网页源码文件

部署步骤：

1.登陆服务器运行网页服务

2.域名解析和反向代理

3.配置 ssl 证书

关于 SSH

SSH(Secure Shell)

- 一种用于远程登录和其他网络服务的加密协议
- 这里只介绍在 github 和云服务器登陆的应用场景



```
(base) → Ethan 🐱 ~ ssh pkuhub
Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 5.15.0-157-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

System information as of Fri Oct 17 18:53:08 CST 2025

System load:          0.0
Usage of /:           6.0% of 193.65GB
Memory usage:         8%
Swap usage:           0%
Processes:            270
Users logged in:     1
IPv4 address for enp3s0: 10.129.241.79
IPv6 address for enp3s0: 2001:da8:201:2940:f816:3eff:fe94:a9e1

* Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s just raised the bar for easy, resilient and secure K8s cluster deployment.

https://ubuntu.com/engage/secure-kubernetes-at-the-edge

Expanded Security Maintenance for Applications is not enabled.

36 updates can be applied immediately.
To see these additional updates run: apt list --upgradable

5 additional security updates can be applied with ESM Apps.
Learn more about enabling ESM Apps service at https://ubuntu.com/esm

Last login: Mon Oct 13 22:42:20 2025 from 10.7.24.108
ubuntu@pkuhub:~$ |
```

```
# 生成SSH密钥对  
ssh-keygen -t rsa -b 4096 -C "your_email@example.com"
```

这会在本机'/.ssh/'目录下生成一对公钥和私钥文件,下图即为公钥

```
(base) →Ethan😊 ~ cd .ssh  
(base) →Ethan😊 .ssh ls  
authorized_keys config id_rsa id_rsa.pub known_hosts known  
_hosts.old  
(base) →Ethan😊 .ssh cat id_rsa.pub  
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAQDqvxz3D6i9aY+MYeN86jGNqo/d64ueYSUhuhh5c4QXiLZ6f  
g9HSTSm2IKQLAxmqRsMRax0Y17mdtd15kYGz10s3ZVA6iLaA7gkV3gT/JNqk1g9+hV+h02+aA53aYdCKgaDX+  
U70J6JLanVYvidV44uhMyeacjvxXa+zS7S1l1i1B0bJnG8mgkT0mMqfA/t4fPKA8YLlR6APN/uxe2F14dcuda  
LCQNEvYnmL+8MCu9u6WiKBfQ8C0hMRcVSDVVAQ/HODGnW0cZFT7IvaA1H/X8L+o/Yuqo/w/Uico2jyEIrrmNW  
vBupq0+mYRe7RfaWYKiyAXy5Y4Fr1E7rPTAmprl0/BRIKVQNjj8HdgQ9ai00207Po2JpChrPrRyNkN/pWiqdk  
TM59jshCoojDXWCjKplQ+WYDebTNp0aQudcBEyqzAwp40bC/pBCCCDE49ZDyt8SCKCZHRKeIPuTMc5g65iN0H  
TdtU+o9Ymfo0UnEL8RVCMVtPT59uuHs64djboZHhxIjzHEJPdlwEFq6FDtEg5P5WF7a9+IFz9TrymWEZxwPSb  
+saj4pvAdUKIVI3TKy8YjClzG9wg/wIsuTeJ1NJsc+4KwEs/EaTWCfiI/o/KCJ541i1NoTX/kYrfI+9eZXzA/  
erGIPQiczdycs1YlJjZ2jb3tIesEagB+Pk6784kjPQ== yanghan0911@gmail.com
```

```
# 在远程服务器的~/.ssh/authorized_keys文件中添加公钥  
vim ~/.ssh/authorized_keys
```

```
ubuntu@ethan:~$ cat .ssh/authorized_keys  
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAQAC10M83qYjllT7jJTn7Ve68QjthWWUBNRQiSVDZ29DBHfgvQ  
aqoK15DxHo0hKmirvolZ+/Zf5D5r5b9DGcwfK6xPawnxQBp2PdUqzIA/HTX47mQchawE//8aoJhJ7TwD7HBz  
z+Vq59+RWgX7Ynp0hGyocZ4gK5DujearrPBC8/Fak7AZ8Px2+4abudJWP5MsME4YuLIh6VOTSSqhsyY/yKZhL  
YYxf29NEC8AQ4yVe7svaCwdTCFmR/mpAuwpHWHOABnEHYnLEW4gHqrxF2ZgdoXv0i1DKVzLBE1LspJPg606  
ZRHMyJn8xDyjYaeGDnRpWoy04qYHH3x2fSFmHWs0qZ8TPHsEfWI1gcEwQ4pciuWU1YLr8gNfJgrjdCZ3w2iN9R  
AK+oIczAmSGI0yVF4o0da9ypEqr6IIz0raSk3a8Cqk/uC2ewtgpzbxNACObhLP7wCGARuN29xNmT0h8bmDpg  
+FDaEwP+sYZUPHqfoMw2i5VtKrF3yZ8AG4uivjYFDGIkGLFEwjwQYbTwTecPinD8hL6V9Tzq2JpG1voAsBcI0  
F/0byyKYq2Y6dStCta+VkBVAeX12N6C2j0US596z0MusMy61zX0H/ZAs+2eqXkdIlld3U12johrsFJxLLy+nGa  
DQVzL5m+FCUyTnWWQZpdx64I858LAzPERPCNAOnTdw== ethan@hanlife02.com  
ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAILRG1hkSVRoY3+wFgEdpYv8B83KiCcxKNfgHpKtZft+9 2475  
274997@qq.com  
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAQDqxvz3D6i9aY+MYeN86jGNqo/d64ueYSUhuhh5c4QXilZ6f  
g9HSTS2IKQLAxmqRsMRax0Y17mdtd15kYGz10s3ZVA6iLa7qkV3gT/JNqk1g9+hV+h02+aA53aYdCKgaDX+  
U70J6JLanVYvidV44uhMyeacjvxXa+zS7S1l1i1B0bJnG8mgkTQmMqfA/t4fPKA8YLLR6APN/uxe2F14dcuda  
LCQNEvYnmL+8MCu9u6WiKBFQ8C0hMRcVSDVVAQ/HODGnW0cZFT7IvaA1H/X8L+o/Yuqo/w/Uico2jyEIrrmNW  
vBupq0+mYRe7RfaWYKiyAXy5Y4Fr1E7rPTAmprl0/BRIKVQNjj8HdgQ9ai00207Po2JpChrPrRyNkN/pWiqdk  
TM59jsjCoojDXWCjKplQ+WYDebTNp0aQudcBEyzAwP40bC/pBCCDDE49ZDyt8SCKCZHRKeIPuTMc5g65iN0H  
TdtU+o9Ymf00UnEL8RVCMVtPT59uuHs64djboZHhxIjzHEJPdlwEFq6FDtEg5P5WF7a9+IFz9TrymWEZxwPSb  
+saj4pvAdUKIVI3TKy8YjClzG9wg/wIsuTeJ1NJsc+4KwEs/EaTWcfiI/o/KCJ541i1NoTX/kYrfI+9eZXzA/  
erGIPQiczdycs1YLJjZ2jB3tIesEagB+Pk6784kjPQ== yanghan0911@gmail.com
```

```
# 连接远程服务器  
ssh username@remote_host  
  
# 关于SSH的一些其他参数  
ssh -p port_number username@remote_host  
ssh -i /path/to/private_key username@remote_host  
  
# 配置config文件简化连接  
vim ~/.ssh/config  
ssh ethan02
```

```
Host ethan02  
  HostName 10.129.244.196  
  User ubuntu  
  ProxyCommand nc -X 5 -x 127.0.0.1:7890 %h %p
```

在 github-Settings-SSH and GPG keys 中添加公钥

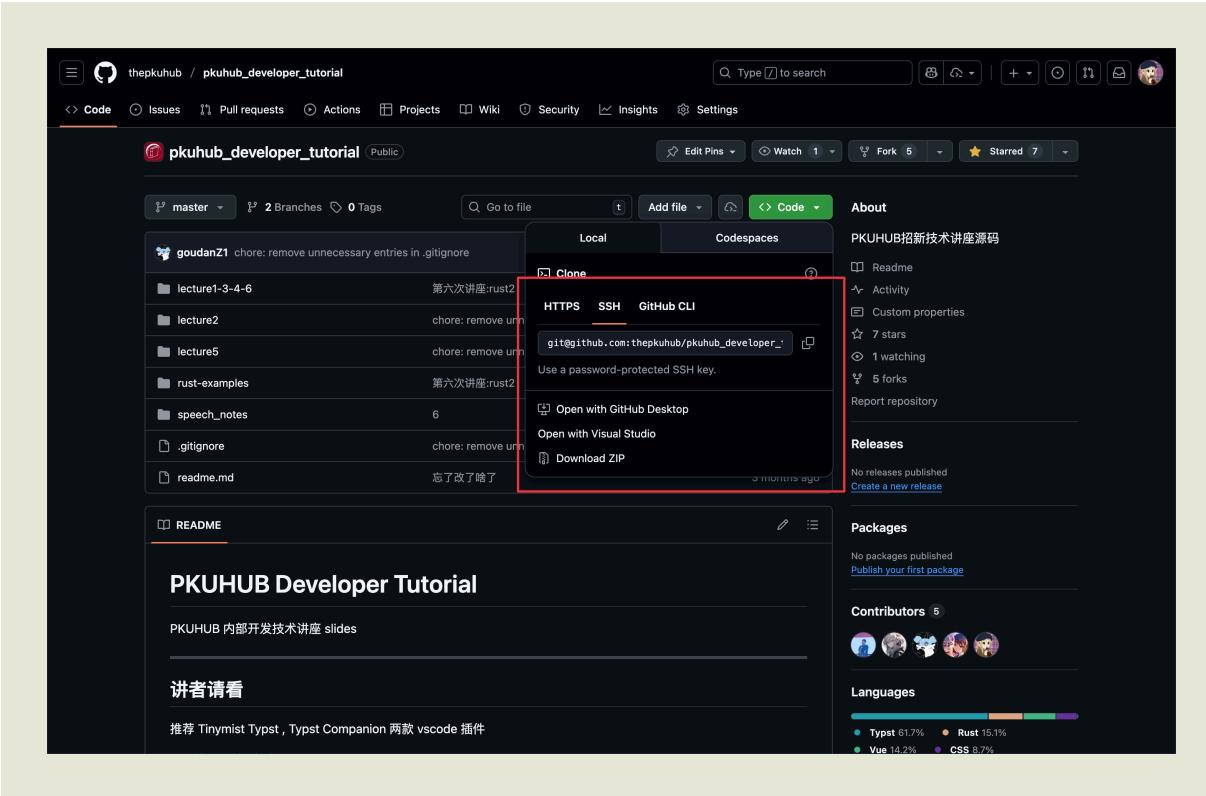
The screenshot shows the GitHub Settings interface for managing SSH and GPG keys. The left sidebar is dark-themed and includes sections for Public profile, Account, Appearance, Accessibility, Notifications, Access (Billing and licensing, Emails, Password and authentication, Sessions), SSH and GPG keys (which is currently selected and highlighted in blue), Organizations, Enterprises, and Moderation. Below these are sections for Code, planning, and automation (Repositories, Codespaces, Models, Packages, Copilot, Pages, Saved replies). The main content area has a light background and displays a list titled "SSH keys". It says, "This is a list of SSH keys associated with your account. Remove any keys that you do not recognize." Below this is a section titled "Authentication keys" which lists five entries:

- CLab (SSH) - Delete button
- hanlife02.com (SSH) - Delete button
- windows (SSH) - Delete button
- cr'clab (SSH) - Delete button
- mac (SSH) - Delete button

A green "New SSH key" button is located at the top right of the "Authentication keys" section.

之后就可以通过ssh协议来进行git操作了

```
git clone git@github.com:thepkuhub/pkuhub_developer_tutorial.git
```



1. 登陆服务器运行网页服务

```
# 登陆服务器
ssh pkuhub

# clone代码
git clone git@github.com:thepkuhub/pkuhub.git

# 运行服务
cd pkuhub
pip install -r requirements.txt
python main.py
```

这会在服务器的 5000 端口启动笔记平台服务

2. 域名解析和反向代理

打开域名服务商的解析页面,添加一条 A 记录,将域名指向服务器公网 IP 地址

云解析 DNS

我的解析

套餐服务

批量操作

插件中心

IGTM智能全局流量管理

IGTM概览

我的实例

我的套餐

HTTPDNS

移动解析

其他 DNS

Private DNS

反向解析

反向解析

A

默认

10.129.241.79

600

修改 暂停 备注 删除 生效检测

在服务器上安装并配置 Nginx, 将域名请求反向代理到 5000 端口, 这里使用 1panel 作为 Nginx 管理面板

编辑 - /opt/1panel/apps/openresty/openresty/www/sites/i.pkuhub.cn/proxy/root.conf

主题 Visual Studio Dark 语言 plaintext 行尾符 LF (Linux) 自动换行 启用

缩略图 启用

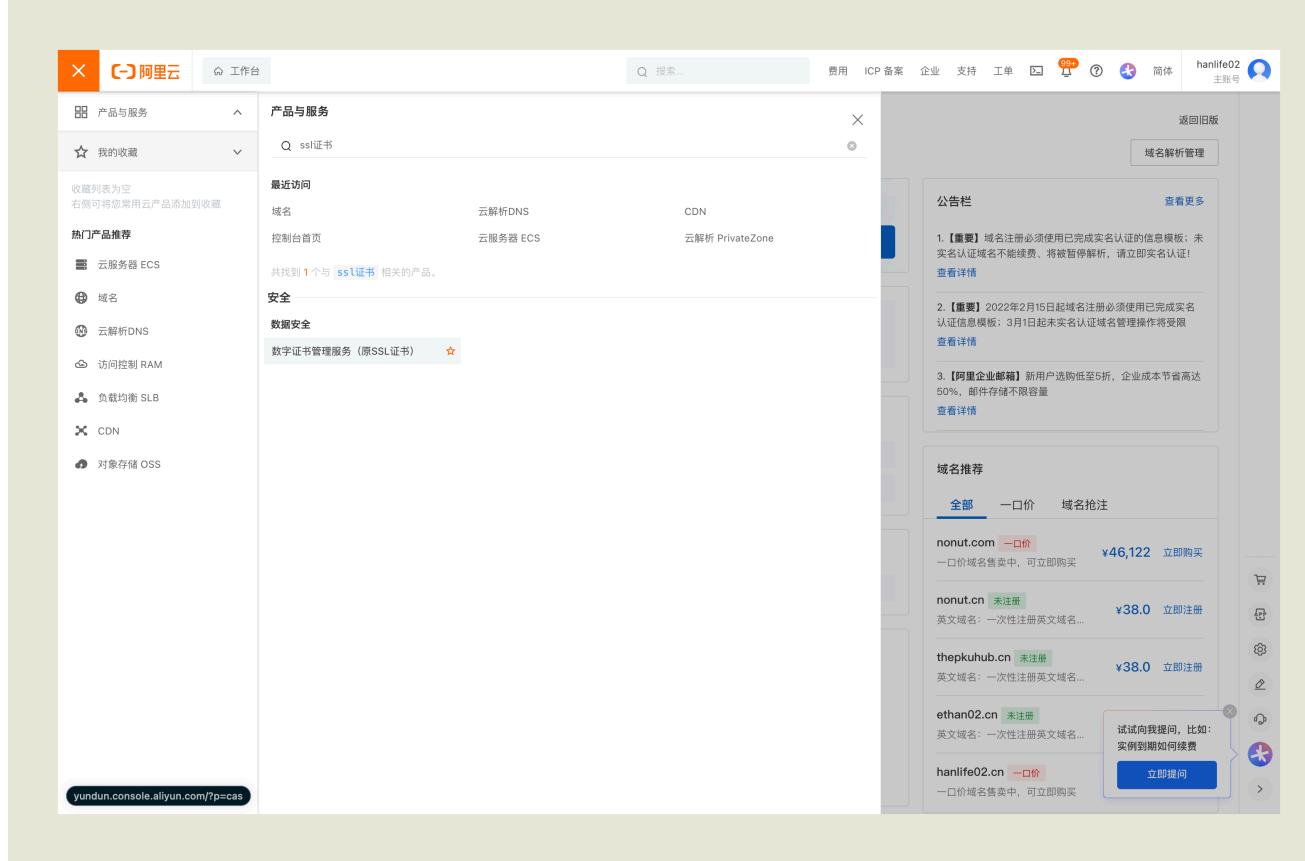
↑ 上一级 刷新

root.conf

```
1 location ^~ / {
2     proxy_pass http://127.0.0.1:5000;
3     proxy_set_header Host $host;
4     proxy_set_header X-Real-IP $remote_addr;
5     proxy_set_header X-Forwarded-For $proxy_add_x_forwarded_for;
6     proxy_set_header REMOTE-HOST $remote_addr;
7     proxy_set_header Upgrade $http_upgrade;
8     proxy_set_header Connection $http_connection;
9     proxy_set_header X-Forwarded-Proto $scheme;
10    proxy_http_version 1.1;
11    add_header X-Cache $upstream_cache_status;
12    add_header Cache-Control no-cache;
13    proxy_ssl_server_name off;
14    proxy_ssl_name $proxy_host;
15    add_header Strict-Transport-Security "max-age=31536000";
16 }
```

3. 配置 SSL 证书

在域名注册商处申请 ssl 证书(或者借助 certbot、1panel 等工具)



在 Nginx 中配置 ssl 证书，使网站支持 https 访问

The screenshot shows the 1Panel web interface for managing a website's SSL configuration. The left sidebar has a '网站' (Website) section selected. The main panel has a '域名设置' (Domain Settings) header with a '启用 HTTPS' (Enable HTTPS) toggle switch turned on. A note below says 'IP 为域名的网站, 需要设置为默认站点才能正常访问' (For IP-based domains, you need to set it as the default site to access normally). Under the '证书设置' (Certificate Settings) tab, there are sections for 'HTTP 选项' (HTTP Options), 'HSTS' (with '启用' checked), 'SSL 选项' (set to '手动导入证书' - Manual Import Certificate), '导入方式' (Import Method - '粘贴代码' - Paste Code), and '私钥(KEY)' (Private Key). Below these is a large input field for '证书(PEM格式)' (Certificate (PEM format)). At the bottom, under 'SSL 协议设置' (SSL Protocol Settings), '支持的协议版本' (Supported Protocol Versions) includes 'TLS 1.3' (checked), 'TLS 1.2' (checked), 'TLS 1.1' (checked), and 'TLS 1.0' (checked). It also includes options for 'SSL V3 (不安全)' (SSL V3 (Insecure)) and 'SSL V2 (不安全)' (SSL V2 (Insecure)). The '加密算法' (Encryption Algorithms) dropdown shows a list: ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-RSA-AES256-GCM-SHA384:ECDHE-ECDSA-CHACHA20-POLY1305:ECDHE-RSA-CHACHA20-POLY1305:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-RSA-AES128-GCM-SHA256:DHE-RSA-AES256-GCM-SHA384:DHE-RSA-AES128-GCM-SHA256.



云服务器指南

在 ubuntu24.04 系统上进行演示

常用命令

```
# 登陆你的云服务器，处于~(解析为/home/ubuntu)目录下，这是当前用户ubuntu的主目录  
ssh ubuntu@host  
  
# 通过`pwd`命令查看当前路径  
pwd  
# 关于路径缩写，`~`代表当前用户的主目录，`..`代表当前目录，`...`代表上一级目录  
  
# 你可以通过`ls`命令查看当前目录下的文件和文件夹  
ls  
la # 显示所有文件，包括隐藏文件  
  
# 通过`cd`命令进入某个文件夹  
cd .ssh  
  
# 通过`mkdir`命令创建一个新文件夹
```

```
mkdir data
```

```
# 通过`rm -r`命令删除一个文件夹及其内容  
rm -r data
```

```
# 通过`touch`命令创建一个新文件  
touch file.txt
```

```
# 通过`rm`命令删除一个文件  
rm file.txt
```

```
# 通过`vim`命令编辑一个文本文件  
vim file.txt
```

```
# 通过`cat`命令查看文件内容  
cat file.txt
```

```
# sudo命令以root用户运行某个命令,例如  
sudo apt update  
# 软件源的配置,参考 https://mirrors.pku.edu.cn/Help/Ubuntu  
  
# 查找指定进程的格式  
ps aux | grep 进程关键字  
  
# scp命令用于在本地和远程主机之间复制文件  
scp local_file_path username@remote_host:remote_file_path  
  
# exit命令退出当前ssh连接  
exit
```

一些好用的工具推荐 — tmux、pm2、btop、rsync、docker

```
# tmux - 终端复用工具，可以在一个终端窗口中创建多个会话和窗口
sudo apt install tmux
tmux new -s session_name # 创建新会话
tmux attach -t session_name # 连接到已有会话
tmux ls # 列出所有会话
tmux kill-session -t session_name # 关闭会话
```

```
# pm2 - Node.js进程管理器，可以用来管理和保持应用程序的运行
sudo npm install -g pm2
pm2 start app.js # 启动应用
pm2 list # 列出所有应用
pm2 stop app_name # 停止应用
pm2 restart app_name # 重启应用
```

```
# btop - 系统资源监控工具，类似于htop，但界面更美观
sudo apt install btop
```

```
btop # 启动btop
```

```
# rsync - 高效的文件同步工具，用于在本地和远程主机之间同步文件和目录  
rsync -avz source/ username@remote_host:destination/
```

```
# docker - 容器化平台，用于打包、分发和运行应用程序
```

```
sudo apt install docker.io
```

```
sudo systemctl start docker # 启动docker服务
```

```
sudo systemctl enable docker # 设置开机自启
```

```
docker run hello-world # 运行测试容器
```

控制面板推荐 —— 1panel

项目地址: <https://github.com/1Panel-dev/1Panel>

申请 ssl 证书, 自动续签, 配置 ssl 证书等功能

The screenshot shows the 'Certificates' section of the 1panel control panel. At the top, there are several buttons: '证书' (selected), '申请证书', '上传证书', '自签证书', 'Acme 账户', 'DNS 账户', and '删除'. Below this is a table titled '证书' (Certificates) with the following columns: 域名 (Domain), 其他域名 (Other Domains), 申请方式 (Application Method), Acme 账号 (Acme Account), 状态 (Status), 日志 (Logs), 颁发组织 (Issuing Organization), and 操作 (Operations). The table lists six entries:

域名	其他域名	申请方式	Acme 账号	状态	日志	颁发组织	操作
slides...		DNS账号	ethan@hanlife02.com	正常	查看	Let's Encrypt	详情 申请 编辑 更多
frp.pk...		DNS账号	ethan@hanlife02.com	正常	查看	Let's Encrypt	详情 申请 编辑 更多
i.pkuh...		DNS账号	ethan@hanlife02.com	正常	查看	Let's Encrypt	详情 申请 编辑 更多
status...		DNS账号	ethan@hanlife02.com	正常	查看	Let's Encrypt	详情 申请 编辑 更多
thuhu...		DNS账号	ethan@hanlife02.com	正常	查看	Let's Encrypt	详情 申请 编辑 更多
1pane...		DNS账号	ethan@hanlife02.com	正常	查看	Let's Encrypt	详情 申请 编辑 更多

At the bottom, there is a pagination bar with the text '共 6 条 10条/页 < 1 > 前往 1 页'.

容器化运行各种服务

The screenshot shows the 1Panel web interface, specifically the Python section. The left sidebar contains various management options like Overview, Application Store, Websites, Certificates, and Running Environments. The Running Environments section is currently selected and highlighted with a blue border. The main content area displays a table for managing Python applications.

名称	运行目录	版本	外部映射端口	状态	日志	时间	操作
pkuhub	/	3.13.0	5000 ↗	已启动	查看	2025-05-20 22:5...	停止 启动 重启 编辑 删除

Below the table, there is a pagination bar indicating "共 1 条" and "10条/页". The current page is "1" of "1" page. There are also navigation arrows for previous and next pages.

At the bottom of the interface, there is a footer with copyright information: "Copyright © 2014-2025 飞致云". To the right of the footer, there are links for "论坛求助", "使用手册", "项目地址", "社区版 v1.10.29-lts", and "更新".

管理数据库

The screenshot shows the 1Panel web interface for managing databases. The left sidebar has a dark theme with various navigation options: 概览, 应用商店, 网站, AI, 数据库 (selected), 容器, 系统, 终端, 计划任务, 工具箱, 高级功能, 日志审计, and 面板设置. The main content area is titled 'PostgreSQL' and shows a table of remote servers. The table columns are: 名称 (Name), 数据库地址 (Database Address), 用户名 (Username), 密码 (Password), 描述 (Description), 时间 (Time), and 操作 (Operations). There are two entries:

名称	数据库地址	用户名	密码	描述	时间	操作
██████	127.0.0.1	postgres	*****	-	2025-07-03 07:14:43	编辑 解绑
lobechat	127.0.0.1	postgres	*****	-	2025-05-13 22:32:14	编辑 解绑

At the bottom, there is a pagination bar showing '共 2 条' (2 items total), '20条/页' (20 items per page), page number '1', and a '前往' (Go To) button.

管理容器

The screenshot shows the 1Panel Container Management interface. The left sidebar has a dark theme with various icons and labels: 概览 (Overview), 应用商店 (App Store), 网站 (Website), AI, 数据库 (Database), 容器 (Container) [highlighted in blue], 系统 (System), 终端 (Terminal), 计划任务 (Scheduled Tasks), 工具箱 (Toolbox), 高级功能 (Advanced Features), 日志审计 (Log Audit), and 面板设置 (Panel Settings). The main content area has tabs at the top: 概览 (Overview), 容器 (Container) [highlighted in blue], 编排 (Orchestration), 镜像 (Image), 网络 (Network), 存储卷 (Storage Volume), 仓库 (Repository), 编排模版 (Orchestration Template), and 配置 (Configuration). Below these tabs, there are three buttons: 所有 * 18 (All * 18), 已启动 * 17 (Running * 17), and 已创建 * 1 (Created * 1). The main table lists 18 containers:

名称	镜像	状态	资源使用率	IP 地址	关联资源	端口	操作
lobe-chat	lobehub/lobe-ch...	已启动	CPU: 0.00% 内存: 5.68%				终端 日志 更多
lobe-casdoor	casbin/casdoor	已启动	CPU: 0.00% 内存: 0.28%				终端 日志 更多
lobe-minio	minio/minio	已启动	CPU: 0.01% 内存: 1.86%				终端 日志 更多
lobe-searxng	searxng/searxng	已启动	CPU: 0.00% 内存: 0.09%	172.19.0.2		8080/	终端 日志 更多
lobe-network	alpine	已启动	CPU: 0.00% 内存: 0.01%	172.19.0.3		7/0.0 7/0.0 7/0.0 展开...	终端 日志 更多
lobe-postgres	pgvector/pgvect...	已启动	CPU: 0.00% 内存: 0.72%	172.19.0.4		7/0.0 7/0.0	终端 日志 更多
portal-frontend	1panel/node:22.2.0	已启动	CPU: 0.00% 内存: 0.26%	172.18.0.4		7/0.0	终端 日志 更多
portal-backend	1panel/node:22.2.0	已启动	CPU: 0.00% 内存: 0.10%	172.18.0.5		7/0.0	终端 日志 更多

At the bottom, there are pagination controls: 共 18 条, 50条/页, 前往 1, 前往 1, and 页.



谢谢大家！

《网页部署与云服务器操作指南》—— Ethan

<https://github.com/hanlife02>

ethan@hanlife02.com