

# 在高可用性中升级FMC

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## 简介

本文档介绍在高可用性(HA)中升级安全防火墙管理中心(FMC)环境的步骤。

## 先决条件

### 要求

Cisco 建议您了解以下主题：

- 高可用性概念
- 安全FMC配置

### 使用的组件

本文档中的信息基于虚拟安全FMC 7.1.0版。

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您的网络处于活动状态，请确保您了解所有命令的潜在影响。

## 背景信息

升级一次必须是一个对等体。

首先，暂停对等体之间的同步。

然后，需要首先在备用模式下完成升级，然后再在主用FMC中完成升级。

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警告：当备用对等体处理预检查/安装时，两个对等体都切换到活动状态；这称为裂脑。升级时完全可以预料到。在此期间，不得进行或部署任何配置更改。如果您进行了任何配置更改，则同步重新启动后可能会丢失配置。

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## 升级前

1. 规划升级路径。在FMC部署中，通常先升级FMC，然后升级其受管设备。请始终知道您刚才执行了哪个升级，接下来执行哪个升级。
2. 阅读所有升级指南并规划配置更改。
3. 检查带宽。确保您的管理网络具有执行大型数据传输所需的带宽。
4. 计划维护窗口。

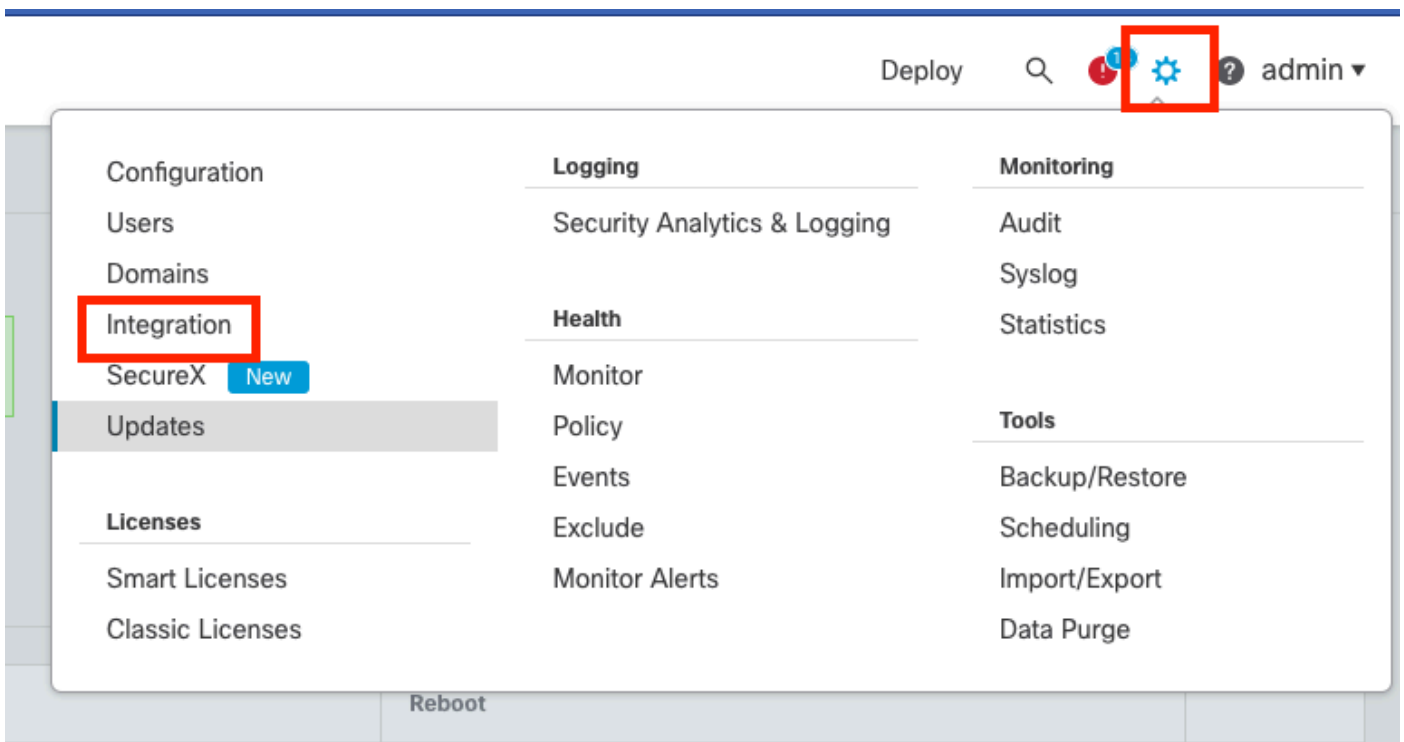
5. 在升级前后备份配置。System > Backup / Restore > Firepower Management backup。将备份下载到本地计算机。
6. 升级虚拟托管。当您运行较旧版本的VMware时，这是必需的。
7. 检查配置。
8. 检查NTP同步。  
FMC：选择System > Configuration > Time。  
设备：使用show time CLI命令。
9. 检查磁盘空间。
10. 部署配置。在FMC高可用性部署中，您只需从活动对等体进行部署。
11. 检查正在运行的任务。确保没有挂起的部署。

## 升级 程序

### 步骤1:暂停同步

在活动单元上，导航到FMC上的High Availability选项卡。

系统>集成>高可用性



暂停同步。选择系统和集成

Firepower Management Center System / Integration / High Availability

Overview Analysis Policies Devices Objects AMP Intelligence Deploy admin

Cloud Services Realms Identity Sources **High Availability** eStreamer Host Input Client Smart Software Manager On-Prem Peer Manager

Switch Peer Roles Break HA Pause Synchronization

| Summary         |                                                                      |
|-----------------|----------------------------------------------------------------------|
| Status          | Synchronization task is in progress                                  |
| Synchronization | OK                                                                   |
| Active System   | 10.4.11.84<br>( HA synchronization time : Tue Jul 18 02:06:47 2023 ) |
| Standby System  | 10.4.11.85<br>( HA synchronization time : Tue Jul 18 02:06:00 2023 ) |

| System Status    |                                              |                                               |
|------------------|----------------------------------------------|-----------------------------------------------|
|                  | Local<br>Active - Primary<br>(10.4.11.84)    | Remote<br>Standby - Secondary<br>(10.4.11.85) |
| Operating System | 7.1.0                                        | 7.1.0                                         |
| Software Version | 7.1.0-90                                     | 7.1.0-90                                      |
| Model            | Cisco Firepower Management Center for VMware | Cisco Firepower Management Center for VMware  |

暂停同步。选择高可用性

## 选择Pause Synchronization。

Firepower Management Center System / Integration / High Availability

Overview Analysis Policies Devices Objects AMP Intelligence Deploy admin

Cloud Services Realms Identity Sources **High Availability** eStreamer Host Input Client Smart Software Manager On-Prem Peer Manager

Switch Peer Roles Break HA **Pause Synchronization**

| Summary         |                                                                      |
|-----------------|----------------------------------------------------------------------|
| Status          | Healthy                                                              |
| Synchronization | OK                                                                   |
| Active System   | 10.4.11.84<br>( HA synchronization time : Tue Jul 18 02:32:23 2023 ) |
| Standby System  | 10.4.11.85<br>( HA synchronization time : Tue Jul 18 02:27:29 2023 ) |

| System Status    |                                              |                                               |
|------------------|----------------------------------------------|-----------------------------------------------|
|                  | Local<br>Active - Primary<br>(10.4.11.84)    | Remote<br>Standby - Secondary<br>(10.4.11.85) |
| Operating System | 7.1.0                                        | 7.1.0                                         |
| Software Version | 7.1.0-90                                     | 7.1.0-90                                      |
| Model            | Cisco Firepower Management Center for VMware | Cisco Firepower Management Center for VMware  |

暂停同步

等待同步暂停。完成时，用户必须处于“暂停”状态。

| Summary         |                                                                                                                                                                                             |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Status          | ▲ Degraded- Synchronization incomplete<br>( Both Management Centers are configured to run in standalone mode , Database is not configured for high availability , Synchronization paused. ) |
| Synchronization | ▲ Paused by user                                                                                                                                                                            |
| Active System   | 10.4.11.84<br>( HA synchronization time : Tue Jul 18 02:32:23 2023 )                                                                                                                        |
| Standby System  | 10.4.11.85<br>( HA synchronization time : Tue Jul 18 02:27:29 2023 )                                                                                                                        |

每个用户的同步状态必须为“暂停”

## 第二步：上传升级包

登录到备用设备并上传升级包。

System > Updates > Upload Update






FMC Product Updates Devices AMP admin

Product Updates

Download Updates Upload Update

Currently running software version: 7.1.0  
Currently installed VDB version: build 346 ( 2021-08-24 21:48:15 )

Available Updates Readiness History

| Type                              | Version    | Date                         | Reboot |                                                                                                                                                                                                                                                             |
|-----------------------------------|------------|------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cisco Firepower Mgmt Center Patch | 7.1.0.1-28 | Tue Feb 22 23:32:26 UTC 2022 | Yes    |                                                                                       |
| Cisco FTD Upgrade                 | 7.0.4-55   | Sun Aug 7 19:43:24 UTC 2022  | Yes    |    |

上传升级包

浏览之前下载的要升级版本的软件包。

Currently running software version: 7.1.0

### Updates

Upload software updates and patches here.

Action  Upload local software update package  
 Specify software update source (FTD devices only)

Package  Cisco\_Secure\_FW\_Mgmt\_Center\_Upgrade-7.2.4-169.sh.REL.tar

Cancel Upload

选择升级文件

### 第三步：就绪性检查

对要升级的设备运行就绪性检查。

点击适当升级软件包旁边的install图标。

Product Updates

Download Updates


Upload Update

Currently running software version: 7.1.0

Currently installed VDB version: build 346 ( 2021-08-24 21:48:15 )

Available Updates

Readiness History

| Type                                | Version   | Date                         | Reboot |                                                                                     |
|-------------------------------------|-----------|------------------------------|--------|-------------------------------------------------------------------------------------|
| Cisco Secure FW Mgmt Center Upgrade | 7.2.4-169 | Wed May 10 12:48:58 UTC 2023 | Yes    |  |

安装升级包以进行就绪性检查

选择要检查的设备并单击Check Readiness。

Product Updates

Currently running software version: 7.1.0

Selected Update

Type Cisco Secure FW Mgmt Center Upgrade  
Version 7.2.4-169  
Date Wed May 10 12:48:58 UTC 2023  
Reboot Yes

By Group

| <input checked="" type="checkbox"/> Ungrouped (1 total)                                                           | Compatibility Check | Readiness Check Results                  | Readiness Check Completed | Estimated Upgrade Time |  |
|-------------------------------------------------------------------------------------------------------------------|---------------------|------------------------------------------|---------------------------|------------------------|--|
| <input checked="" type="checkbox"/> firepower<br>10.4.11.85 - Cisco Firepower Management Center for VMware v7.1.0 |                     | Compatibility check passed. Proceed with |                           | 35 min                 |  |

Back

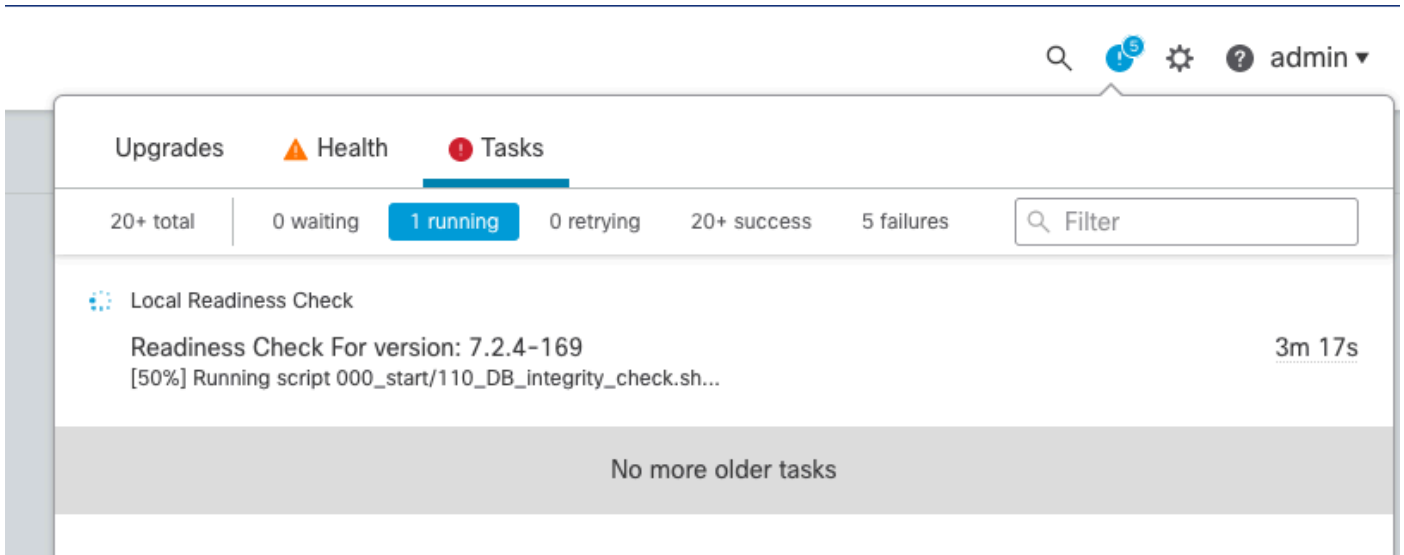
Check Readiness

Install

选择检查就绪性

可在消息中心检查进度。

消息>任务>运行



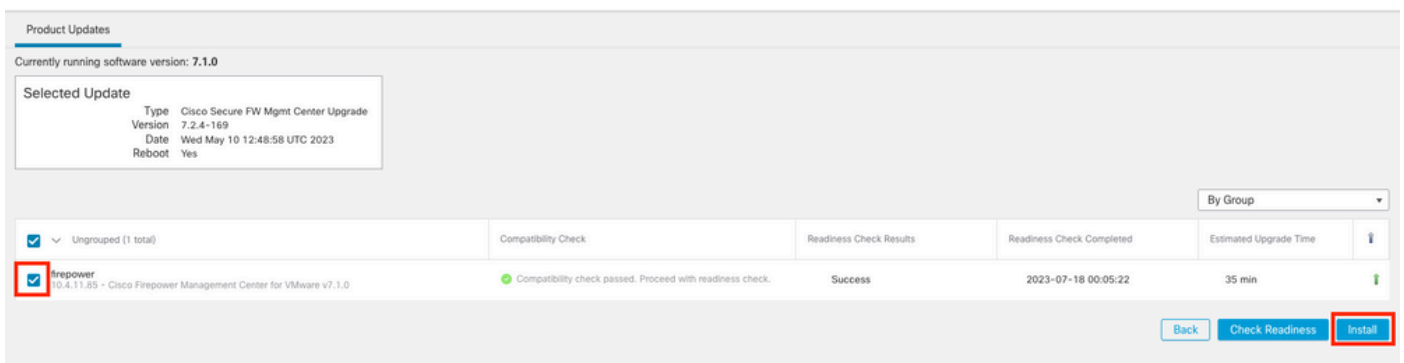
就绪性检查正在进行

完成后，您可以在就绪性检查结果中查看状态。

如果成功，则您可以继续安装软件包。

## 第四步：安装升级包

选择要升级的设备。单击 Install。



安装升级包

对于裂纹，请单击OK。

🌐 10.88.243.115:43085

After both FMCs are updated, FMC high availability will be in split brain. Click 'Make Me Active' after choosing the right Active FMC to resolve split brain.

OK

有关大脑分裂的警告

可使用Messages > Tasks中检查进度。

The screenshot shows the 'Tasks' tab in the Cisco FMC interface. At the top, there are navigation icons for search, notifications, settings, and help, along with the user name 'admin'. Below the navigation, there are tabs for 'Upgrades', 'Health', and 'Tasks', with 'Tasks' being the active tab. A summary bar shows '20+ total' tasks, with sub-statuses: '0 waiting', '1 running', '0 retrying', '20+ success', and '1 failure'. A search filter is available. The task list includes:

- Local Install**
  - Installing Cisco Secure FW Mgmt Center Upgrade version: 7.2.4-169 (1m 7s)
  - Installing Cisco Secure FW Mgmt Center Upgrade version: 7.2.4-169
- Local Readiness Check**
  - Readiness Check For version: 7.2.4-169 (4m 18s)
  - Success. OK to upgrade to 7.2.4-169 version.

监视器安装



---

注意：完成安装大约需要30分钟。

---

如果您可以访问CLI，则可以在升级文件夹/var/log/sf中检查进度；转到expert模式并输入root access。

```
> expert
admin@firepower:~$ sudo su
Password:
root@firepower:/Volume/home/admin# cd /var/log/sf/

root@firepower:/var/log/sf# ls
Cisco_Secure_FW_Mgmt_Center_Upgrade-7.2.4

root@firepower:/var/log/sf/Cisco_Secure_FW_Mgmt_Center_Upgrade-7.2.4# ls
000_start AQ_UUID DBCheck.log exception.log flags.conf main_upgrade_script.log status.log status

root@firepower:/var/log/sf/Cisco_Secure_FW_Mgmt_Center_Upgrade-7.2.4# tail -f status.log
```

升级完成后，FMC重新启动。

```
ui:[100%] [1 mins to go for reboot]Running script 999_finish/999_zzz_complete_upgrade_message.sh...
```

```
ui:[100%] [1 mins to go for reboot] Upgrade complete
```

```
ui:[100%] [1 mins to go for reboot] The system will now reboot.
```

```
ui:System will now reboot.
```

```
Broadcast message from root@firepower (Tue Jul 18 05:08:57 2023):
```

```
System will reboot in 5 seconds due to system upgrade.
```

```
Broadcast message from root@firepower (Tue Jul 18 05:09:02 2023):
```

```
System will reboot now due to system upgrade.
```

```
ui:[100%] [1 mins to go for reboot] Installation completed successfully.
```

```
ui:Upgrade has completed.
```

```
state:finished
```

```
Broadcast message from root@firepower (Tue Jul 18 05:09:25 2023):
```

```
The system is going down for reboot NOW!
```

重新启动后，物理FMC必须在FMC中显示正确的型号。

**GUI > Help > About**



# Firewall Management Center

Version 7.2.4 (build 169)

|                            |                                                                           |
|----------------------------|---------------------------------------------------------------------------|
| Model                      | Secure Firewall Management Center for VMware                              |
| Serial Number              | None                                                                      |
| Snort Version              | 2.9.20 (Build 4004)                                                       |
| Snort3 Version             | 3.1.21.400 (Build 24)                                                     |
| Rule Pack Version          | 2869                                                                      |
| Module Pack Version        | 3245                                                                      |
| LSP Version                | lsp-rel-20230717-1542                                                     |
| VDB Version                | build 353 (2022-03-07 22:13:19)                                           |
| Rule Update Version        | 2023-07-17-001-vrt                                                        |
| Geolocation Update Version | Country Code: 2023-07-17-100, IP: 2022-12-19-101                          |
| OS                         | Cisco Firepower Extensible Operating System (FX-OS)<br>2.12.0 (build 499) |
| Hostname                   | firepower                                                                 |

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FMC中的模型和版本信息

集成 > 高可用性

Make Me Active Break HA Resume Synchronization

This high availability pair is in split brain. Make one Management Center active by clicking 'Make Me Active'.

| Summary         |                                                                                                                                                                                                                                                                                                    | System Status                                |                              |  |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|------------------------------|--|
| Status          | <p>▲ Split Brain - Management Center is active on both peers. ( Both Management Centers are configured to run in standalone mode , Database is not configured for high availability , No synchronization task running between high availability management centers , Synchronization paused. )</p> | Local                                        | Remote                       |  |
| Synchronization | <p>▲ Paused by user</p>                                                                                                                                                                                                                                                                            | <b>Split Brain - Secondary</b>               | <b>Split Brain - Primary</b> |  |
| Active System   | <p>10.4.11.85<br/>( HA synchronization time : Software versions do not match (7.2.4 vs 7.1.0) VDB versions do not match (353 vs 346) )</p>                                                                                                                                                         | (10.4.11.85)                                 | (10.4.11.84)                 |  |
| Standby System  | <p>10.4.11.84<br/>( HA synchronization time : Software versions do not match (7.1.0 vs 7.2.4) VDB versions do not match (346 vs 353) )</p>                                                                                                                                                         | 7.2.4                                        | 7.1.0                        |  |
|                 |                                                                                                                                                                                                                                                                                                    | 7.2.4-169                                    | 7.1.0-90                     |  |
|                 |                                                                                                                                                                                                                                                                                                    | Secure Firewall Management Center for VMware |                              |  |

仅升级备用FMC时的高可用性摘要

在CLI上，接受EULA后可以检查版本。

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Cisco Firepower Extensible Operating System (FX-OS) v2.12.0 (build 499)  
Cisco Secure Firewall Management Center for VMware v7.2.4 (build 169)

```
>
> show version
-----[ firepower ]-----
Model           : Secure Firewall Management Center for VMware (66) Version 7.2.4 (Build 169)
UUID            : 1c71ae24-1e60-11ed-8459-9758e19f1a24
Rules update version : 2023-01-09-001-vrt
LSP version     : lsp-rel-20220511-1540
VDB version     : 353
-----
```

第五步：升级活动对等体

在主用设备上重复步骤2到步骤4：

- 上传升级包。

- 

就绪性检查。

安装升级包。

## 第六步：激活所需的FMC

在两个FMC上完成升级后，登录到想要使主用设备成为主用设备的FMC，并选择使我成为主用设备选项。

### 集成>高可用性>激活我

Firewall Management Center  
Integration / Other Integrations / High Availability

Overview Analysis Policies Devices Objects Integration Deploy admin

Cloud Services Realms Identity Sources High Availability eStreamer Host Input Client Smart Software Manager On-Prem Peer Manager

**Make Me Active** Break HA Resume Synchronization

This high availability pair is in split brain. Make one Management Center active by clicking 'Make Me Active'. X

| Summary         |                                                                                                                                                                                                              |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Status          | ▲ Split Brain - Management Center is active on both peers. ( Both Management Centers are configured to run in standalone mode , Database is not configured for high availability , Synchronization paused. ) |
| Synchronization | ▲ Paused by user                                                                                                                                                                                             |
| Active System   | 10.4.11.84 ( HA synchronization time : Tue Jul 18 16:57:35 2023 )                                                                                                                                            |
| Standby System  | 10.4.11.85 ( HA synchronization time : Tue Jul 18 16:57:07 2023 )                                                                                                                                            |

| System Status    |                                              |                                                |
|------------------|----------------------------------------------|------------------------------------------------|
|                  | Local                                        | Remote                                         |
|                  | <b>Split Brain - Primary</b><br>(10.4.11.84) | <b>Split Brain - Secondary</b><br>(10.4.11.85) |
| Operating System | 7.2.4                                        | 7.2.4                                          |
| Software Version | 7.2.4-169                                    | 7.2.4-169                                      |
| Model            | Secure Firewall Management Center for VMware | Secure Firewall Management Center for VMware   |

## 激活所需的FMC

有关进程和覆盖备用对等体中完成的任何配置警告，请选择YES继续。

## Warning

This operation may affect critical processes running in the background. The local peer will be active and the other peer will become a standby. The active peer will overwrite configuration and policies present on the standby peer. Do you want to continue?

No

Yes

有关备用对等体上的活动覆盖配置的警告

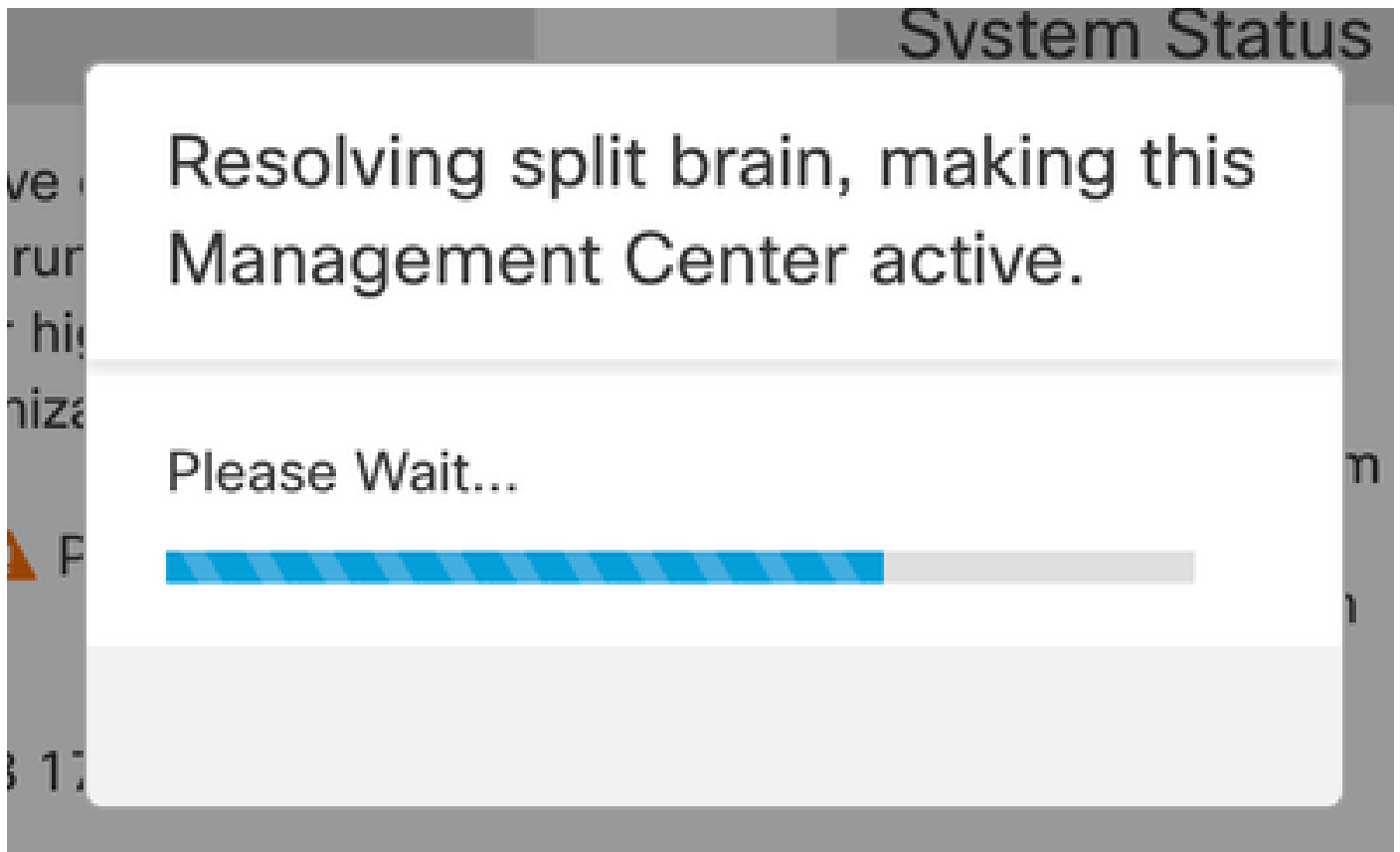
## Make Me Active ?

Do you want to make this Management Center active and peer standby?

Cancel

OK

选择确定



解决裂脑

等待同步重新启动，然后另一个FMC会打开备用模式。

Firewall Management Center  
Integration / Other Integrations / High Availability

Overview Analysis Policies Devices Objects Integration Deploy 🔍 ⚙️ 👤 admin | Cisco SECURE

Cloud Services Realms Identity Sources **High Availability** eStreamer Host Input Client Smart Software Manager On-Prem Peer Manager

[Make Me Active](#) [Break HA](#) [Pause Synchronization](#)

High availability operations are in progress. The status messages and alerts on this page are temporary. Please check after high availability operations are complete. These operations include file copy which may take time to complete. ✕

| Summary         |                                                                       | System Status                                         |                                                          |
|-----------------|-----------------------------------------------------------------------|-------------------------------------------------------|----------------------------------------------------------|
| Status          | ▲ Temporarily degraded- high availability operations are in progress. | Local<br><b>Split Brain - Primary</b><br>(10.4.11.84) | Remote<br><b>Split Brain - Secondary</b><br>(10.4.11.85) |
| Synchronization | ▲ Failed                                                              | Operating System                                      | 7.2.4                                                    |
| Active System   | 10.4.11.84<br>( HA synchronization time : Tue Jul 18 17:27:28 2023 )  | Software Version                                      | 7.2.4-169                                                |
| Standby System  | 10.4.11.85<br>( HA synchronization time : Tue Jul 18 17:26:56 2023 )  | Model                                                 | Secure Firewall Management Center for VMware             |

FMC同步



注意：完成同步最多可能需要20分钟。

---

在FMC主用设备上部署挂起的更改，以完成升级过程。

验证

在两个FMC处于相同版本且同步完成之后，HA Summary选项卡必须如下所示：

集成>高可用性

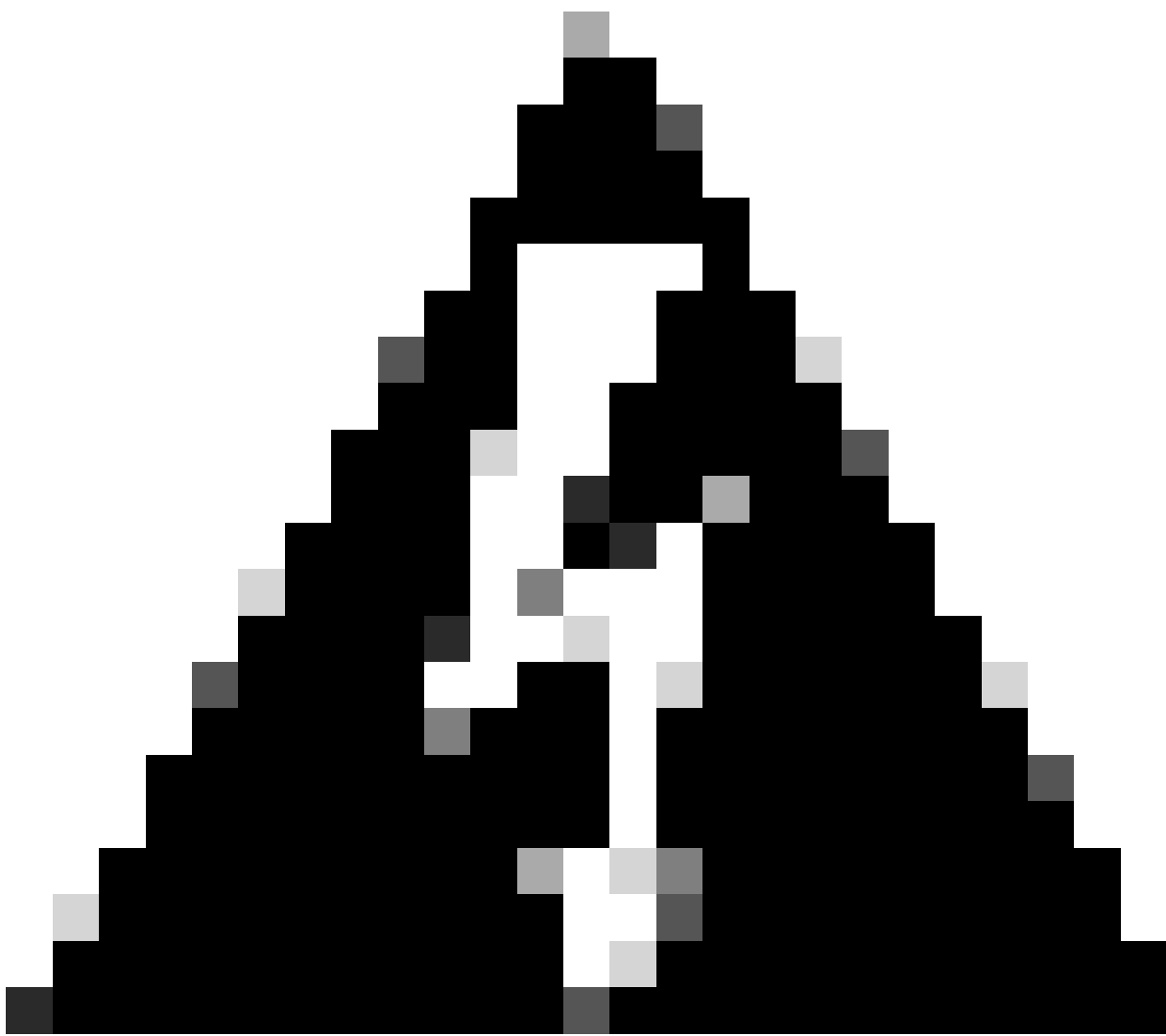


[Switch Peer Roles](#) [Break HA](#) [Pause Synchronization](#)

| Summary         |                                                                          |
|-----------------|--------------------------------------------------------------------------|
| Status          | <span style="color: green;">●</span> Synchronization task is in progress |
| Synchronization | <span style="color: green;">●</span> OK                                  |
| Active System   | 10.4.11.84<br>( HA synchronization time : Tue Jul 18 17:27:28 2023 )     |
| Standby System  | 10.4.11.85<br>( HA synchronization time : Tue Jul 18 17:28:00 2023 )     |

| System Status    |                                              |                                              |
|------------------|----------------------------------------------|----------------------------------------------|
|                  | Local                                        | Remote                                       |
|                  | <b>Active - Primary</b><br>(10.4.11.84)      | <b>Standby - Secondary</b><br>(10.4.11.85)   |
| Operating System | 7.2.4                                        | 7.2.4                                        |
| Software Version | 7.2.4-169                                    | 7.2.4-169                                    |
| Model            | Secure Firewall Management Center for VMware | Secure Firewall Management Center for VMware |

FMC中的升级验证



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**警告：**如果最终同步状态显示降级或其他结果不是“正常”，请与TAC联系。

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## 关于此翻译

思科采用人工翻译与机器翻译相结合的方式将此文档翻译成不同语言，希望全球的用户都能通过各自的语言得到支持性的内容。

请注意：即使是最好的机器翻译，其准确度也不及专业翻译人员的水平。

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