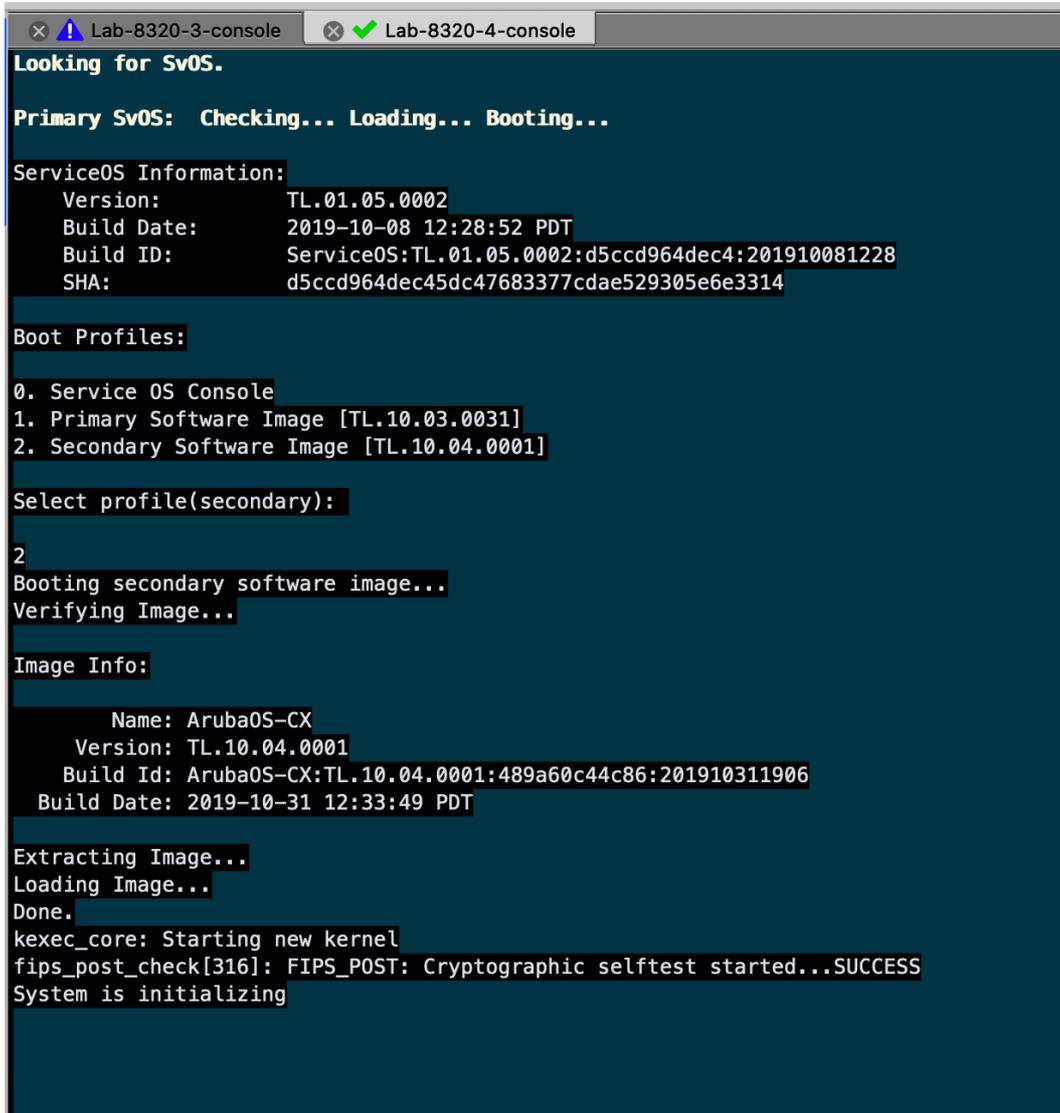


用 Console 登录到 secondary 机器上看，可见 Secondary 重启过程



```
Lab-8320-3-console Lab-8320-4-console
Looking for SvOS.

Primary SvOS: Checking... Loading... Booting...

ServiceOS Information:
  Version:      TL.01.05.0002
  Build Date:   2019-10-08 12:28:52 PDT
  Build ID:     ServiceOS:TL.01.05.0002:d5ccd964dec4:201910081228
                d5ccd964dec45dc47683377cdae529305e6e3314

Boot Profiles:

0. Service OS Console
1. Primary Software Image [TL.10.03.0031]
2. Secondary Software Image [TL.10.04.0001]

Select profile(secondary):

2
Booting secondary software image...
Verifying Image...

Image Info:
  Name: ArubaOS-CX
  Version: TL.10.04.0001
  Build Id: ArubaOS-CX:TL.10.04.0001:489a60c44c86:201910311906
  Build Date: 2019-10-31 12:33:49 PDT

Extracting Image...
Loading Image...
Done.
kexec_core: Starting new kernel
fips_post_check[316]: FIPS_POST: Cryptographic selftest started...SUCCESS
System is initializing
```

4、当 Secondary 重启完成后，从 primary 机器上看，ISL 链路显示为 UP，即 secondary 已经升级完成并参与工作。

```

Session Manager
x Lab-8320-3-console x Lab-8320-4-console
Looking for Sv0S.
Primary Sv0S: Checking... Loading... Booting...
ServiceOS Information:
  Version: TL.01.05.0002
  Build Date: 2019-10-08 12:28:52 PDT
  Build ID: ServiceOS:TL.01.05.0002:d5ccd964dec4:201910081228
  SHA: d5ccd964dec45dc47683377cdae529305e6e3314
Boot Profiles:
0. Service OS Console
1. Primary Software Image [TL.10.03.0031]
2. Secondary Software Image [TL.10.04.0001]
Select profile(secondary):
2
Booting secondary software image...
Verifying Image...
Image Info:
  Name: Aruba0S-CX
  Version: TL.10.04.0001
  Build Id: Aruba0S-CX:TL.10.04.0001:489a60c44c86:201910311906
  Build Date: 2019-10-31 12:33:49 PDT
Extracting Image...
Loading Image...
Done.
kexec_core: Starting new kernel
fips_post_check[316]: FIPS_POST: Cryptographic selftest started...SUCCESS
System is initializing

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* Software feature updates
* New product announcements
* Special events
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8320-4 login:

```

```

8320-3# vsx update-software ftp://10.1.50.101/Aruba0S-CX_8320_10_04_0001.swi
Invalid input: ftp://10.1.50.101/Aruba0S-CX_8320_10_04_0001.swi
8320-3# vsx update-software ftp://10.1.50.101
% There is no matched command.
8320-3# vsx update-software
8320-3# vsx update-software tftp://10.1.50.101:69/Aruba0S-CX_8320_10_04_0001.swi
Do you want to save the current configuration (y/n)? y
The running configuration was saved to the startup configuration.

This command will download new software to the secondary image of both VSX primary and
secondary systems, then reboot them in sequence.The VSX secondary will reboot first,
followed by primary.
Continue (y/n)? y

VSX Primary Software Update Status      : Waiting for VSX sync to complete
VSX Secondary Software Update Status    : Image updated successfully
VSX ISL Status                          : Up
Progress [#####.....]

```

5、这时 VSX 会角色切换，Secondary 会自动切换成 Primary

```
8320-4# show vsx status
VSX Operational State
-----
ISL channel           : In-Sync
ISL mgmt channel      : operational
Config Sync Status    : sw_image_version_mismatch_error
NAE                   : sw_image_version_mismatch_error
HTTPS Server          : sw_image_version_mismatch_error

Attribute             Local                Peer
-----
ISL link              lag128              lag128
ISL version           2                   2
System MAC            d0:67:26:e2:24:32   d0:67:26:e2:36:26
Platform              8320                8320
Software Version      TL.10.04.0001       TL.10.03.0031
Device Role           secondary            primary

8320-4#
```

从原 primary 上看，升级进程继续执行下去，开始升级原 primary，并且重启原来的 primary

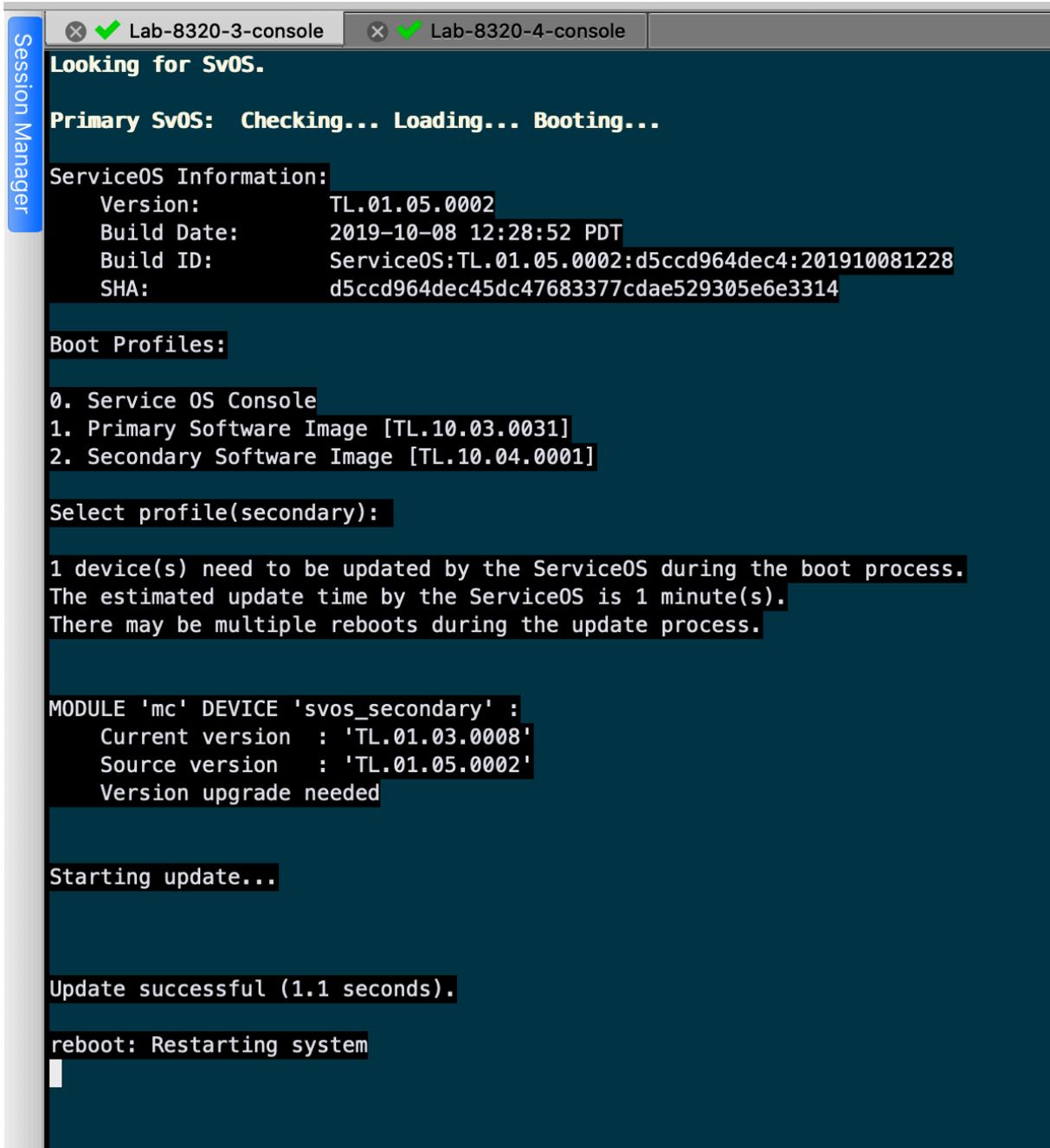
```
8320-3# vsx update-software ftp://10.1.50.101/ArubaOS-CX_8320_10_04_0001.swi
Invalid input: ftp://10.1.50.101/ArubaOS-CX_8320_10_04_0001.swi
8320-3# vsx update-software ftp://10.1.50.101
% There is no matched command.
8320-3# vsx update-software
8320-3# vsx update-software tftp://10.1.50.101:69/ArubaOS-CX_8320_10_04_0001.swi
Do you want to save the current configuration (y/n)? y
The running configuration was saved to the startup configuration.

This command will download new software to the secondary image of both VSX primary and
secondary systems, then reboot them in sequence.The VSX secondary will reboot first,
followed by primary.
Continue (y/n)? y

VSX Primary Software Update Status      : Reboot started
VSX Secondary Software Update Status     : Image updated successfully
VSX ISL Status                           : Up
Progress [#####.]

Secondary VSX system updated completely. Rebooting primary.
8320-3#
```

6、原 primary 重启过程中



The screenshot shows a terminal window with two tabs: 'Lab-8320-3-console' and 'Lab-8320-4-console'. The terminal output is as follows:

```
Looking for SvOS.

Primary SvOS:  Checking...  Loading...  Booting...

ServiceOS Information:
Version:          TL.01.05.0002
Build Date:       2019-10-08 12:28:52 PDT
Build ID:         ServiceOS:TL.01.05.0002:d5ccd964dec4:201910081228
SHA:              d5ccd964dec45dc47683377cdae529305e6e3314

Boot Profiles:

0. Service OS Console
1. Primary Software Image [TL.10.03.0031]
2. Secondary Software Image [TL.10.04.0001]

Select profile(secondary):

1 device(s) need to be updated by the ServiceOS during the boot process.
The estimated update time by the ServiceOS is 1 minute(s).
There may be multiple reboots during the update process.

MODULE 'mc' DEVICE 'svos_secondary' :
  Current version  : 'TL.01.03.0008'
  Source version   : 'TL.01.05.0002'
  Version upgrade needed

Starting update...

Update successful (1.1 seconds).

reboot: Restarting system
█
```

7、原 primary 重启完成后，会由 secondary 重新切回 primary，VSX 回到升级前的状态。升级完成。

```
8320-3# show uptime
System has been up 3 minutes
8320-3# show vsx status
VSX Operational State
-----
ISL channel           : In-Sync
ISL mgmt channel     : operational
Config Sync Status   : in-sync
NAE                   : peer_reachable
HTTPS Server         : peer_reachable

Attribute             Local                Peer
-----
ISL link              lag128              lag128
ISL version           2                   2
System MAC            d0:67:26:e2:36:26   d0:67:26:e2:24:32
Platform              8320                8320
Software Version      TL.10.04.0001       TL.10.04.0001
Device Role           primary              secondary

8320-3#
```

8、升级完成后，执行命令 # show image 检查一下，你会发现每台机器的 primary image 和 secondary image 版本是不同的，这样如果当前的 default image 被意外破坏后，则重启后的版本就改变了，所以要把两个 image 手工同步一下。

```
8320-3# show images

-----
ArubaOS-CX Primary Image
-----
Version : TL.10.03.0031
Size    : 361 MB
Date    : 2019-08-29 13:06:34 PDT
SHA-256 : f91f8eaa1f3a0a2fe5bbd58042a7cb601b83bda431091787ed3042959de2843f

-----
ArubaOS-CX Secondary Image
-----
Version : TL.10.04.0001
Size    : 371 MB
Date    : 2019-10-31 12:33:49 PDT
SHA-256 : cb48266a3e33089bae779c4a834b7e50e0e513a2831531ee17fd574555d1a4d2

Default Image : secondary

-----
Management Module 1/1 (Active)
-----
Active Image       : secondary
Service OS Version : TL.01.05.0002
BIOS Version       : TL-01-0013
```

9、用 Copy 命令把原 primary image 覆盖掉

```
8320-3# copy secondary primary
The primary image will be deleted.

Continue (y/n)? y

Verifying and writing system firmware...
8320-3# show images
-----
ArubaOS-CX Primary Image
-----
Version : TL.10.04.0001
Size    : 371 MB
Date    : 2019-10-31 12:33:49 PDT
SHA-256 : cb48266a3e33089bae779c4a834b7e50e0e513a2831531ee17fd574555d1a4d2
-----

ArubaOS-CX Secondary Image
-----
Version : TL.10.04.0001
Size    : 371 MB
Date    : 2019-10-31 12:33:49 PDT
SHA-256 : cb48266a3e33089bae779c4a834b7e50e0e513a2831531ee17fd574555d1a4d2

Default Image : secondary

-----
Management Module 1/1 (Active)
-----
Active Image      : secondary
Service OS Version : TL.01.05.0002
BIOS Version      : TL-01-0013
```

10、总结，因为升级过程中，两机器一直通过 ISL 进行探测对方的运行状态，在第二台开始升级是在确认第一台升级完成并正常工作后才进行，故对整个网络来讲，不存在断网的问题。