

Release Notes for Cisco Wireless Controller Field Upgrade Software for Release 2.0.0.0

First Published: February 10, 2016

Introduction

Cisco Wireless Controller Field Upgrade Software (FUS) is a special AES package that performs various system-related component upgrades. We recommend that you install the FUS image to upgrade components such as the bootloader, field recovery image, FPGA/MCU, and other firmware to their latest respective versions.

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Revision History

Table 1 Revision History

Modification Date	Modification Details
October 10, 2018	Added Upgrading FUS Image in a High Availability Environment section.
August 22, 2017	• Table 2Cisco Wireless Platforms and Upgraded Components, page 2 – Updated: Cisco 2504 WLC upgrade requirement statement
May 10, 2016	• Cisco Wireless Controller Platforms and Upgraded Components, page 2 – Updated: Cisco Flex 7510 WLC emergency image version – Updated: Cisco 8510 WLC emergency image version
April 01, 2016	• Cisco Wireless Controller Platforms and Upgraded Components, page 2 – Updated: Cisco 2504 WLC upgraded components section

Cisco Wireless Controller Platforms and Upgraded Components

Table 2 Cisco Wireless Platforms and Upgraded Components

Cisco Wireless Controller Platform	Upgraded Components
Cisco 2504 Wireless Controllers	An upgrade to FUS 2.0 is mandatory if you have PIC 1.0.19 due to CSCuu46671; if you do not have PIC 1.0.19, it is mandatory to upgrade to FUS 1.9 or 2.0 before upgrading to AireOS release 8.3.121.0 or above. • Bootloader Version is upgraded to 1.0.20 **Note** Verify the bootloader version by entering the command **show sysinfo**. The output displays the following line only if FUS 2.0 is installed. Bootloader Version..... 1.0.20 • Cisco WLCs with PIC version older than 1.0.18 will not show PIC update when upgraded to FUS 2.0

Table 2 Cisco Wireless Platforms and Upgraded Components

Cisco Wireless Controller Platform	Upgraded Components
Cisco Flex 7510 Wireless Controllers	• Emergency image is upgraded to 8.1.133.7 • Updates RAID firmware to 20.13.1-0200
Cisco 8510 Wireless Controllers	• Emergency image is upgraded to 8.1.133.7 • Updates RAID firmware to 20.13.1-0200

Note This release does not have any updates to any of the following Cisco controllers: Cisco 5508, 5520, and 8540 Wireless Controllers and Cisco WiSM2.

Guidelines and Limitations

Caution Ensure that there are no power outages during the upgrade. Power outages during the upgrade may lead to the controller not being usable.

- This release of the Field Upgrade Software is applicable to Cisco WLCs that are installed with the controller software release 6.0 and later.
- You must install the FUS image only once.
- Console access to the WLC during the upgrade process is not required. However it is recommended that you have console access so that you can monitor the progress of the process.
- The FUS upgrade process reboots the Cisco WLC several times, and reboot the default runtime image. The whole process takes approximately 30 minutes.
- After you install the FUS image for a Cisco Flex 7500 Controller platform, the RAID firmware is also upgraded. During the installation process, the console messages displayed do indicate upgrade of the RAID firmware. However, it is not possible to verify the RAID firmware upgrade either by entering a command or viewing the bootlog.

Supported Hardware

The FUS image is applicable only to the following controller platforms in this release:

- Cisco 2504 Wireless Controller
- Cisco Flex 7510 Wireless Controller
- Cisco 8510 Wireless Controller

Downloading Field Upgrade Software

Step 1 Go to the Cisco Software Center at this URL: https://software.cisco.com/download/navigator.html

Step 2 Choose **Products > Wireless > Wireless LAN Controller**.

Step 3 Choose either of the following depending on the controller platform you use:

- **Integrated Controllers and Controller Modules**
- **Standalone Controllers**

Step 4 Choose the controller model number or name. The **Download Software** page is displayed.

Step 5 Choose **Wireless Controller Software**.

Step 6 Click a controller software release. The software releases are labeled as follows to help you determine which release to download:

- **Early Deployment (ED)**—These software releases provide new features and new hardware platform support as well as bug fixes.
- **Maintenance Deployment (MD)**—These software releases provide bug fixes and ongoing software maintenance.
- **Deferred (DF)**—These software releases have been deferred. We recommend that you migrate to an upgraded release.

Click a software release number. Click the filename (for example: AIR-CT2500-K9-2-0-0-0-FUS.aes). The following AES files are available for various controller platforms:

- AIR-CT2500-K9-2-0-0-0-FUS.aes
- AIR-CT7500-K9-2-0-0-0-FUS.aes
- AIR-CT8500-K9-2-0-0-0-FUS.aes

Step 7 Click **Download**.

Step 8 Read Cisco End-User Software License Agreement and then click **Agree**.

Step 9 Save the file to your hard drive.

Step 10 Copy the AES file (for example AIR-CT2500-K9-2-0-0-0-FUS.aes) to the default directory on your TFTP or FTP server.

Installing Field Upgrade Software (CLI)

Step 1 Enter the following commands on the Cisco WLC CLI:

a. **transfer download datatype code**
b. **transfer download serverip** *serverip*
c. **transfer download mode** {**tftp** | **ftp**}
d. **transfer download username** *user*
e. **transfer download password** *password*
f. **transfer download filename** *filename.aes*
g. **transfer download path /**
h. **transfer download start**

Step 2 Enter the following command to reboot the Cisco WLC:

reset system

Information similar to the following is displayed; this is a sample output from a Cisco Flex 7500 Series WLC:

```
The system has unsaved changes.
Would you like to save them now? (y/N) y


Configuration Saved!
System will now restart!
Updating license storage ...  Done.
SoftDog: Unexpected close, not stopping watchdog!
umount: /mnt/wlc: device is busy
umount: /mnt/wlc: device is busy
please save console output below and send to DE
                     USER        PID ACCESS COMMAND
/mnt/wlc:            root       3651 f.c.. licensed

INIT:
INIT: Sending processes the TERM signal
Stopping portmap daemon....
Sending all processes the TERM signal... done.
Sending all processes the KILL signal... done.
Stopping hotplug subsystem:
   pci
   pci      [success]
   usb
   usb      [success]
   isapnp
   isapnp   [success]
   ide
   ide      [success]
   input
   input    [success]
   scsi
   scsi     [success]
done.
Starting reboot command: reboot
Rebooting...
Restarting system.
[0m[37m[40m[2J[01;01H[=3h[2J[01;01H[2J[01;01H[=3h[2J[01;01H[2J[01;01H[=3h[2J[01;01H[2J[01;
01H[23;01HConnecting Boot Devices and Adapters.
[0m[30m[40m[1m[37m[40m[02;01HPlatform Initalization Complete[0m[37m[40m[04;01HSystem x3550
M3

UEFI Build Ver: 1.11    IMM Build Ver: 1.25   Diagnostics Build Ver: 9.27[08;01H2 CPU
Packages Available at 5.86GT/s Link Speed[09;01H12288MB Memory Available at 1067MHz in
Independent Channel Mode[0m[30m[40m[1m[37m[40m[02;01HPlatform Initalization
Complete[0m[37m[40m[04;01HSystem x3550 M3


UEFI Build Ver: 1.11    IMM Build Ver: 1.25   Diagnostics Build Ver: 9.27[08;01H2 CPU
Packages Available at 5.86GT/s Link Speed[09;01H12288MB Memory Available at 1067MHz in
Independent Channel Mode[23;01HConnecting Boot Devices and Adapters..
[0m[30m[40m[1m[37m[40m[02;01HPlatform Initalization Complete[0m[37m[40m[04;01HSystem x3550
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[0m[30m[40m[1m[37m[40m[02;01HPlatform Initalization Complete[0m[37m[40m[04;01HSystem x3550
M3
```

```
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[0m[30m[40m[1m[37m[40m[02;01HPlatform Initalization Complete[0m[37m[40m[04;01HSystem x3550
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[0m[30m[40m[1m[37m[40m[02;01HPlatform Initalization Complete[0m[37m[40m[04;01HSystem x3550
M3


UEFI Build Ver: 1.11    IMM Build Ver: 1.25   Diagnostics Build Ver: 9.27[08;01H2 CPU
Packages Available at 5.86GT/s Link Speed[09;01H12288MB Memory Available at 1067MHz in
Independent Channel Mode[23;01HConnecting Boot Devices and Adapters.......
[0m[30m[40m[1m[37m[40m[02;01HPlatform Initalization Complete[0m[37m[40m[04;01HSystem x3550
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[0m[30m[40m[1m[37m[40m[02;01HPlatform Initalization Complete[0m[37m[40m[04;01HSystem x3550
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[0m[30m[40m[1m[37m[40m[02;01HPlatform Initalization Complete[0m[37m[40m[04;01HSystem x3550
M3


UEFI Build Ver: 1.11    IMM Build Ver: 1.25   Diagnostics Build Ver: 9.27[08;01H2 CPU
Packages Available at 5.86GT/s Link Speed[09;01H12288MB Memory Available at 1067MHz in
Independent Channel Mode[23;01HConnecting Boot Devices and Adapters...........
[23;01H [2J[01;01H[2J[01;01HStart boot option[19;01H<F1> Setup[19;21H<F2>
Diagnostics[19;41H<F12> Select Boot Device[1m[37m[40m[2J[01;01H[2J[01;01HBoot Failed.
CD/DVD Rom

Boot Failed. Floppy Disk

[2J[01;01H[=3h[2J[01;01H[2J[01;01H[0m[37m[40m[2J[01;01H[00m[40m[37m[2J[01;01HPlease wait,
initializing legacy usb devices...Done
[02;01H[02;01H
[02;01H
[03;01H
[03;01H
```

```
[04;01HBroadcom[04;10HNetXtreme[04;20HII[04;23HEthernet[04;32HBoot[04;37HAgent[04;43Hv5.2.
7
[04;01H
[05;01HCopyright[05;11H(C)[05;15H2000-2009[05;25HBroadcom[05;34HCorporation
[05;01H
[06;01HAll[06;05Hrights[06;12Hreserved.
[06;01H
[07;01H
[07;01H
[08;01H
[08;01H
[09;01HBroadcom[09;10HNetXtreme[09;20HII[09;23HEthernet[09;32HBoot[09;37HAgent[09;43Hv5.2.
7
[09;01H
[10;01HCopyright[10;11H(C)[10;15H2000-2009[10;25HBroadcom[10;34HCorporation
[10;01H
[11;01HAll[11;05Hrights[11;12Hreserved.
[11;01H
[12;01H
[12;01H
[13;01HLSI[13;05HMegaRAID[13;14HSAS-MFI[13;22HBIOS
[13;01H
[14;01HVersion[14;09H4.24.00[14;17H(Build[14;24HMarch[14;30H03,[14;34H2011)
[14;01H
[15;01HCopyright(c)[15;14H2011[15;19HLSI[15;23HCorporation
[15;01H
[16;01H
[16;01H
[17;01HHA[17;04H-0[17;07H(Bus[17;12H1[17;14HDev[17;18H0)[17;21HServeRAID[17;31HM1015[17;37
HSAS/SATA[17;46HController
[17;01H
[18;01H
[18;80H
[18;01H
[18;01H
[19;01H0[19;03HJBOD(s)[19;11Hfound[19;17Hon[19;20Hthe[19;24Hhost[19;29Hadapter
[19;01H
[20;01H0[20;03HJBOD(s)[20;11Hhandled[20;19Hby[20;22HBIOS
[20;01H
[21;01H
[21;01H
[22;01H1[22;03HVirtual[22;11HDrive(s)[22;20Hfound[22;26Hon[22;29Hthe[22;33Hhost[22;38Hadap
ter.
[22;01H
[23;01H
[23;01H
[24;01H
[24;80H
[24;01H1[24;03HVirtual[24;11HDrive(s)[24;20Hhandled[24;28Hby[24;31HBIOS
[24;01H
[25;01H
[25;80H
[25;01HPress[25;07H<Ctrl><H>[25;17Hfor[25;21HWebBIOS[25;29Hor[25;32Hpress[25;38H<Ctrl><Y>
[25;48Hfor[25;52HPreboot[25;60HCLI[25;64H
[25;01H [25;02H [25;03H [25;04H [25;05H [25;07H [25;08H [25;09H [25;10H [25;11H [25;12H
[25;13H [25;14H [25;15H [25;17H [25;18H [25;19H [25;21H [25;22H [25;23H [25;24H [25;25H
[25;26H [25;27H [25;29H [25;30H [25;32H [25;33H [25;34H [25;35H [25;36H [25;38H [25;39H
[25;40H [25;41H [25;42H [25;43H [25;44H [25;45H [25;46H [25;48H [25;49H [25;50H [25;52H
[25;53H [25;54H [25;55H [25;56H [25;57H [25;58H [25;60H [25;61H [25;62H [25;80H
[25;01H
[25;01H
[2J[01;01H
Cisco Bootloader (Version 7.6.101.2)
```

```
                    .o88b. d888888b .d8888.  .o88b.  .d88b.
                   d8P  Y8   `88'   88'  YP d8P  Y8 .8P  Y8.
                   8P         88    `8bo.   8P      88    88
                   8b         88      `Y8b. 8b      88    88
                   Y8b  d8   .88.   db   8D Y8b  d8 `8b  d8'
                    `Y88P' Y888888P `8888Y'  `Y88P'  `Y88P'


Booting Primary Image...

Press <ESC> now for additional boot options...
  Booting 'Primary image'

Detecting hardware . . . . 3

INIT: version 2.86 booting
Starting the hotplug events dispatcher: udevd.
Synthesizing the initial hotplug events...done.
Waiting for /dev to be fully populated...done.
Activating swap...done.
Remounting root filesystem...done.
Mounting local filesystems: mount none on /var/run type tmpfs (rw)
none on /tmp type tmpfs (rw)
Setting up networking ....
Starting hotplug subsystem:
   pci
   pci      [success]
   usb
   usb      [success]
   isapnp
   isapnp   [success]
   ide
   ide      [success]
   input
   input    [success]
   scsi
   scsi     [success]
done.
Starting portmap daemon....
Octeon Found...
Detecting Hardware ...
Booting Octeon...
Using user supplied board name: nic_xle_10g
All cores in reset, skipping soft reset.
Using bootloader image: /octeon/u-boot-octeon_nic_xle_10g_pciboot.bin
Initialized 2048 MBytes of DRAM

INIT: Entering runlevel: 3
Total DIMMs are: 3

Cryptographic library self-test....passed!
XML config selected
Validating XML configuration
Read HA Config before validation
octeon_device_init: found 1 DPs
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Cisco AireOS Version 7.6.101.2
Initializing OS Services: ok
Initializing Serial Services: ok
Initializing Network Services: ok
```

```
Initializing Licensing Services: ok

License daemon start initialization.....

License daemon running.....
Starting Statistics Service: ok
Starting ARP Services: ok
Starting Trap Manager: ok
Starting Network Interface Management Services: ok
Starting System Services: ok
Starting FIPS Features: ok : Not enabled
Starting Fastpath Hardware Acceleration: ok
ok
Starting Fastpath DP Heartbeat : ok
Fastpath CPU0.00: Starting Fastpath Application. SDK-1.8.1, build 294. Flags-[DUTY CYCLE]
: ok
Fastpath CPU0.00: Initializing last packet received queue. Num of cores(12)
Fastpath CPU0.00: Init MBUF size: 1856, Subsequent MBUF size: 2040
Fastpath CPU0.00: Core 0 Initialization: ok
Fastpath CPU0.00: Initializing Timer...
Fastpath CPU0.00: Initializing Timer...done.
Fastpath CPU0.00: Initializing Timer...
Fastpath CPU0.00: Initializing NBAR AGING Timer...done.
Fastpath CPU0.01: Core 1 Initialization: ok
Fastpath CPU0.02: Core 2 Initialization: ok
Fastpath CPU0.03: Core 3 Initialization: ok
Fastpath CPU0.00: Received instruction to get link status
Fastpath CPU0.04: Core 4 Initialization: ok
Fastpath CPU0.05: Core 5 Initialization: ok
Fastpath CPU0.06: Core 6 Initialization: ok
Fastpath CPU0.07: Core 7 Initialization: ok
Fastpath CPU0.08: Core 8 Initialization: ok
Fastpath CPU0.09: Core 9 Initialization: ok
Fastpath CPU0.10: Core 10 Initialization: ok
Fastpath CPU0.11: Core 11 Initialization: ok
Starting Switching Services: ok
Starting QoS Services: ok
Starting Policy Manager: ok
Starting Data Transport Link Layer: ok
Starting Access Control List Services: ok
Starting System Interfaces: ok
Starting Client Troubleshooting Service: ok
Starting Management Frame Protection: ok
Starting Certificate Database: ok
Starting VPN Services: ok
Starting DNS Services: ok
HBL initialization is successful
Starting Licensing Services: ok
Starting Redundancy: ok
Starting LWAPP: ok
Starting CAPWAP: ok
Starting LOCP: ok
Starting Security Services: ok
Starting Policy Manager: ok
Starting Authentication Engine: ok
Starting Mobility Management: ok
Starting Capwap Ping Component: ok
Starting AVC Services: ok
Starting Virtual AP Services: ok
Starting AireWave Director: ok
Starting Network Time Services: ok
Starting Cisco Discovery Protocol: ok
Starting Broadcast Services: ok
Starting Logging Services: ok
```

```
Starting DHCP Server: ok
Starting IDS Signature Manager: ok
Starting RFID Tag Tracking: ok
Starting RF Profiles: ok
Starting Environment Status Monitoring Service: ok
Starting RAID Volume Status Monitoring Service: ok
Starting Mesh Services:  ok
Starting TSM: ok
Starting CIDS Services: ok
Starting Ethernet-over-IP: ok
Starting DTLS server:  enabled in CAPWAP
Starting CleanAir: ok
Starting WIPS: ok
Starting SSHPM LSC PROV LIST: ok
Starting RRC Services: ok
Starting SXP Services: ok
Starting Alarm Services: ok
Starting FMC HS: ok
Starting IPv6 Services: ok
Starting Config Sync Manager : ok
Starting Hotspot Services: ok
Starting Portal Server Services: ok
Starting mDNS Services: ok
Starting Management Services:
Web Server:    CLI:    Secure Web: ok
```

Upgrading FUS Image

Step 1 Upload your controller configuration files to a server to back them up.

Step 2 Get the controller software image as defined in Downloading Field Upgrade Software, page 3, and follow these steps:

a. Choose **Wireless > Wireless Controller**. The following options are available: Integrated Controllers and Controller Modules and Standalone Controllers.

b. Depending on your controller platform, click one of the above options.

c. Click the controller model number or name. The Download Software page is displayed.

d. Click a controller software release. The software releases are labeled as follows to help you determine which release to download:

- **Early Deployment (ED)**—These software releases provide new features, new hardware platform support, and bug fixes.
- **Maintenance Deployment (MD)**—These software releases provide bug fixes and ongoing software maintenance.
- **Deferred (DF)**—These software releases have been deferred. We recommend that you migrate to an upgraded release.

e. Choose a software release number.

f. Click the filename (for example, AIR-CT2500-K9-2-0-0-0-FUS.aes).

g. Click **Download**.

h. Read Cisco's End User Software License Agreement and then click **Agree**.

i. Save the file to your hard drive.

j. Repeat steps a through k to download the remaining file.

Step 3 Copy the controller software image (filename.aes) to the default directory on your TFTP or FTP server.

Step 4 (Optional) Disable the 802.11 networks.

Note For busy networks, controllers on high utilization, or small controller platforms, we recommend that you disable the 802.11 networks as a precautionary measure.

Step 5 Disable any WLANs on the controller.

Step 6 Choose **Commands > Download File** to open the Download File to Controller page.

Step 7 From the **File Type** drop-down list, choose **Code**.

Step 8 From the **Transfer Mode** drop-down list, choose from the following options:

- TFTP
- FTP

Step 9 In the **IP Address** text box, enter the IP address of the server.

If you are using a TFTP server, the default values of 10 retries and 6 seconds for the **Maximum Retries** and **Timeout** text boxes should work correctly without any adjustment. However, you can change these values.

Step 10 If you are using a TFTP server, the default values of 10 retries for the Maximum Retries text field, and 6 seconds for the Timeout text field should work correctly without any adjustment. However, you can change these values if desired. To do so, enter the maximum number of times that the TFTP server attempts to download the software in the **Maximum Retries** text box and the amount of time (in seconds) that the TFTP server attempts to download the software in the **Timeout** text box.

Step 11 In the **File Path** text box, enter the directory path of the software.

Step 12 In the **File Name** text box, enter the name of the controller software file (for example, AIR-CT2500-K9-2-0-0-0-FUS.aes).

Step 13 If you are using an FTP server, follow these steps:

- In the **Server Login** Username text box, enter the username to log into the FTP server.
- In the **Server Login** Password text box, enter the password to log into the FTP server.
- In the **Server Port Number** text box, enter the port number on the FTP server through which the download occurs. The default value is 21.

Step 14 Click **Download** to download the software to the controller. A message appears indicating the status of the download.

Step 15 After the download is complete, click **Reboot**.

Step 16 If prompted to save your changes, click **Save and Reboot**.

Step 17 Click **OK** to confirm.

Step 18 After the controller reboots, repeat step 6 to step 17 to install the remaining file.

Step 19 Reenable the WLANs.

Step 20 For Cisco WiSM2, reenable the controller port channel on the Catalyst switch.

Step 21 If you have disabled the 802.11 networks in Step 4, reenable them.

Step 22 To verify the controller software version, choose **Monitor** on the controller GUI and see **Software Version** in the Controller Summary area.

Upgrading FUS Image in a High Availability Environment

The following procedure describes how to upgrade FUS image in both primary and secondary controllers in a High Availability environment without having a downtime.

Step 1 Install the FUS image in the primary controller, which results in FUS image getting installed in the secondary controller as well.

Step 2 After the FUS image installation is complete, instead of rebooting both the primary and secondary controllers at the same time, reboot only the primary controller such that the secondary controller becomes the active controller and the services remain unaffected.

Step 3 After the primary controller is rebooted and the controller is back to being the active controller, reboot the secondary controller to complete the FUS image upgrade.

Caveats

The following sections lists Open Caveats and Resolved Caveats for Cisco controllers and lightweight access points for version 2.0.0.0. For your convenience in locating caveats in Cisco's Bug Toolkit, the caveat titles listed in this section are drawn directly from the Bug Toolkit database. These caveat titles are not intended to be read as complete sentences because the title field length is limited. In the caveat titles, some truncation of wording or punctuation might be necessary to provide the most complete and concise description. The only modifications made to these titles are as follows:

- Commands are in **boldface** type.
- Product names and acronyms might be standardized.
- Spelling errors and typos might be corrected.

If you need information about a specific caveat that does not appear in these release notes, you can use the Cisco Bug Toolkit to find caveats of any severity.

Note If you request a defect that cannot be displayed, the defect number might not exist, the defect might not yet have a customer-visible description, or the defect might be marked Cisco Confidential.

Open Caveats

There are no open caveats in this release.

Resolved Caveats

Table 3 Resolved Caveats

ID Number	Description
CSCus97953	Cisco 8510 WLC unexpectedly reloads on `Uhhuh. NMI received for unknown reason 2d`
CSCuu46671	PIC image upgrade vis FUS

Service and Support

Troubleshooting

For the most up-to-date, detailed troubleshooting information, see the Cisco TAC website at

http://www.cisco.com/c/en/us/support/index.html

Click **Product Support > Wireless**. Then choose your product and **Troubleshooting** to find information on the problem you are experiencing.

Related Documentation

For additional information on the Cisco controllers and lightweight access points, see these documents:

- The quick start guide or installation guide for your particular controller or access point
- *Cisco Wireless Controller Configuration Guide*
- *Cisco Wireless Controller Command Reference*
- *Cisco Prime Network Control System Configuration Guide*
- *Cisco Prime Network Control System Command Reference*

You can access these documents from this link:

http://www.cisco.com/c/en/us/support/index.html

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see *What's New in Cisco Product Documentation* at:

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