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Release Notes

FortiWeb 7.4.1

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November 17, 2023
FortiWeb 7.4.1 Release Notes
1st Edition

TABLE OF CONTENTS

Introduction

This document provides information about new and enhanced features, installation instructions, resolved issues, and known issues for FortiWeb 7.4.1, build 0603.

FortiWeb is a web application firewall (WAF) that protects hosted web applications from attacks that target known and unknown exploits. Using multi-layered and correlated detection methods, FortiWeb defends applications from known vulnerabilities and zero-day threats. The Web Application Security Service from FortiGuard Labs uses information based on the latest application vulnerabilities, bots, suspicious URL and data patterns, and specialized heuristic detection engines to keep your applications safe.

FortiWeb also offers a machine-learning function that enables it to automatically detect malicious web traffic. In addition to detecting known attacks, the feature can detect potential unknown zero-day attacks to provide real-time protection for web servers.

FortiWeb allows you to configure these features:

- Vulnerability scanning and patching
- IP reputation, web application attack signatures, credential stuffing defense, anti-virus, and Fortinet Sandbox powered by FortiGuard.
- Real-time attack insights and reporting with advanced visual analytics tools
- Integration with FortiGate and FortiSandbox for ATP detection
- Behavioral attack detection
- Advanced false positive and negative detection avoidance

FortiWeb hardware and virtual machine platforms are available for medium and large enterprises, as well as for service providers.

For additional documentation, please visit the FortiWeb documentation:

http://docs.fortinet.com/fortiweb/

What's new

ML based API Protection - Schema and Threat Protection

A new protection layer called “Threat Protection” has been added to the ML based API Protection module. It learns parameter value patterns from the API requests body and builds mathematical models to screen out abnormal requests that are deemed malicious.

For more information, see Configuring ML Based API Protection policy.

GraphQL Protection

Protection for GraphQL is introduced in this release. It safeguards GraphQL APIs from malicious queries, signature attacks, and excessive resource consumption, ensuring their secure and efficient operation.

For more information, see Configuring GraphQL Protection.

Waiting Room

A new Waiting Room capability is introduced in this release under Application Delivery. It controls visitor traffic using a virtual holding space and queuing First-In/First-Out system.

For more information, see Waiting room.

XSW detection

FortiWeb can now detect XML Signature Wrapping (XSW), a technique that enables a malicious client to manipulate or forge a digitally signed document without invalidating the included signature.

For more information, see Creating XSW Detection rules.

DTD validation for XML requests

FortiWeb now supports the utilization of a Document Type Definition (DTD) file to establish restrictions for XML requests.

For more information, see Importing XML DTD files.

External IP Address Auto-Retrieval

In **IP Protection > IP List**, you now have the option to not only manually specify IP addresses to trust or block but also configure the system to automatically retrieve the IP list from an external HTTP/HTTPS server.

For more information, see IP Address Connector.

Signature Enhancements

We now offer support for utilizing hyperscan to identify personally identifiable information within the response body. To use this feature, simply enable `personally-identifiable-information-hyperscan-mode` in `config waf signature`.

Additionally, the signature details now include information about the main category, sub-category, and sensitivity level.

Biometric-based bot detection enhancements

The biometric-based bot detection has been refined to enhance the accuracy of trait collection and URL record logging in attack logs. Traits are now weighted in a more effective manner, improving the efficiency of bot screening while minimizing false positives.

For more information, see Configuring biometrics based detection.

reCAPTCHA v3 support

reCAPTCHA v3 has been integrated in FortiWeb to facilitate bot confirmation. It returns a score for each request without user friction, offering a more flexible configuration and user-friendly experience.

HTTP/2 RST Stream check in HTTP Protocol Constraints

Checking for HTTP/2 RST Stream occurrences and frequency within an HTTP/2 connection is now supported. To set this up, go to **Web Protection > Protocol > HTTP > HTTP Protocol Constraints** and find the **HTTP Request** items.

For more information, see HTTP/HTTPS protocol constraints.

Permission-policy in HTTP Header Security

The feature-policy has been updated to permission-policy in alignment with the industry standard. Upgrading is seamless with just one click, and syntax errors can be easily validated.

For more information, see HTTP Security Headers.

Multiple SAML servers in Site Publish

Previously, FortiWeb only supported a single SAML server in Site Publish. Now, it has been upgraded to accommodate multiple SAML servers.

Cached items search enhancement

In **Application Delivery > Caching**, we offer the capability to list all cached items associated with a specified URL. Furthermore, you can fine-tune your search by applying keywords to filter the results as needed.

For more information, see Caching.

IP Conflict prompt in event log

If the IP addresses configured on the FortiWeb (including the VIP or network interface IP addresses) conflict with the IP addresses of other devices in the same subnet, an IP conflict event will be recorded in the event log, for instance:

msg="Detect MAC address 08:35:71:fb:f4:cc claims to have our IP 13.0.0.1.

Log type setting for storing or sending logs

You can now choose your preferred log types in the **Log & Report > Log Config > Global Log Settings**. This allows you to select one or multiple of the three log types (attack log, event log, traffic log) for local storage or forwarding to external log servers.

For more information, see Logging.

Email attachments compression in Email Policy

In this release, we have reinstated the email attachments compression for the alert email policy. With the compression function enabled, event logs and alerts will be attached to the emails in ZIP format; otherwise, they will be attached in TXT format.

For more information, see `attach-compress` in log email-policy.

HTTP/2 window size limit raised

It is now possible to customize the window size, determining the amount of data in bytes that FortiWeb is willing to receive at any given time, for both the server and client sides of HTTP/2 connections. The valid range is 65,535-2,147,483,647 bytes.

For more information, see `http2-window-size` in server-policy-server-pool and server-policy-policy.

Product Integration and Support

Supported Hardware:

- FortiWeb 100D
- FortiWeb 400C
- FortiWeb 400D
- FortiWeb 400E
- FortiWeb 600D
- FortiWeb 600E
- FortiWeb 1000D
- FortiWeb 1000E
- FortiWeb 2000E
- FortiWeb 3000D/3000DFsx
- FortiWeb 3000E
- FortiWeb 3010E
- FortiWeb 4000D
- FortiWeb 4000E
- FortiWeb 100E
- FortiWeb 1000F
- FortiWeb 2000F
- FortiWeb 3000F
- FortiWeb 4000F

Supported hypervisor versions:

- VMware vSphere Hypervisor ESX/ESXi 4.0/4.1/5.0/5.1/5.5/6.0/6.5/6.7/7.0/8.0.2
- Citrix XenServer 6.2/6.5/7.1
- Open source Xen Project (Hypervisor) 4.9 and higher versions
- Microsoft Hyper-V (version 6.2 or higher, running on Windows 8 or higher, or Windows Server 2012/2016/2019/2022)
- KVM (Linux kernel 2.6, 3.0, or 3.1)
- OpenStack Wallaby
- Docker Engine CE 18.09.1 or higher versions, and the equivalent Docker Engine EE versions; Ubuntu18.04.1 LTS or higher versions
- Nutanix AHV

FortiWeb is tested and proved to function well on the hypervisor versions listed above. Later hypervisor releases may work but have not been tested yet.

To ensure high performance, it's recommended to deploy FortiWeb-VM on the machine types with minimum 2 vCPUs, and memory size larger than 8 GB.

Supported cloud platforms:

- AWS (Amazon Web Services)
- Microsoft Azure
- Google Cloud

- OCI (Oracle Cloud Infrastructure)
- Alibaba Cloud

Supported web browsers:

- Microsoft Edge 41
- Mozilla Firefox version 59
- Google Chrome version 65

Other web browsers may function correctly, but are not supported by Fortinet.

Build-in AV engine version: 6.00290

Upgrade instructions

Image checksums

To verify the integrity of the firmware file, use a checksum tool to compute the firmware file's MD5 checksum. Compare it with the checksum indicated by Fortinet. If the checksums match, the file is intact.

MD5 checksums for software releases are available from Fortinet Customer Service & Support:

HTTPS://support.fortinet.com

VM Image integrity is also verified when the FortiWeb is booting up. the running OS will generate signatures and compare them with the signatures attached to the image. If the signatures do not match, the running OS will be shutdown.

To download the Customer Service & Support image checksum tool

After logging in to the website, in the menus at the top of the page, click **Download**, and then click **Firmware Image Checksums**.

Alternatively, near the bottom of the page, click the **Firmware Image Checksums** button. This button appears only if one or more of your devices has a current support contract. In the **File Name** field, enter the firmware image file name including its extension, then click **Get Checksum Code**.

Upgrading from previous releases

VLAN Interfaces/Interfaces with overlapping IP addresses and the VIP/Server Policy bound to them cannot be imported (while loading the config file) after upgrading to 7.2.3 and later because we have implemented IP overlap check in this release.

Workaround: Downgrade to an earlier version through booting from the alternate partition (See "Booting from the alternate partition". The old configuration can be restored through this way) , edit IP addresses to eliminate overlapping, then upgrade to VERSION 7.4.1.

If you have configured 16 or more ADOMs, it is not advisable to upgrade to versions 7.4.0 and 7.2.1-7.2.5, as there is a risk of losing your Virtual IPs after the upgrade.

Workaround: If you do intend to proceed with the upgrade, please first consider reducing the number of ADOMs to fewer than 16 (root ADOM counted in) before initiating the upgrade.

- For FortiWeb-VM with a license purchased earlier than February 2019, you must upgrade to 6.3.4 or higher. Do not use a lower patch.
- The VLAN, 802.3ad Aggregate, and Redundant interfaces are not supported anymore on FortiWeb-VMs deployed on public cloud platforms since 6.3.6. If you upgrade from versions earlier than that, these configurations will be removed.

We don't provide maintenance for 6.4.x releases unless major errors, so we recommend you to upgrade 6.4.x to later versions.

In several hours or days (depends on number of existing logs) after upgrading from earlier versions, there might be delay (30-60 mins) to display new logs on GUI. This is caused by log version upgrade in 6.4.x & 7.0. It takes time to scan and process all existing logs.

The admin user password hash is changed from sha1 to sha256 since 7.2.0.

If you upgrade FortiWeb from versions earlier than 7.2.0, the hash will keep the same as before, but if admin user changes its password or there is new admin users added, the password hash will be sha256.

Port 995 will be switched to disabled state if you upgrade from versions earlier than 7.2.0. Remember to enable it (in **System > Admin > Settings**) if you need to use it for config sync.

When upgrading from releases prior to version 6.0, the "Retain Packet Payload" settings in **Log&Report > Log Config > Other Log Settings** will be reset to new defaults. This means that the following features—JSON Protection, Syntax-Based Detection, Malicious Bots, Known Good Bots, Mobile API Protection, and API Management—will be changed to a disabled state. If you had these options enabled prior to the upgrade, please remember to re-enable them if they are still required.

To upgrade from FortiWeb 7.4.x

Upgrade directly.

To upgrade from FortiWeb 7.2.x

Upgrade directly.

If you had enabled Threat Analytics in previous releases but did not have a valid license, the 14-day eval license will be automatically applied after upgrading to version 7.2.2 and later.

In this case, if you don't want to start the 14-day eval immediately after upgrade, it's recommended to disable the Threat Analytics first, then execute upgrade.

To upgrade from FortiWeb 7.0.x

Upgrade directly.

To upgrade from FortiWeb 6.4.x

Upgrade directly.

To upgrade from FortiWeb 6.3.x

Upgrade directly.

The "Bad Robot" and "SQL Injection (Syntax Based Detection)" signatures had been integrated into WAF modules "Bot Mitigation > Known Bots" and "SQL/XSS Syntax Based Detection" since 6.3.3. If you upgrade from a version earlier than 6.3.3, all settings of these two signatures will be merged to corresponding modules except the exception list.

Make sure to **add the exception list manually** after the upgrade, otherwise certain traffic will be blocked unexpectedly because of the missing of the exception list.

To upgrade from FortiWeb 6.1.x and 6.2.x

Upgrade directly.

The machine learning data will be lost after the upgrade as the database format is enhanced in 6.3.0. Machine Learning will automatically start collecting data again after the upgrade.

For FortiWeb-VM on docker platform, it's not supported to upgrade to 7.4.1 from versions earlier than 6.3.0. You need to install FortiWeb-VM 7.4.1 instead of upgrading to 7.4.1. For how to install, see FortiWeb-VM on docker.

The "Bad Robot" and "SQL Injection (Syntax Based Detection)" signatures had been integrated into WAF modules "Bot Mitigation > Known Bots" and "SQL/XSS Syntax Based Detection" since 6.3.3. If you upgrade from a version earlier than 6.3.3, all settings of these two signatures will be merged to corresponding modules except the exception list.

Make sure to **add the exception list manually** after the upgrade, otherwise certain traffic will be blocked unexpectedly because of the missing of the exception list.

To upgrade from FortiWeb 6.0 or 6.0.x

Upgrade directly.

After the upgrade:

- If you upgrade from 6.0, there might be database compatibility issue after the upgrade, because the MarisDB database version is upgraded to 10.3.8 since FortiWeb 6.0.2.
  - Run `get system status` to check the `Database Status`.
  - If it shows `Available`, it means the database works well. If it shows `Not Available`, you need to run `execute db rebuild` to solve the database compatibility issue. Please note in HA mode running `execute db rebuild` on primary appliance will take effect on all secondary appliances simultaneously.
- If you upgrade from 6.0.1, it's not necessary to run `execute db rebuild` because the database format has already been enhanced in 6.0.1, so that it's compatible with the new database.

The machine learning data will be lost after the upgrade as the database format is enhanced in 6.3.0. Machine Learning will automatically start collecting data again after the upgrade.

For FortiWeb-VM on docker platform, it's not supported to upgrade to 7.4.1 from versions earlier than 6.3.0. You need to install FortiWeb-VM 7.4.1 instead of upgrading to 7.4.1. For how to install, see FortiWeb-VM on docker.

The "Bad Robot" and "SQL Injection (Syntax Based Detection)" signatures had been integrated into WAF modules "Bot Mitigation > Known Bots" and "SQL/XSS Syntax Based Detection" since 6.3.3. If you upgrade from a version earlier than 6.3.3, all settings of these two signatures will be merged to corresponding modules except the exception list.

Make sure to **add the exception list manually** after the upgrade, otherwise certain traffic will be blocked unexpectedly because of the missing of the exception list.

To upgrade from FortiWeb 5.5.x, 5.6.x, 5.7.x, 5.8.x, or 5.9.x

Before the upgrade:

- If you upgrade from a version of FortiWeb previous to 5.9.0 on Azure platform, first change the addressing mode to DHCP in **Network > Interface**, then upgrade to FortiWeb 6.1.1, because FortiWeb on Azure platform has enforced the DHCP addressing mode since release 5.9.0.

After the upgrade:

- There might be database compatibility issue after the upgrade, because the MarisDB database version is upgraded to 10.3.8 since FortiWeb 6.0.2.
  - Run `get system status` to check the `Database Status`.
  - If it shows `Available`, it means the database works well. If it shows `Not Available`, you need to run `execute db rebuild` to solve the database compatibility issue. Please note in HA mode, running `execute db rebuild` on primary appliance will take effect on all secondary appliances simultaneously.

If you upgrade from a version of FortiWeb previous to 5.5.4, the upgrade process deletes any HTTP content routing policies that match X509 certificate content. You can re-create these policies using the new, enhanced X509 certificate settings.

The "Bad Robot" and "SQL Injection (Syntax Based Detection)" signatures had been integrated into WAF modules "Bot Mitigation > Known Bots" and "SQL/XSS Syntax Based Detection" since 6.3.3. If you upgrade from a version earlier than 6.3.3, all settings of these two signatures will be merged to corresponding modules except the exception list.

Make sure to **add the exception list manually** after the upgrade, otherwise certain traffic will be blocked unexpectedly because of the missing of the exception list.

To upgrade from FortiWeb 5.4.x

Before the upgrade:

- Resize your FortiWeb hard disk partitions. See Repartitioning the hard disk.

After the upgrade:

- There might be database compatibility issue after the upgrade, because the MarisDB database version is upgraded to 10.3.8 since FortiWeb 6.0.2.
  - Run `get system status` to check the `Database Status`.
  - If it shows `Available`, it means the database works well. If it shows `Not Available`, you need to run `execute db rebuild` to solve the database compatibility issue. Please note in HA mode, running `execute db rebuild` on primary appliance will take effect on all secondary appliances simultaneously.

The upgrade process deletes any HTTP content routing policies that match X509 certificate content. You can re-create these policies using the new, enhanced X509 certificate settings.

The "Bad Robot" and "SQL Injection (Syntax Based Detection)" signatures had been integrated into WAF modules "Bot Mitigation > Known Bots" and "SQL/XSS Syntax Based Detection" since 6.3.3. If you upgrade from a version earlier than 6.3.3, all settings of these two signatures will be merged to corresponding modules except the exception list.

Make sure to **add the exception list manually** after the upgrade, otherwise certain traffic will be blocked unexpectedly because of the missing of the exception list.

To upgrade from FortiWeb 5.3.x

Before the upgrade:

- Resize your FortiWeb hard disk partitions. See Repartitioning the hard disk.

After the upgrade:

- There might be database compatibility issue after the upgrade, because the MarisDB database version is upgraded to 10.3.8 since FortiWeb 6.0.2.
  - Run `get system status` to check the `Database Status`.
  - If it shows `Available`, it means the database works well. If it shows `Not Available`, you need to run `execute db rebuild` to solve the database compatibility issue. Please note in HA mode, running `execute db rebuild` on primary appliance will take effect on all secondary appliances simultaneously.

- If you are upgrading FortiWeb-VM on a hypervisor other than VMware vSphere, see FortiWeb-VM license validation after upgrade from pre-5.4 version.
- The upgrade process deletes any HTTP content routing policies that match X509 certificate content. You can re-create these policies using the new, enhanced X509 certificate settings.
- If you upgrade from a version of FortiWeb previous to 5.3.4 and your server policy configuration includes settings that customize an attack blocking or server unavailable error page, the upgrade deletes these server-based settings. The functionality is replaced by the global, default FortiWeb pages.
- If you upgrade from a version of FortiWeb previous to 5.3.6, the upgrade process deletes any V-zone IP addresses, which are no longer required. This operation has no impact on routing or connectivity after the upgrade.

The "Bad Robot" and "SQL Injection (Syntax Based Detection)" signatures had been integrated into WAF modules "Bot Mitigation > Known Bots" and "SQL/XSS Syntax Based Detection" since 6.3.3. If you upgrade from a version earlier than 6.3.3, all settings of these two signatures will be merged to corresponding modules except the exception list.

Make sure to **add the exception list manually** after the upgrade, otherwise certain traffic will be blocked unexpectedly because of the missing of the exception list.

To upgrade from a version previous to FortiWeb 5.3

FortiWeb5.3.exe is a Microsoft Windows executable script that automatically migrates your FortiWeb 5.2.x configuration settings to a 5.3.x configuration.

1. If your version is 5.0.x or 5.1.x, upgrade to FortiWeb 5.2.x.
2. Use **System > Maintenance > Backup & Restore** to back up your FortiWeb configuration. Fortinet recommends that you use the **Backup entire** configuration option.
   Note: If you forget to back up the configuration before you upgrade to FortiWeb 5.3, you can use the **Boot into alternate firmware** option to downgrade to the previous version, and then backup its configuration. For details, see the *FortiWeb Administration Guide*:
   http://docs.fortinet.com/fortiweb/admin-guides
3. To obtain the upgrade script, log in to the Fortinet Customer Service & Support website:
   HTTPS://support.fortinet.com
   In the menus at the top of the page, click **Download**, and then click **Firmware Images**.
4. For product, select **FortiWeb**. Then, on the Download tab, navigate to the following folder:
   `/FortiWeb/v5.00/5.3/Upgrade_script/`
5. Download the .zip compressed archive (for example, `FortiWeb5.3Upgrade_v1.9.zip`) to a location you can access from your Windows PC.
6. In Windows, extract the .zip archive's contents, and then use a command line interface to execute the upgrade script.
   For example, in the directory where the file `FortiWeb5.3Upgrade.exe` and your backup configuration file are located, execute the following command:
   ```
   FortiWeb5.3Upgrade.exe -i YOUR_CONFIG_NAME.conf –o 5.3_new.conf
   ```
   The script removes the Domain Server, Physical Server, Server Farm, Content Routing policy configurations and generates a new configuration file named `5.3_new.conf`.
7. Resize your FortiWeb hard disk partitions. See Repartitioning the hard disk.
8. Upgrade to 6.3.9 first, then upgrade to 7.4.1.
9. Use **System > Maintenance > Backup & Restore** to restore the configuration file you created using the script (for example, `5.3_new.conf`).
10. There might be database compatibility issue after the upgrade, because the MarisDB database version is upgraded to 10.3.8 since FortiWeb 6.0.2:
    - Run `get system status` to check the `Database Status`.
    - If it shows `Available`, it means the database works well. If it shows `Not Available`, you need to run `execute db rebuild` to solve the database compatibility issue. Please note in HA mode, running `execute db rebuild` on primary appliance will take effect on all secondary appliances simultaneously.

- If you are upgrading FortiWeb-VM on a hypervisor other than VMware vSphere, see FortiWeb-VM license validation after upgrade from pre-5.4 version.
- The upgrade process deletes any HTTP content routing policies that match X509 certificate content. You can re-create these policies using the new, enhanced X509 certificate settings.
- If your server policy configuration includes settings that customize an attack blocking or server unavailable error page, the upgrade deletes these server-based settings. The functionality is replaced by the global, default FortiWeb pages.
- The upgrade process deletes any V-zone IP addresses, which are no longer required. This operation has no impact on routing or connectivity after the upgrade.

The "Bad Robot" and "SQL Injection (Syntax Based Detection)" signatures had been integrated into WAF modules "Bot Mitigation > Known Bots" and "SQL/XSS Syntax Based Detection" since 6.3.3. If you upgrade from a version earlier than 6.3.3, all settings of these two signatures will be merged to corresponding modules except the exception list.

Make sure to **add the exception list manually** after the upgrade, otherwise certain traffic will be blocked unexpectedly because of the missing of the exception list.

Note: To upgrade from 4.0 MR4, Patch x or earlier, please contact Fortinet Technical Support.

Repartitioning the hard disk

To upgrade from a version of FortiWeb previous to 5.5, you must first resize your FortiWeb operating system's disk.

In most cases, you'll have to install a special firmware image to repartition the disk. For details, see To use the special firmware image to repartition the operating system's disk on page 16.

For the following FortiWeb-VM tools, you cannot install the special firmware image to repartition the hard disk:

- Citrix XenServer
- Open-source Xen Project
- Microsoft Hyper-V
- KVM

For these platforms, to repartition the disk you must deploy a new virtual machine and restore the configuration and log data you backed up earlier. See To repartition the operating system's disk without the special firmware image on page 16.

Repartitioning affects the operating system’s disk (USB/flash disk), not the hard disk. Existing data such as reports and event, traffic, and attack logs, which are on the hard disk, are not affected.

You can use this image to upgrade an HA cluster by following the same procedure you use for a regular firmware upgrade. For details, see "Updating firmware on an HA pair" in the *FortiWeb Administration Guide*:

http://docs.fortinet.com/fortiweb/admin-guides

To use the special firmware image to repartition the operating system's disk

1. Perform a complete backup of your FortiWeb configuration.
   Although the repartitioning firmware image automatically saves your FortiWeb configuration, Fortinet recommends that you also manually back it up. For details, see the *FortiWeb Administration Guide*:
   http://docs.fortinet.com/fortiweb/admin-guides
2. Contact Fortinet Technical Support to obtain the special repartitioning firmware image: special build 5.4.1, build 6066.
3. Follow one of the same procedures that you use to install or upgrade firmware using a standard image:

- In the Web UI, go to **System > Status > Status**. Locate the **System Information** widget. Beside **Firmware Version**, click **[Update]**.
- In the Web UI, go to **System > Maintenance > Backup & Restore**. Select the **Restore** option in **System Configuration**.
- In the CLI, enter the `execute restore config` command.

FortiWeb backs up the current configuration, resizes the hard drive partitions, and boots the system.

Continue with the instructions in Upgrading from previous releases on page 9.

To repartition the operating system's disk without the special firmware image

1. Perform a complete backup of your FortiWeb configuration. For details, see the *FortiWeb Administration Guide*:
   http://docs.fortinet.com/fortiweb/admin-guides
2. Use the instructions for your hypervisor platform to detach the log disk from the VM:
   - To detach the log disk from a Citrix XenServer VM on page 16
   - To detach the log disk from a Microsoft Hyper-V VM on page 16
   - To detach the log disk from a KVM VM on page 17
3. Deploy a new FortiWeb 5.5 or later virtual machine on the same platform.
4. Use the instructions for your hypervisor platform to attach the log disk you detached earlier to the new VM:
   - To attach the log disk to a Citrix XenServer VM on page 17
   - To attach the log disk to a Microsoft Hyper-V VM on page 17
   - To attach the log disk to a KVM VM on page 17
5. Restore the configuration you backed up earlier to the new VM.
6. When you are sure that the new VM is working properly with the required configuration and log data, delete the old VM.

To detach the log disk from a Citrix XenServer VM

1. In Citrix XenCenter, connect to the VM.
2. In the settings for the VM, on the Storage tab, select **Hard disk 2**, and then click **Properties**.
3. For **Description**, enter a new description, and then click **OK**.
4. Select **Hard disk 2** again, and then click **Detach**.
5. Click **Yes** to confirm the detach task.

To detach the log disk from a Microsoft Hyper-V VM

1. In the Hyper-V Manager, select the FortiWeb-VM in the list of machines, and then, under **Actions**, click **Settings**.
2. Select **Hard Drive (data.vhd)**, and then click **Remove**.

3. Click **Apply**.

To detach the log disk from a KVM VM

1. In Virtual Machine Manager, double-click the FortiWeb-VM in the list of machines.
2. Click **Show virtual hardware details** (the "i" button).
3. Click **VirtIO Disk 2**, and then click **Remove**.

To attach the log disk to a Citrix XenServer VM

1. In Citrix XenCenter, connect to the VM.
2. In the settings for the new, FortiWeb 5.5 or later VM, on the Storage tab, select **Hard disk 2**, and then click **Delete**.
3. Click **Yes** to confirm the deletion.
4. On the Storage tab, click **Attach Disk**.
5. Navigate to the hard disk you detached from the old VM to attach it.
6. Start your new virtual machine.

To attach the log disk to a Microsoft Hyper-V VM

1. In the Hyper-V Manager, select the new, FortiWeb 5.5 or later virtual machine in the list of machines, and then, under Actions, click **Settings**.
2. Select **Hard Drive (log.vhd)**, and then click **Browse**.
3. Browse to the hard drive you detached from the old virtual machine to select it.
4. Click **Apply**.
5. Start the new virtual machine.

To attach the log disk to a KVM VM

For KVM deployments, you remove an existing virtual disk from the new VM before you attach the disk detached from the original VM.

1. In Virtual Machine Manager, double-click the new, FortiWeb 5.5 or later VM in the list of machines.
2. Click **Show virtual hardware details** (the "i" button).
3. Click **VirtIO Disk 2**, and then click **Remove**.
4. Click **Add Hardware**.
5. Click **Storage**, select **Select managed or other existing storage**, and then click **Browse**.
6. Click **Browse Local**.
7. Navigate to the log disk file for the original machine to select it, and then click **Open**.
8. For **Device type**, select **Virtio disk**, for **Storage format**, select **qcow2**, and then click **Finish**.
9. Start the new virtual machine.

Upgrading an HA cluster

If the HA cluster is running FortiWeb 4.0 MR4 or later, the HA cluster upgrade is streamlined. When you upgrade the active appliance, it automatically upgrades any standby appliance(s), too; no manual intervention is required to upgrade

the other appliance(s). This includes upgrading using the special hard disk repartitioning firmware image for upgrading to 5.5 or later from earlier releases.

If the HA cluster is running FortiWeb 4.0 MR3 Patch x or earlier, contact Fortinet Technical Support for assistance.

Downgrading to a previous release

ML based modules data loss

The machine learning data will be lost if you downgrade to versions lower than 6.2.0. It cannot be recovered because the database architecture is changed since 6.2.0.

Log compatibility issue

There might be log compatibility issue between different FortiWeb versions. If logs are not available on GUI after downgrading to an earlier version, please run `execute database rebuild`.

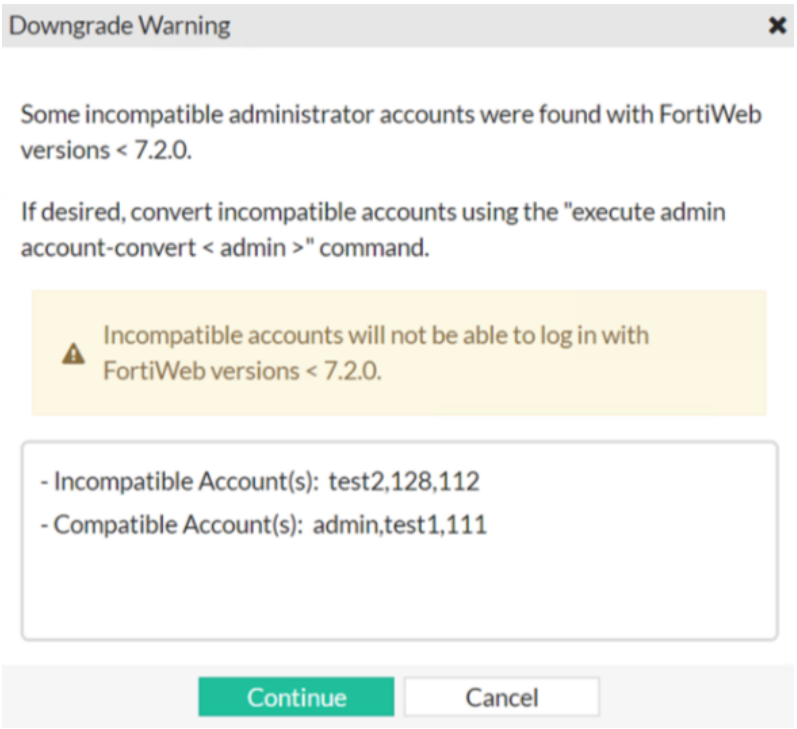
Basic configuration preserved if downgrading to 5.1 or 5.0

When you downgrade to version 5.1 or 5.0, the basic configuration for your appliance's connections to the network (e.g., IP address and route configuration) is preserved.

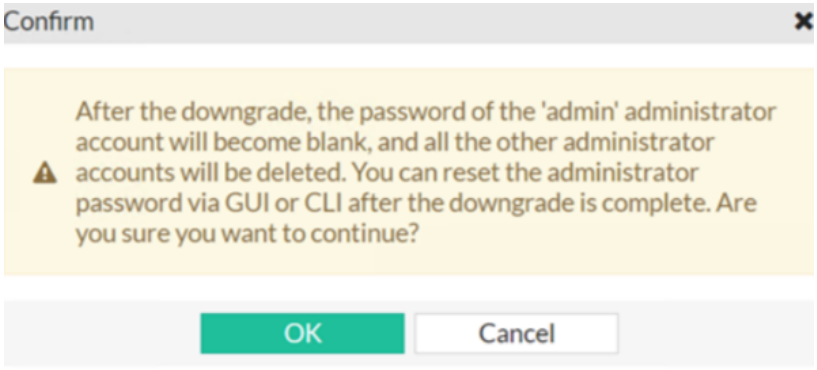
Admin user password hash change

The admin user password hash is changed from sha1 to sha256 since 7.2.0. **System > Admin > Administrators**

If you downgrade to 7.0.x and 7.1.x, you may need to convert password hash otherwise the admin users can't log in with their credentials. The following message will prompt after downgrading:



If you downgrade to versions earlier than 7.0, you need to recreate the lost accounts **System > Admin > Administrators**. The following message will prompt after downgrading:



FortiWeb-VM license validation after upgrade from pre-5.4 version

On some virtual machine deployments, upgrading FortiWeb-VM from a version previous to 5.4 changes the virtual machine's universal unique identifier (UUID). Because of this change, the first time you upload your existing FortiWeb-VM license, the FortiGuard Distribution Network (FDN) server reports that it is invalid.

To solve this problem, after you have uploaded the license, wait 90 minutes, and then upload the license again.

This issue does not affect FortiWeb-VM deployed on a VMware vSphere hypervisor.

Resolved issues

This section lists issues that have been fixed in version 7.4.1. For inquires about a particular bug, please contact Fortinet Customer Service & Support: HTTPS://support.fortinet.com

Bug ID	Description
0967153	When the API GET request doesn't have mkey, a response 500 error will be returned. More details should be included in the response message.
0965426	Certain file extensions are not supported in File Security Rule > Predefined File Types.
0964800	On the FortiWeb100E Gen1 unit, running `diagnose hardware check all` can correctly detect the memory but will be stuck when printing it.
0964467	The Radius admin groups can't have more than one name which cause login not working as expected in certain situation.
0961514	Configuration loss occurs after upgrading from 7.2.0 to 7.2.5.
0961043	It's not supported to configure Max Concurrent Streams to rate limit potential HTTP2 RST-Stream attacks.
0960616	Username filter in Attack Logs does not work as expected.
0960277	The proxyd crash occurs. Applications randomly becomes intermittently inaccessible.
0960016	The proxyd hits 100% and many websites are down when there are a large number of content routing configured in each server policy.
0958360	Too many health check alerts are generated for Server Health.
0958232	They system sends illegal HTTP request to back-end servers.
0957398	The .apk extension is not available for use under **Input Validation > File Security**.
0956532	Unable to register FortiWeb VM running on Azure into FortiAnalyzer.
0955391	High cpu usage.
0954061	The SR-IOV network cards on KVM does not work in 7.x.x versions.
0952693	Can't filter out the "x509 Certificate" related subjects in traffic logs and attack logs.
0951426	File type cannot be detected when the file name has a carriage return in multiform/multipart requests.
0950749	Console show some errors after upgrade.
0949584	The ReCaptcha page is not automatically resized on mobile devices.

Bug ID	Description
0948605	Log files are not created on the log disk.
0948591	OKTA MFA integration with GUI login doesn't work.
0948568	Subsequent traffic from a blocked IP based on XFF header content is allowed.
0948538	Unstable fuzzy-disable-list scripts in a Web Shell Detection policy.
0947250	The proxyd crashes ml_api_cloud_get_url_model_id.
0946824	he proxyd crashes on websocket_info_clean.
0946507	Cannot enter "?" in the reg-exp using CLI.
0946438	Newly imported certificate does not trigger a event log with cert-expiry details.
0944805	FortiView Threat Map does not show any attacks from the last hour.
0944634	Videos fail to load when HTTP/2 is enabled.
0943027	Application traffic interruption caused by a proxyd issue.
0942110	The secondary device is unreachable when HA is established.
0941239	Blank page after successful login from remote server.
0939384	Multiple VIPs with the same IP are allowed to be created in ADOM.
0938092	Proxy Crashes.
0936408	Unable to automatically register FortiWeb license in Azure deployment.
0936030	Internal server error in dashboard in Client Management.
0935465	Firewall admin-policy does not work with TCP port 8 and 43.
0935444	Interface secondary IP and VIP (ip_src_balance) does not work in 7.2.2.
0934944	FortiWeb GUI incorrectly displays default certificate.
0934539	AWS SDN Connector unable to retrieve the Private subnet IP.
0931263	Log hard disk database status change to unavailable.
0929895	Traffic is interrupted unexpectedly.
0929806	The read only administrator can see passwords' hashes in CLI.
0929539	Lua Scripting for HTTP response code: If there are two consecutive request within one connection, if the first one triggers the http:collect(), this collection function will be revoked no mater if the http:collect () is revoked.
0926053	Secondary radius IP address flooded with failed requests following its configuration.
0924691	Add date/time filter in attack log - focus goes to wrong field.
0924609	Unexpected proxyd crashes.

Bug ID	Description
0919967	Custom Port not in 'LISTEN' on Backup unit in Active-Active HV cluster.
0901939	'Heard & Mcdonald Islands' is not listed in GEO IP.
0855594	Scans detecting vulnerable versions of AngularJS and jQuery.

Known issues

The following issues have been identified in version 7.4.1. To inquire about a particular bug or report a bug, please contact Fortinet Customer Service & Support: HTTPS://support.fortinet.com

Bug ID	Description
0970012	The IP Group information is exposed across all ADOMS.
0963218	The system fails to decode the URL path in Custom Rule.
0949252	When choosing the **Client ID Block Period** actions in **Bot Mitigation > Threshold Based Detection**, the subsequent requests from the same client ID cannot be blocked after the Captcha enforcement validation is timeout.

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