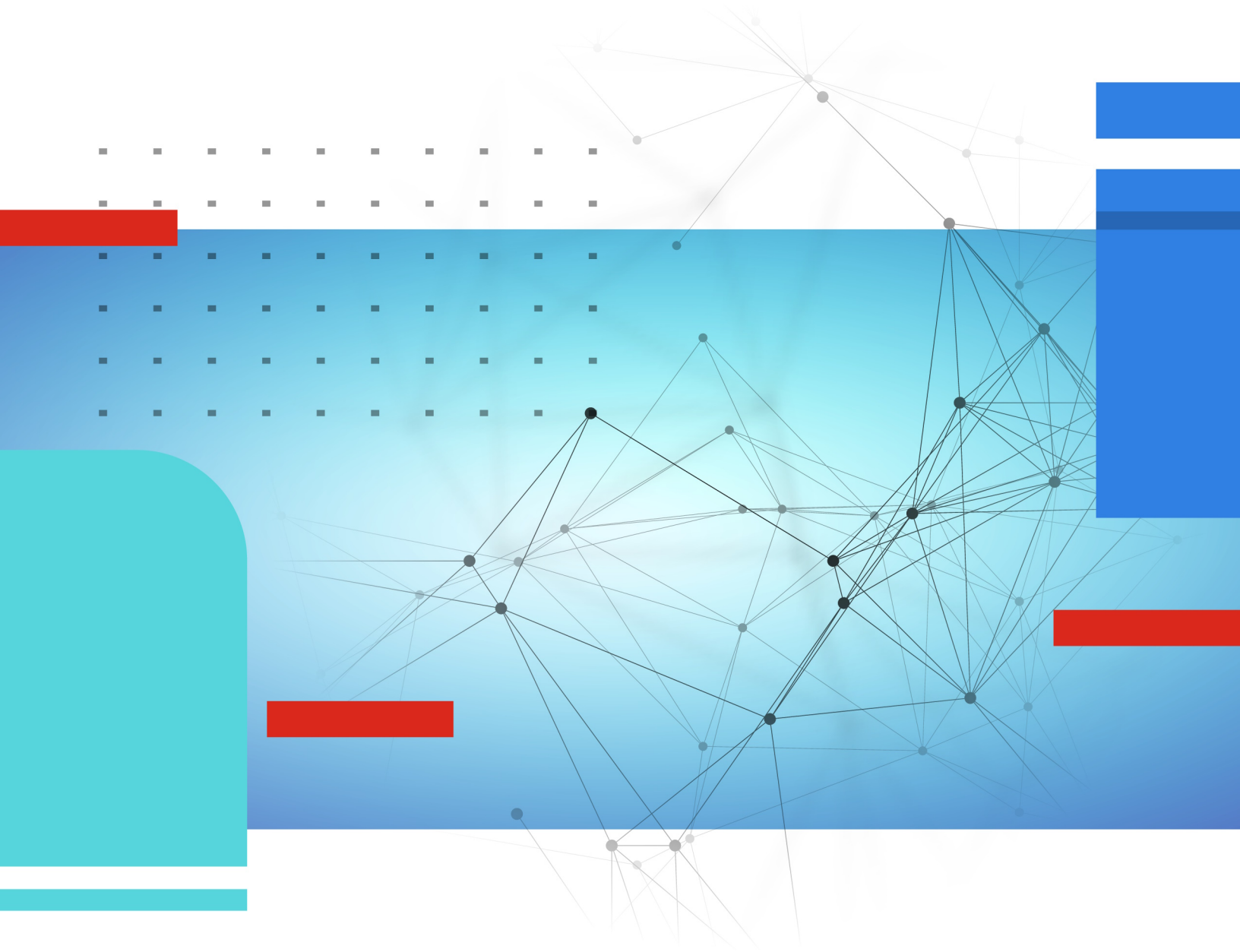
Release Notes

FortiOS 7.6.2



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January 30, 2025
FortiOS 7.6.2 Release Notes
01-762-1114584-20250130

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Change Log

Date	Change Description
2025-01-28	Initial release.
2025-01-30	Updated Policies that use an interface show missing or empty values after an upgrade on page 16 and Managed FortiSwitch do not permit empty passwords for administrator accounts on page 16.

Introduction and supported models

This guide provides release information for FortiOS 7.6.2 build 3462.

For FortiOS documentation, see the Fortinet Document Library.

Supported models

FortiOS 7.6.2 supports the following models.

FortiGate	FG-40F, FG-40F-3G4G, FG-60F, FG-61F, FG-70F, FG-71F, FG-80F, FG-80F-BP, FG-80F-DSL, FG-80F-POE, FG-81F, FG-81F-POE, FG-90G, FG-91G, FG-100F, FG-101F, FG-120G, FG-121G, FG-200E, FG-200F, FG-201E, FG-201F, FG-300E, FG-301E, FG-400E, FG-400E-BP, FG-401E, FG-400F, FG-401F, FG-500E, FG-501E, FG-600E, FG-601E, FG-600F, FG-601F, FG-800D, FG-900D, FG-900G, FG-901G, FG-1000D, FG-1000F, FG-1001F, FG-1100E, FG-1101E, FG-1800F, FG-1801F, FG-2000E, FG-2200E, FG-2201E, FG-2500E, FG-2600F, FG-2601F, FG-3000D, FG-3000F, FG-3001F, FG-3100D, FG-3200D, FG-3200F, FG-3201F, FG-3300E, FG-3301E, FG-3400E, FG-3401E, FG-3500F, FG-3501F, FG-3600E, FG-3601E, FG-3700D, FG-3700F, FG-3701F, FG-3960E, FG-3980E, FG-4200F, FG-4201F, FG-4400F, FG-4401F, FG-4800F, FG-4801F, FG-5001E, FG-5001E1, FG-6000F, FG-7000E, FG-7000F
FortiWiFi	FWF-40F, FWF-40F-3G4G, FWF-60F, FWF-61F, FWF-80F-2R, FWF-80F-2R-3G4G-DSL, FWF-81F-2R, FWF-81F-2R-3G4G-DSL, FWF-81F-2R-POE, FWF-81F-2R-3G4G-POE
FortiGate Rugged	FGR-60F, FGR-60F-3G4G, FGR-70F, FGR-70F-3G4G
FortiFirewall	FFW-1801F, FFW-2600F, FFW-3001F, FFW-3501F, FFW-3980E, FFW-4200F, FFW-4400F, FFW-4401F, FFW-4801F, FFW-VM64, FFW-VM64-KVM
FortiGate VM	FG-ARM64-AWS, FG-ARM64-AZURE, FG-ARM64-GCP, FG-ARM64-KVM, FG-ARM64-OCI, FG-VM64, FG-VM64-ALI, FG-VM64-AWS, FG-VM64-AZURE, FG-VM64-GCP, FG-VM64-HV, FG-VM64-IBM, FG-VM64-KVM, FG-VM64-OPC, FG-VM64-RAXONDEMAND, FG-VM64-XEN

FortiGate 6000 and 7000 support

FortiOS 7.6.2 supports the following FG-6000F, FG-7000E, and FG-7000F models:

FG-6000F	FG-6001F, FG-6300F, FG-6301F, FG-6500F, FG-6501F
FG-7000E	FG-7030E, FG-7040E, FG-7060E
FG-7000F	FG-7081F, FG-7121F

Special notices

FortiManager support for updated FortiOS private data encryption key

With the introduction of FortiOS 7.6.1, Fortinet has updated the private-data-encryption key feature. Administrators are no longer required to manually input a 32-digit hexadecimal `private-data-encryption` key. Instead administrators simply enable the command, and a random `private-data-encryption` key is generated.

Previous FortiOS CLI behavior

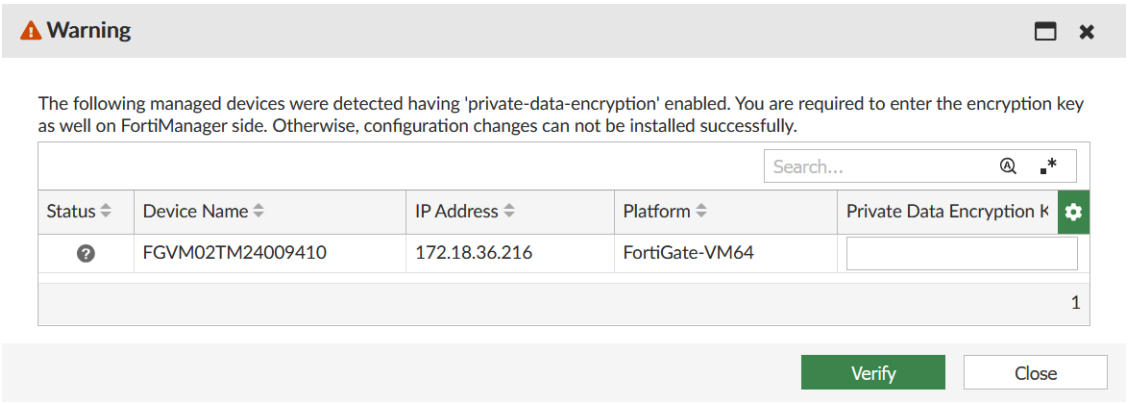
```
config system global
    set private-data-encryption enable
end
Please type your private data encryption key (32 hexadecimal numbers):
1234567890123456789012345678 9abc
Please re-enter your private data encryption key (32 hexadecimal numbers) again:
1234567890123456789012345678 9abc
Your private data encryption key is accepted.
```

New FortiOS CLI behavior

```
config system global
    set private-data-encryption enable
end
This operation will generate a random private data encryption key!
Previous config files encrypted with the system default key cannot be restored after this
operation!
Do you want to continue? (y/n)y
Private data encryption key generation succeeded!
```

FortiManager behavior

Support for the FortiGate `private-data-encryption` key by the Device Manager in FortiManager 7.6.2 and earlier is unchanged. It automatically detects the remote FortiGate `private-data-encryption` key status and prompts the administrator to manually type the private key (see picture below). FortiManager 7.6.2 and earlier does not support the updated, random `private-data-encryption` key as the administrator will have no knowledge of the key generated in the FortiOS CLI command above. It will be supported in a later version of FortiManager.



FortiOS upgrade behavior

If in FortiOS 7.4.5 or 7.6.0 the 32-digit hexadecimal private key is enabled, and then the FortiGate device is upgraded to 7.6.1, the 32-digit hexadecimal `private-data-encryption` key is preserved. As a result, FortiManager 7.6.2 and earlier is aware of the 32-digit hexadecimal `private-data-encryption` key and can continue to manage the FortiGate device. However, if the `private-data-encryption` key is enabled after an upgrade of FortiOS to 7.6.1, FortiManager 7.6.2 and earlier no longer can manage FortiGate devices running FortiOS 7.6.1.

Hyperscale incompatibilities and limitations

See Hyperscale firewall incompatibilities and limitations in the Hyperscale Firewall Guide for a list of limitations and incompatibilities with FortiOS 7.6.2 features.

FortiGate 6000 and 7000 incompatibilities and limitations

See the following links for information about FortiGate 6000 and 7000 limitations and incompatibilities with FortiOS 7.6.2 features.

- FortiGate 6000 incompatibilities and limitations
- FortiGate 7000E incompatibilities and limitations
- FortiGate 7000F incompatibilities and limitations

SSL VPN removed from 2GB RAM models for tunnel and web mode

On FortiGate models with 2GB of RAM or below, the SSL VPN web and tunnel mode feature will no longer be available from the GUI or CLI. Settings will not be upgraded from previous versions.

The affected models include:

- FGT-40F/FWF-40F and variants
- FGT-60F/FWF-60F
- FGT-61F/FWF-61F
- FGR-60F and variants (2GB versions only)

To confirm if your FortiGate model has 2 GB RAM, enter `diagnose hardware sysinfo conserve` in the CLI and check that the total RAM value is below 2000 MB (1000 MB = 1 GB).

On these FortiGate models, consider migrating to using IPsec Dialup VPN for remote access.

See SSL VPN to IPsec VPN Migration for more information.

FortiGate models not listed above will continue to have SSL VPN web and tunnel mode support.

2 GB RAM FortiGate models no longer support FortiOS proxy-related features

As part of improvements to enhance performance and optimize memory usage on FortiGate models with 2 GB RAM or less, starting from version 7.4.4, FortiOS no longer supports proxy-related features.

This change impacts the FortiGate 40F and 60F series devices, along with their variants. See Proxy-related features no longer supported on FortiGate 2 GB RAM models for more information.

FortiGate VM memory and upgrade

FortiGate virtual machines (VMs) are not constrained by memory size and will continue to support all available features after upgrading to FortiOS 7.6.0. However, it is recommended to setup VMs with at least 4 GB of RAM for optimal performance.

Hyperscale NP7 hardware limitation

Because of an NP7 hardware limitation, for CGN traffic accepted by a hyperscale firewall policy that includes an overload with port block allocation (overload PBA) IP Pool, only one block is allocated per client. The setting of the

hyperscale firewall policy `cgn-resource-quota` option is ignored.

Because of this limitation, under certain rare conditions (for example, only a single server side IP address and port are being used for a large number of sessions), port allocation may fail even if the block usage of the client is less than its quota. In cases such as this, if the client has traffic towards some other servers or ports, additional port allocation can become successful. You can also work around this problem by increasing the IP Pool block size (`cgn-block-size`).

FortiGate cannot restore configuration file after private-data-encryption is re-enabled

In a new enhancement, enabling `private-data-encryption` will utilize a randomly generated private key. Therefore, FortiGate cannot restore the configuration file in the following sequence:

1. `private-data-encryption` enabled with random key, and configuration is backed up.
2. `private-data-encryption` disabled.
3. `private-data-encryption` enabled again, with new random key.
4. Restore configuration file in step 1.

When disabling `private-data-encryption`, a warning in the CLI will be displayed:

```
This operation will restore system default data encryption key!

Previous config files encrypted with the private key cannot be restored after this operation!

Do you want to continue? (y/n)y
```

SSL VPN not supported on FortiGate 90G series models

The SSL VPN web and tunnel mode feature will not be available from the GUI or the CLI on the FortiGate 90G and 91G models. Settings will not be upgraded from previous versions.

RADIUS vulnerability

Fortinet has resolved a RADIUS vulnerability described in CVE-2024-3596. As a result, firewall authentication, FortiGate administrative GUI authentication, and WiFi authentication may be affected depending on the functionality of the RADIUS server software used in your environment. RFC 3579 contains information on the affected RADIUS attribute, message-authenticator.

In order to protect against the RADIUS vulnerability described in CVE-2024-3596, as a RADIUS client, FortiGate will:

1. Force the validation of message-authenticator.
2. Reject RADIUS responses with unrecognized proxy-state attribute.

Message-authenticator checking is made mandatory under UDP/TCP. It is not mandatory when using TLS. Therefore, if FortiGate is using UDP/TCP mode without RADSEC, the RADIUS server should be patched to ensure the message-authenticator attribute is used in its RADIUS messages.

Affected Product Integration

- FortiAuthenticator version 6.6.1 and older
- Third party RADIUS server that does not support sending the message-authenticator attribute

Solution

- Upgrade FortiAuthenticator to version 6.6.2, 6.5.6 or 6.4.10 and follow the upgrade instructions: https://docs.fortinet.com/document/fortiauthenticator/6.6.2/release-notes/859240/upgrade-instructions
- Upgrade the RADIUS server and/or enable it to send the correct message-authenticator attribute

Upgrade information

Supported upgrade path information is available on the Fortinet Customer Service & Support site.

FortiGate	Upgrade option	Details
Individual FortiGate devices	Manual update	Use the procedure in this topic. See also Upgrading individual devices in the FortiOS Administration Guide.
	Automatic update based on FortiGuard upgrade path	See Enabling automatic firmware updates in the FortiOS Administration Guide for details
Multiple FortiGate devices in a Fortinet Security Fabric	Manual, immediate or scheduled update based on FortiGuard upgrade path	See Fortinet Security Fabric upgrade on page 12 and Upgrading all devices in the FortiOS Administration Guide.

To view supported upgrade path information:

1. Go to https://support.fortinet.com.
2. From the *Download* menu, select *Firmware Images*.
3. Check that *Select Product* is *FortiGate*.
4. Click the *Upgrade Path* tab and select the following:
   - *Current Product*
   - *Current FortiOS Version*
   - *Upgrade To FortiOS Version*
5. Click *Go*.

Fortinet Security Fabric upgrade

FortiOS 7.6.2 is verified to work with these Fortinet products. This includes:

FortiAnalyzer	• 7.6.2
FortiManager	• 7.6.2
FortiExtender	• 7.4.0 and later
FortiSwitch OS (FortiLink support)	• 6.4.6 build 0470 and later
FortiAP	• 7.2.2 and later

FortiAP-U	• 6.2.5 and later
FortiAP-W2	• 7.2.2 and later
FortiClient EMS	• 7.0.3 build 0229 and later
FortiClient Microsoft Windows	• 7.0.3 build 0193 and later
FortiClient Mac OS X	• 7.0.3 build 0131 and later
FortiClient Linux	• 7.0.3 build 0137 and later
FortiClient iOS	• 7.0.2 build 0036 and later
FortiClient Android	• 7.0.2 build 0031 and later
FortiSandbox	• 2.3.3 and later for post-transfer scanning • 4.2.0 and later for post-transfer and inline scanning

* If you are using FortiClient only for IPsec VPN or SSL VPN, FortiClient version 6.0 and later are supported.

When upgrading your Security Fabric, devices that manage other devices should be upgraded first.

When using FortiClient with FortiAnalyzer, you should upgrade both to their latest versions. The versions between the two products should match. For example, if using FortiAnalyzer 7.6.0, use FortiClient 7.6.0.

Upgrade the firmware of each device in the following order. This maintains network connectivity without the need to use manual steps.

1. FortiAnalyzer
2. FortiManager
3. FortiGate devices
4. Managed FortiExtender devices
5. Managed FortiSwitch devices
6. Managed FortiAP devices
7. FortiClient EMS
8. FortiClient
9. FortiSandbox
10. FortiMail
11. FortiWeb
12. FortiNAC
13. FortiVoice
14. FortiDeceptor
15. FortiNDR
16. FortiTester
17. FortiMonitor

If Security Fabric is enabled, then all FortiGate devices must be upgraded to 7.6.2. When Security Fabric is enabled in FortiOS 7.6.2, all FortiGate devices must be running FortiOS 7.6.2.

Downgrading to previous firmware versions

Downgrading to previous firmware versions results in configuration loss on all models. Only the following settings are retained:

- operation mode
- interface IP/management IP
- static route table
- DNS settings
- admin user account
- session helpers
- system access profiles

Firmware image checksums

The MD5 checksums for all Fortinet software and firmware releases are available at the Customer Service & Support portal, https://support.fortinet.com. After logging in, go to *Support* > *Firmware Image Checksums* (in the *Downloads* section), enter the image file name including the extension, and click *Get Checksum Code*.

FortiGate 6000 and 7000 upgrade information

Upgrade FortiGate 6000 firmware from the management board GUI or CLI. Upgrade FortiGate 7000 firmware from the primary FIM GUI or CLI. The FortiGate 6000 management board and FPCs or the FortiGate 7000 FIMs and FPMs all run the same firmware image. Upgrading the firmware copies the firmware image to all components, which then install the new firmware and restart. A FortiGate 6000 or 7000 firmware upgrade can take a few minutes, the amount of time depending on the hardware and software configuration and whether DP or NP7 processor software is also upgraded.

On a standalone FortiGate 6000 or 7000, or an HA cluster with `uninterruptible-upgrade` disabled, the firmware upgrade interrupts traffic because all components upgrade in one step. These firmware upgrades should be done during a quiet time because traffic can be interrupted for a few minutes during the upgrade process.

Fortinet recommends running a graceful firmware upgrade of a FortiGate 6000 or 7000 FGCP HA cluster by enabling `uninterruptible-upgrade` and `session-pickup`. A graceful firmware upgrade only causes minimal traffic interruption.

Fortinet recommends that you review the services provided by your FortiGate 6000 or 7000 before a firmware upgrade and then again after the upgrade to make sure that these services continue to operate normally. For example, you might want to verify that you can successfully access an important server used by your organization before the upgrade and make sure that you can still reach the server after the upgrade and performance is comparable. You can also take a snapshot of key performance indicators (for example, number of sessions, CPU usage, and memory usage) before the upgrade and verify that you see comparable performance after the upgrade.

To perform a graceful upgrade of your FortiGate 6000 or 7000 to FortiOS 7.6.2:

1. Use the following command to set the `upgrade-mode` to `uninterruptible` to support HA graceful upgrade:

   ```
   config system ha
       set uninterruptible-upgrade enable
   end
   ```

   When upgrading from FortiOS 7.4.1 to a later version, use the following command to enable uninterruptible upgrade:

   ```
   config system ha
       set upgrade-mode uninterruptible
   end
   ```

2. Download the FortiOS 7.6.2 FG-6000F, FG-7000E, or FG-7000F firmware from https://support.fortinet.com.
3. Perform a normal upgrade of your HA cluster using the downloaded firmware image file.
4. When the upgrade is complete, verify that you have installed the correct firmware version.
   For example, check the FortiGate dashboard or use the `get system status` command.
5. Check the *Cluster Status* dashboard widget or use the `diagnose sys confsync status` command to confirm that all components are synchronized and operating normally.

Default setting of cp-accel-mode is changed to none on 2GB memory models

This change disables CP acceleration to lower system memory usage thus can prevent some unexpected behavior due to lack of memory.

Previous FortiOS CLI behavior:

```
config ips global
    set cp-accel-mode advanced
end
```

New FortiOS CLI behavior after upgrade:

```
config ips global
    set cp-accel-mode none
end
```

This change will cause performance impact as CPU will do the pre-match (pattern match) inside IPS (CPU) instead of hardware engine (cp module in SOC4). Some customers could expect an increase in CPU utilization as a result.

FortiGate and FortiWiFi 4xF/6xF families are affected by this change.

Policies that use an interface show missing or empty values after an upgrade

If local-in policy, DoS policy, interface policy, multicast policy, TTL policy, or central SNAT map used an interface in version 7.4.5, 7.6.0 GA or any previous GA version that was part of the SD-WAN zone, these policies will be deleted or show empty values after upgrading to version 7.4.6 or 7.6.1 or later.

After upgrading to version 7.4.6 or 7.6.1 GA or later, users must manually recreate these policies and assign them to the appropriate SD-WAN zone.

Managed FortiSwitch do not permit empty passwords for administrator accounts

Starting from FortiOS version 7.6.1, a managed FortiSwitch no longer permits empty passwords for the admin account. If a FortiSwitch unit was previously authorized without an admin password, the FortiGate will automatically generate a random admin password for the FortiSwitch upon upgrading to 7.6.1 or later. This change will cause the admin to lose access.

To regain access, configure a password override on the FortiGate device using the following commands:

```
config switch-controller switch-profile
    edit default
        set login-passwd-override enable
        set login-passwd <passwd>
    next
end
```

FortiSwitch units with an existing admin password will not be affected by this change.

SLBC FG-5001E primary blade fails to install image

For FG-5001E in a session-aware load balanced cluster (SLBC), all secondary blades install the image successfully. However, the primary blade fails, showing a `sync timeout` error, even with `graceful-upgrade` disabled.

Product integration and support

The following table lists FortiOS 7.6.2 product integration and support information:

Web browsers	• Microsoft Edge 112 • Mozilla Firefox version 113 • Google Chrome version 113 Other browser versions have not been tested, but may fully function. Other web browsers may function correctly, but are not supported by Fortinet.
Explicit web proxy browser	• Microsoft Edge 112 • Mozilla Firefox version 113 • Google Chrome version 113 Other browser versions have not been tested, but may fully function. Other web browsers may function correctly, but are not supported by Fortinet.
FortiController	• 5.2.5 and later Supported models: FCTL-5103B, FCTL-5903C, FCTL-5913C

Fortinet Single Sign-On (FSSO)	• 5.0 build 0319 and later (needed for FSSO agent support OU in group filters)
	  • Windows Server 2022 Standard
	  • Windows Server 2022 Datacenter
	  • Windows Server 2019 Standard
	  • Windows Server 2019 Datacenter
	  • Windows Server 2019 Core
	  • Windows Server 2016 Datacenter
	  • Windows Server 2016 Standard
	  • Windows Server 2016 Core
	  • Windows Server 2012 Standard
	  • Windows Server 2012 R2 Standard
	  • Windows Server 2012 Core
	  • Novell eDirectory 8.8

AV Engine	• 7.00034
IPS Engine	• 7.01026

See also:

- Virtualization environments on page 18
- Language support on page 18
- SSL VPN support on page 19
- FortiExtender modem firmware compatibility on page 19

Virtualization environments

The following table lists hypervisors and recommended versions.

Hypervisor	Recommended versions
Citrix Hypervisor	• 8.2 Express Edition, CU1
Linux KVM	• Ubuntu 22.04.3 LTS • Red Hat Enterprise Linux release 9.4 • SUSE Linux Enterprise Server 12 SP3 release 12.3
Microsoft Windows Server	• Windows Server 2022
Windows Hyper-V Server	• Microsoft Hyper-V Server 2022
Open source XenServer	• Version 3.4.3 • Version 4.1 and later
VMware ESXi	• Versions 6.5, 6.7, 7.0, and 8.0.

Language support

The following table lists language support information.

Language support

Language	GUI
English	✓
Chinese (Simplified)	✓
Chinese (Traditional)	✓
French	✓
Japanese	✓
Korean	✓
Portuguese (Brazil)	✓
Spanish	✓

SSL VPN support

SSL VPN web mode

The following table lists the operating systems and web browsers supported by SSL VPN web mode.

Supported operating systems and web browsers

Operating System	Web Browser
Microsoft Windows 7 SP1 (32-bit & 64-bit)	Mozilla Firefox version 113 Google Chrome version 112
Microsoft Windows 10 (64-bit)	Microsoft Edge Mozilla Firefox version 113 Google Chrome version 112
Ubuntu 20.04 (64-bit)	Mozilla Firefox version 113 Google Chrome version 112
macOS Ventura 13.1	Apple Safari version 16 Mozilla Firefox version 103 Google Chrome version 111
iOS	Apple Safari Mozilla Firefox Google Chrome
Android	Mozilla Firefox Google Chrome

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

FortiExtender modem firmware compatibility

The following table lists the modem firmware file name and version for each FortiExtender model and its compatible geographical region.

FortiExtender model	Modem firmware image name	Modem firmware file on Support site	Geographical region
FEX-101F-AM	FEM_EM06A-22-1-1	FEM_EM06A-22.1.1-build0001.out	America
FEX-101F-EA	FEM_EM06E-22-01-01	FEM_EM06E-22.1.1-build0001.out	EU
	FEM_EM06E-22.2.2	FEM_EM06E-22.2.2-build0002.out	EU

FortiExtender model	Modem firmware image name	Modem firmware file on Support site	Geographical region
FEX-201E	FEM_06-19-0-0-AMEU	FEM_06-19.0.0-build0000-AMEU.out	America and EU
	FEM_06-19-1-0-AMEU	FEM_06-19.1.0-build0001-AMEU.out	America and EU
	FEM_06-22-1-1-AMEU	FEM_06-22.1.1-build0001-AMEU.out	America and EU
	FEM_06-22-1-2-AMEU	FEM_06-22.1.2-build0001-AMEU.out	America and EU
FEX-201F-AM	FEM_07A-22-1-0-AMERICA	FEM_07A-22.1.0-build0001-AMERICA.out	America
	FEM_07A-22-2-0-AMERICA	FEM_07A-22.2.0-build0002-AMERICA.out	America
FEX-201F-EA	FEM_07E-22-0-0-WRLD	FEM_07E-22.0.0-build0001-WRLD.out	World
	FEM_07E-22-1-1-WRLD	FEM_07E-22.1.1-build0001-WRLD.out	World
FEX-202F-AM	FEM_07A-22-1-0-AMERICA	FEM_07A-22.1.0-build0001-AMERICA.out	America
	FEM_07A-22-2-0-AMERICA	FEM_07A-22.2.0-build0002-AMERICA.out	America
FEX-202F-EA	FEM_07E-22-1-1-WRLD	FEM_07E-22.1.1-build0001-WRLD.out	World
FEX-211E	FEM_12-19-1-0-WRLD	FEM_12-19.1.0-build0001-WRLD.out	World
	FEM_12-19-2-0-WRLD	FEM_12-19.2.0-build0002-WRLD.out	World
	FEM_12-22-1-0-AMEU	FEM_12-22.0.0-build0001-AMEU.out	America and EU
	FEM_12-22-1-1-WRLD	FEM_12-22.1.1-build0001-WRLD.out	World
FEV-211F_AM	FEM_12_EM7511-22-1-2-AMERICA	FEM_12_EM7511-22.1.2-build0001-AMERICA.out	America
FEV-211F	FEM_12-22-1-0-AMEU	FEM_12-22.1.0-build0001-AMEU.out	World
FEX-211F-AM	FEM_12_EM7511-22-1-2-AMERICA	FEM_12_EM7511-22.1.2-build0001-AMERICA.out	America
FEX-212F	FEM_12-19-2-0-WRLD	FEM_12-19.2.0-build0002-WRLD.out	World
	FEM_12-22-1-1-WRLD	FEM_12-22.1.1-build0001-WRLD.out	World
FEX-311F	FEM_EM160-22-02-03	FEM_EM160-22.2.3-build0001.out	World
	FEM_EM160-22-1-2	FEM_EM160-22.1.2-build0001.out	World

FortiExtender model	Modem firmware image name	Modem firmware file on Support site	Geographical region
FEX-511F	FEM_RM502Q-21-2-2	FEM_RM502Q-21.2.2-build0003.out	World
	FEM_RM502Q-22-03-03	FEM_RM502Q-22.3.3-build0004.out	World
	FEM_RM502Q-22-04-04-AU	FEM_RM502Q-22.4.4-build0005_AU.out	Australia
	FEM_RM502Q-22-1-1	FEM_RM502Q-22.1.1-build0001.out	World
	FEM_RM502Q-22-2-2	FEM_RM502Q-22.2.2-build0002.out	World

The modem firmware can also be uploaded manually by downloading the file from the Fortinet Customer Service & Support site. The firmware file names are listed in the third column of the table.

To download the modem firmware:

1. Go to https://support.fortinet.com/Download/FirmwareImages.aspx.
2. From the *Select Product* dropdown, select *FortiExtender*.
3. Select the *Download* tab.
4. Click *MODEM-Firmware*.
5. Select the FortiExtender model and image name, then download the firmware file.

Resolved issues

The following issues have been fixed in version 7.6.2. To inquire about a particular bug, please contact Customer Service & Support.

GUI

Bug ID	Description
1092489	The `config system fortiguard > fortiguard-anycast` setting was changed to automatically disable when the FortiGuard page is shown on GUI.
1110382	Admin can log in to GUI (HTTPS) with password, even when *admin-https-pki-required* is enabled.

HA

Bug ID	Description
1108895	In an FGSP cluster, enabling and disabling `standalone-config-sync` results in the local `dev_base` being deleted and synchronized with the peer, which leads to the absence of the `dev_base`.

Intrusion Prevention

Bug ID	Description
1107445	Remove IPS diagnose command `diagnose ips cfgscript run`.

IPsec VPN

Bug ID	Description
1012615	IPsec VPN traffic is dropped after upgrading to version 7.4.3.
1073670	An `IkEd` crash on secondary causes IPsec client to reconnect.

SSL VPN

Bug ID	Description
1077157	FortiGate sends out expired server certificate for a given SSL VPN realm, even when the certificate configured in `virtual-host-server-cert` has been updated.
1101837	Insufficient session expiration in SSL VPN using SAML authentication.

System

Bug ID	Description
1102416	Cannot push `config sfp-dsl enable` and vectoring under interface.

User & Authentication

Bug ID	Description
1075207	fnbam may crash due to configuration of two wildcard-enabled remote admins in separate VDOMs.

VM

Bug ID	Description
1012000	When unicast HA setup has a large number of interfaces, FGT Hyper-V takes a long time to boot up.

Known issues

Known issues are organized into the following categories:

To inquire about a particular bug or report a bug, please contact Customer Service & Support.

New known issues

The following issues have been identified in version 7.6.2.

Hyperscale

Bug ID	Description
1108263	HA configurations are lost if `hw-sess-sync-dev` is configured with more interfaces than expected. (The expectation is two times the number of NP7 chips.)

Existing known issues

The following issues have been identified in a previous version of FortiOS and remain in FortiOS 7.6.2.

Endpoint Control

Bug ID	Description
1019658	On FortiGate, not all registered endpoint EMS tags are displayed in the GUI.
1038004	FortiGate may not display the correct user information for some FortiClient instances.

Firewall

Bug ID	Description
959065	On the *Policy & Objects* > *Traffic Shaping* page, when deleting or creating a shaper, the counters for the other shapers are cleared.

Bug ID	Description
990528	When searching for an IP address on the *Firewall Policy* page, the search/filter functionality does not return the expected results.
994986	The *By Sequence* view in the Firewall policy list may incorrectly show a duplicate implicit deny policy in the middle of the list. This is purely a GUI display issue and does not impact policy operation. The *Interface Pair View* and *Sequence Grouping View* do not have this issue.

FortiGate 6000 and 7000 platforms

Bug ID	Description
653335	SSL VPN user status does not display on the FortiManager GUI.
790464	After a failover, ARP entries are removed from all slots when an ARP query of single slot does not respond.
936320	When there is a heavy traffic load, there are no results displayed on any *FortiView* pages in the GUI.
950983	*Feature Visibility* options are visible in the GUI on a `mgmt-vdom`.
994241	On FortiGate 7000F using FGSP and FGCP, when TCP traffic takes an asymmetric path, the TCP ACK and data packets might be dropped in NP7.
998615	When doing a GUI-packet capture on FortiGate, the through-traffic packets are not captured.
1006759	After an HA failover, there is no IPsec route in the kernel.
1014826	SLBC does not function as expected with IPsec over TCP enabled.

FortiView

Bug ID	Description
1034148	The *Application Bandwidth* widget on the *Dashboard* > *Status* page does not display some external applications bandwidth data.

GUI

Bug ID	Description
853352	When viewing entries in slide-out window of the *Policy & Objects* > *Internet Service Database* page, users cannot scroll down to the end if there are over 100000 entries.
1047146	After a firmware upgrade, a VLAN interface used in IPsec, SSL VPN, or SD-WAN is not displayed on the interface list or the SD-WAN page and cannot be configured in the GUI.

Bug ID	Description
1047963	High Node.js memory usage when building FortiManager in Report Runner fails. Occurs when FortiManager has a slow connection, is unreachable from the FortiGate (because FMG is behind NAT), or the IP is incorrect.

HA

Bug ID	Description
851743	When running the `diag sys ha checksum cluster` command, a previous line result is added further down in the output instead of new line result when a FortiGate is configured with several VDOMs .

Hyperscale

Bug ID	Description
1030907	With a FGSP and FGCP setup, sessions do not show on the HA secondary when the FGSP peer is in HA.
1042011	On FortiGate, an login error message displays in the event log after completing an automation.
1093287	Using fixed-allocation IP Pools may cause NP7 NSS/PRP modules to become stuck, potentially disrupting traffic. Other PBA IP pools do not have this issue.
1013892	On FortiGate's in an HA pair, the npd process do not work as expected when trying to manually update the threat feed.

Intrusion Prevention

Bug ID	Description
1076213	FortiGate's with 4GB memory might enter conserve mode during the FortiGuard update when IPS or APP control is enabled. **Workaround**: Disable the `proxy-inline-ips` option under `config ips settings`.

IPsec VPN

Bug ID	Description
735398	On FortiGate, the IKE anti-replay does not log duplicate ESP packets when SA is offloaded in the event log.

Bug ID	Description
995912	After a firmware upgrade, some VPN tunnels experience intermittent signal disruptions causing traffic to be re-routed.
1012615	IPsec VPN traffic is dropped after upgrading to version 7.4.3.
1103754	Traffic is not forwarded with Ntrubo enabled and an IPsec VPN tunnel to FortiGate.
1042371	RADIUS authentication with EAP-TLS does not work as expected through IPsec tunnels.

Log & Report

Bug ID	Description
611460	On FortiOS, the *Log & Report* > *Forward Traffic* page does not completely load the entire log when the log exceeds 200MB.

Proxy

Bug ID	Description
1023054	After an upgrade on a 2GB FortiGate device, the firewall policy does not switch from *Proxy-based* to *Flow-based* in the *Inspection mode* field.
1035490	The firewall policy works with proxy-based inspection mode on FortiGate models with 2GB RAM after an upgrade. *Workaround*: After an upgrade, reboot the FortiGate.

REST API

Bug ID	Description
938349	Unsuccessful API user login attempts do not get reset within the time specified in `admin-lockout-threshold`.
993345	The router API does not include all ECMP routes for SD-WAN included in the `get router info routing-table` command.
1051870	After a firmware upgrade, some vlan interfaces attached to LAG interface are not displayed in the GUI.

Security Fabric

Bug ID	Description
1011833	FortiGate experiences a CPU usage issue in the `Node.js` daemon when there multiple administrator sessions running simultaneously.
1019844	In an HA configuration, when the primary FortiGate unit fails over to a downstream unit, the previous primary unit displays as being permanently disconnected.
1040058	The Security Rating topology and results does not display non-FortiGate devices.

Switch Controller

Bug ID	Description
961142	An interface in FortiLink is flapping with an MCLAG FortiSwitch using DAC on an OPSFPP-T-05-PAB transceiver.
1113304	FortiSwitch are offline after FortiGate is upgraded from 7.6.0 to 7.6.1 or later when LLDP configuration set to vdom/disable under the FortiLink interface. **Workaround**: In LLDP configuration, enable lldp-reception and lldp-transmission under the FortiLink interface, or rebuild the FortiLink interface.

System

Bug ID	Description
1103146	Packet capture duplicate entries on FortiGate.
1103617	Integrating an interface does not work when adding a new member into an existing interface or creating a new interface.
947982	On NP7 platforms, DSW packets are missing resulting in VOIP experiencing performance issues during peak times.
971466	FortiGateRugged 60 models may experience packet loss when directly connected to Cisco switch.
1041726	Traffic flow speed is reduced or interrupted when the traffic shaper is enabled.
1046484	After shutting down FortiGate, the system automatically boots up again.
1047085	The FortiOS GUI is unresponsive due to a CPU usage issue with the `csfd` and `node` processes.
1058256	On FortiGate, interfaces with DAC cables remain down after upgrading to version 7.4.4.

Upgrade

Bug ID	Description
1043815	Upgrading the firmware for a large number (100+) of FortiSwitch or FortiAP devices at the same time may cause performance issues with the GUI and some devices may not upgrade. **Workaround**: pace out the upgrade schedule and upgrade devices in smaller batches.
1104649	If a local-in policy, DoS policy, interface policy, multicast policy, TTL policy, or central SNAT map used an interface in version 7.4.5, 7.6.0 or any previous GA version that was part of the SD-WAN zone, these policies will be deleted or show empty values after upgrading to version 7.4.6 or 7.6.1. **Workaround**: After upgrading to 7.4.6 or 7.6.1 GA, users must manually recreate these policies and assign them to the appropriate SD-WAN zone.
1106072	The image file transfer between FortiManager and FortiGate may not work as expected when transferred by the FGFM tunnel.

User & Authentication

Bug ID	Description
802089	User groups from FortiManager are not synchronized across all units except the MBD.
1021719	On the *System* > *Certificates* page, the *Create Certificate* pane does not function as expected after creating a new certificate.
1082800	When performing LDAP user searches from the GUI against LDAP servers with a large number of users (more than 100000), FortiGate may experience a performance issue and not operate as expected due to the HTTPSD process consuming too much memory. User may need to stop the HTTPSD process or perform a reboot to recover. **Workaround**: Perform an LDAP user search using the CLI.

1112718	When RADIUS server has the require-message-authenticator setting disabled, The GUI RADIUS server dialogs *Test connectivity* and *Test user credentials* still check for the message-authenticator value and incorrectly fail the test with *missing authenticator* error message.
	`config user radius`
	`edit <radius server>`
	`set require-message-authenticator disable`
	`next`
	`end`
	This is only a GUI display issue and the end-to-end integration with RADIUS server should still work.
	Workaround: Confirm the connection to RADIUS server with the CLI command *diagnose test authserver radius <server> <method> <user> <password>*

Web Filter

Bug ID	Description
1040147	Options set in `ftgd-wf` cannot be undone for a web filter configuration.
1058007	Web filter custom replacement messages in group configurations cannot be edited in FortiGate.

WiFi Controller

Bug ID	Description
1083395	In an HA environment with FortiAPs managed by primary FortiGate, the secondary FortiGate GUI *Managed FortiAP* page may show the FortiAP status as offline if the FortiAP traffic is not routed through the secondary FortiGate. This is only a GUI issue and does not impact FortiAP operation.

Built-in AV Engine

AV Engine 7.00034 is released as the built-in AV Engine. Refer to the AV Engine Release Notes for information.

Built-in IPS Engine

IPS Engine 7.001026 is released as the built-in IPS Engine. Refer to the IPS Engine Release Notes for information.

Limitations

Citrix XenServer limitations

The following limitations apply to Citrix XenServer installations:

- XenTools installation is not supported.
- FortiGate-VM can be imported or deployed in only the following three formats:
  - XVA (recommended)
  - VHD
  - OVF
- The XVA format comes pre-configured with default configurations for VM name, virtual CPU, memory, and virtual NIC. Other formats will require manual configuration before the first power on process.

Open source XenServer limitations

When using Linux Ubuntu version 11.10, XenServer version 4.1.0, and libvir version 0.9.2, importing issues may arise when using the QCOW2 format and existing HDA issues.

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