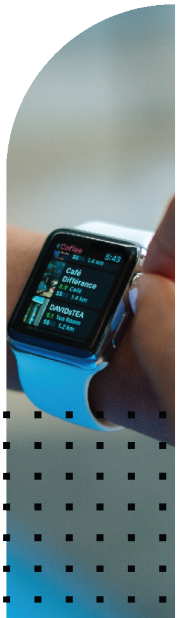
Release Notes

FortiAuthenticator 6.4.1



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May 12, 2023
FortiAuthenticator 6.4.1 Release Notes
23-641-763282-20230512

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Change log

Date	Change Description
2021-12-01	Initial release.
2021-12-07	Removed bug 756752 from Resolved issues on page 20.
2021-12-10	Updated Upgrade instructions on page 13.
2021-12-31	Updated Upgrade instructions on page 13.
2022-02-24	Updated Maximum values for VM on page 33.
2022-03-02	Added FortiAuthenticator Agent for Microsoft Windows 4.1 to Product integration and support on page 17.
2022-04-21	Removed bug 744940 from Known issues on page 26.
2023-05-12	Updated Upgrade instructions on page 13.

FortiAuthenticator 6.4.1 release

This document provides a summary of new features, enhancements, support information, installation instructions, caveats, and resolved and known issues for FortiAuthenticator 6.4.1, build 0958.

FortiAuthenticator is a user and identity management solution that provides strong authentication, wireless 802.1X authentication, certificate management, RADIUS AAA (authentication, authorization, and accounting), and Fortinet Single Sign-On (FSSO).

For additional documentation, please visit: https://docs.fortinet.com/product/fortiauthenticator/

Special notices

TFTP boot firmware upgrade process

Upgrading FortiAuthenticator firmware by interrupting the FortiAuthenticator boot process and installing a firmware image from a TFTP server erases the current FortiAuthenticator configuration and replaces it with factory default settings.

Monitor settings for GUI access

Fortinet recommends setting your monitor to a screen resolution of 1600x1200. This allows for all the objects in the GUI to be viewed properly without the need for scrolling.

Before any firmware upgrade

Save a copy of your FortiAuthenticator configuration before upgrading the firmware. From the administrator dropdown menu in the toolbar, go to **Restore/Backup**, and click **Download Backup File** to backup the configuration.

After any firmware upgrade

Clear your browser cache before logging in to the FortiAuthenticator GUI to ensure the pages display properly.

FortiAuthenticator does not support PEAP-MAB

FortiAuthenticator only supports MAB in clear-text and not the encapsulated MAB.

What's new

FortiAuthenticator version 6.4.1 includes the following enhancement:

Logging: Support for sending syslog messages through an encrypted tunnel

When creating or editing a syslog server in **Logging > Log Config > Syslog Servers**, there is a new **Secure Connection** pane for sending syslog messages to remote servers using a TLS connection.

Windows Agent: TOTP offline cache size increased

FortiAuthenticator Agent for Microsoft Windows now allows TOTP cache sizes up to 200 days. See Tokens and the *FortiAuthenticator Agent for Microsoft Windows Install Guide* on Fortinet Docs Library.

RADIUS service: Import clients through CSV file or REST API

RADIUS clients can be imported and assigned to RADIUS policies through a CSV file.

New `radiusclients`, `radiuspolicies`, and `radiuspolicyclient` endpoints available, see REST API Solutions Guide.

FSSO: Support for encrypted syslog sources

FortiAuthenticator now supports receiving messages from a syslog source over a TLS connection on the port 6514.

Network interfaces in **System > Network > Interfaces** have a new **Syslog over TLS (TCP/6514)** toggle in **Services** that allows receiving messages from a syslog source over TLS.

The syslog-based FSSO feature allows enabling or disabling encrypted syslogs:

- New **Allow TLS encryption** and **Require client authentication** toggle in **Enable Syslog SSO** when editing SSO configuration in **Fortinet SSO Methods > SSO > General**.

A new **TLS encryption** toggle when creating or editing a syslog source in **Fortinet SSO Methods > SSO > Syslog Sources**.

FortiTokens: Ability to report inactive tokens

You can now see the last used date and time for a FortiToken when editing a FortiToken in **Authentication > User Management > FortiTokens**.

A new last used column in **Authentication > User Management > FortiTokens**.

New `last_used_at` field is available in the `fortitokens` endpoint. See REST API Solutions Guide.

User Portal: Support for the SmartConnect Android application

FortiAuthenticator now supports the SmartConnect Android application in the captive and self-service user portals.

Android 11 allows the SmartConnect app to install user credential certificates for EAP-TLS and PEAP to allow for user authentication.

Android 11 restricts the SmartConnect app from installing global CA certificates. As of Android 11, these certificates have to be installed manually. A warning message appears in the SmartConnect app, which prompts to install certificates manually.

Support for EAP-MSCHAPv2

FortiAuthenticator now supports EAP-MSCHAPv2 authentication mechanism against a remote AD server.

FortiAuthenticator also supports multi-factor authentication over EAP-MSCHAPv2.

When creating or editing a RADIUS policy in **Authentication > RADIUS Service > Policies**, a new **EAP-MSCHAPv2** toggle is now available in the **Authentication type** tab, given that **Accept EAP** toggle is enabled in **Password/OTP authentication**.

New SAML IdP and Kerberos SSO toggles

When editing an interface in **System > Network > Interfaces**, new **SAML IdP** and **Kerberos SSO** toggles available in the **Services** pane.

Windows Agent: Emergency Offline Access

FortiAuthenticator now supports a new temporary token option that allows the use of emergency codes for offline end-users who find themselves without access to FortiToken, email, or SMS.

A new **Enable emergency codes** toggle and **Emergency codes valid for** option when editing the token policy settings in **Authentication > User Account Policies > Tokens**.

A new **Display emergency code** button that displays the emergency code from within a user account if FortiToken is provisioned for the account.

OpenID Connect

OpenID Connect (OIDC) provides an identity layer on top of the OAuth 2.0 protocol to verify end-user identity and obtain profile information. OIDC is a modern SSO protocol that is easier and more flexible to use than SAML.

OIDC authentication can be enabled for the OAuth client by configuring the relying party with an authorization code, policy, redirect URI, and OIDC claim(s).

OAuth Service in **Authentication** has been reorganized to include the following tabs:

- **General**- Configure general settings for OAuth.
- **Policies** - Create policies to use with OAuth authentication.
- **Relying Party** - Configure OAuth clients and OIDC claims.

New OIDC endpoints are now available. The `token` endpoint now expanded to include new fields that support the OIDC configuration. See REST API Solutions Guide.

Secure LDAP: Support multiple CAs

When creating or editing an LDAP Server in **Authentication > Remote Auth. Servers > LDAP**, a new **Trusted CA** toggle now allows you to specify multiple trusted CAs for secure connection to a remote LDAP server.

Import trusted CA certificates with certificate chain

Using the new **Learn Certificate** button in **Certificate Management > Certificate Authorities > Trusted CAs**, you can now extract a certificate chain from a TLS server and show its CA certificates by entering the host name/ IP address and the port number. You can then import CA certificates.

Self-service portal: Email templates for resetting password

New **Password Reset Email Subject** and **Password Reset Email Message** replacement messages in **Authentication > Portals > Replacement Messages**.

TACACS+: Stronger client secret values

You can now set stronger TACACS+ client secrets to include special characters: `!@#$%^&()_+\<>?./` when adding, editing, or importing TACACS+ clients.

`tacplusclients` endpoint now allows special characters for the `secret` field. See REST API Solutions Guide.

SMTP test window provides more accurate error information

Upon a failed SMTP test, FortiAuthenticator displays a message in the GUI to help troubleshoot the source of the issue.

For SMTP servers, FortiAuthenticator logs the source of the issue to **Logging > Log Access > Logs**.

Also, upon a failed SMTP send attempt, i.e., when not using the **Test Connection** button, FortiAuthenticator logs the source of the issue to **Logging > Log Access > Logs**.

RADIUS service: Return user group attributes on AD computer authentication

In the **RADIUS response** tab, when the **AD Computer Authentication Result** is successful and the user is not authenticated yet, you can now select between the following RADIUS attribute response options:

- When **Return User Group Attributes** is enabled, RADIUS attributes configured in the user groups that the computer is a member of are returned.
- **Return Additional Attributes**. .

SNMP: TACACS+ OIDs

FortiAuthenticator adds support for TACACS+ over SNMP which is equivalent to RADIUS.

When configuring SNMP settings in **System > Administration > SNMP**, there is a new **TACACS+ Authentication Client Table Nearly Full Trap Threshold (%)** field to adjust the TACACS+ SNMP trap threshold.

You can enable or disable TACACS+ NAS trap from within SNMP clients (SNMP v3 and SNMP v1/v2) using the new **TACAS+ NAS threshold exceeded** toggle.

OAuth service: Access token expiry

FortiAuthenticator now returns the remaining validity time for the OAuth2 access token in the `verify_token` endpoint.

A new `expires_in` field is available in the `verify_token` endpoint. See REST API Solutions Guide.

Built-in read-only admin profile

A new built-in read-only admin profile in **System > Administration > Admin Profiles**.

Additional system information via REST API

The following new fields are available in the `systeminfo` endpoint:

- `cpu`
- `disk`
- `disk_usage_detail`
- `firmware`
- `memory`
- `memory_usage_detail`

For information about the new fields, see REST API Solutions Guide.

Log out a session from the monitor page

FortiAuthenticator now allows manually logging out of IdP sessions using the new **Logoff All** and **Logoff Selected** buttons in **Monitor > Authentication > SAML IdP Session**.

SAML IdP: Support for multiple remote LDAP custom attributes

FortiAuthenticator now supports multiple values for a remote LDAP custom attribute in **Authentication > SAML IdP > Service Providers**.

Upgrade instructions

Back up your configuration before beginning this procedure. While no data loss should occur if the procedures below are correctly followed, it is recommended a full backup is made before proceeding and the user will be prompted to do so as part of the upgrade process.

For information on how to back up the FortiAuthenticator configuration, see the FortiAuthenticator Administration Guide.

Hardware and VM support

FortiAuthenticator 6.4.1 supports:

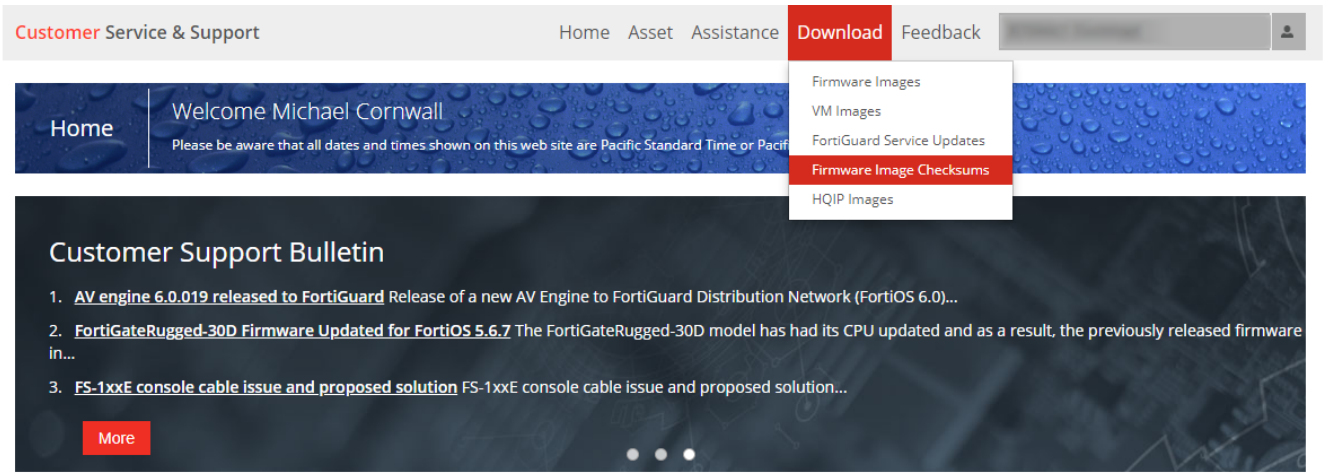
- FortiAuthenticator 200D
- FortiAuthenticator 200E
- FortiAuthenticator 300F
- FortiAuthenticator 400C
- FortiAuthenticator 400E
- FortiAuthenticator 800F
- FortiAuthenticator 1000D
- FortiAuthenticator 2000E
- FortiAuthenticator 3000D
- FortiAuthenticator 3000E
- FortiAuthenticator 3000F
- FortiAuthenticator VM (VMWare, Hyper-V, KVM, Xen, Azure, AWS, Oracle OCI, and Alibaba Cloud)

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 the Fortinet Support website.

Customer service and support image checksum tool



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

In the **Image File Name** field, enter the firmware image file name including its extension, then click **Get Checksum Code**.

Upgrading from FortiAuthenticator 4.x/5.x/6.x

FortiAuthenticator 6.4.1 build 0958 officially supports upgrades from previous versions by following these supported FortiAuthenticator upgrade paths:

- If currently running FortiAuthenticator 6.0.5 or older, first upgrade to 6.0.7, then upgrade to 6.4.1, else the following message will be displayed: `Image validation failed: The firmware image model number is different from the appliance's.`
- If currently running FortiAuthenticator 6.0.7, then upgrade to 6.4.1 directly.
- If currently running FortiAuthenticator between 6.1.0 and 6.2.0, first upgrade to 6.3.3, then upgrade to 6.4.1.
- If currently running FortiAuthenticator between 6.2.1 and 6.3.x, then upgrade to 6.4.1 directly.

When upgrading existing **KVM** and **Xen** virtual machines to FortiAuthenticator 6.4.1 from FortiAuthenticator 6.0.7, you must first increase the size of the virtual hard disk drive containing the operating system image (not applicable for AWS & OCI Cloud Marketplace upgrades). See Upgrading KVM / Xen virtual machines on page 15.

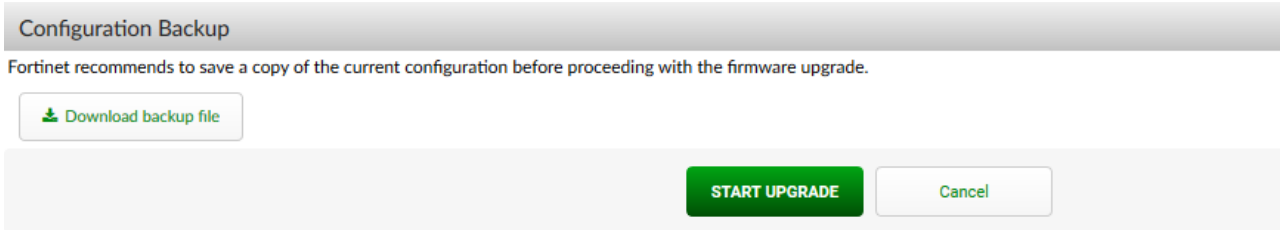
Upgrade to and from FortiAuthenticator 6.0.6 is not recommended.

Firmware upgrade process

First, back up your configuration, then follow the procedure below to upgrade the firmware.

Before you can install FortiAuthenticator firmware, you must download the firmware image from the Fortinet Support website, then upload it from your computer to the FortiAuthenticator unit.

1. Log in to the Fortinet Support website. In the **Download** section of the page, select the **Firmware Images** link to download the firmware.
2. To verify the integrity of the download, go back to the **Download** section of the login page and click the **Firmware Image Checksums** link.
3. Log in to the FortiAuthenticator unit's web-based manager using the **admin** administrator account.
4. Upload the firmware and begin the upgrade.
   When upgrading from FortiAuthenticator 6.0.4 and earlier:
   a. Go to **System > Dashboard > Status**.
   b. In the **System Information** widget, in the **Firmware Version** row, select **Upgrade**. The **Firmware Upgrade or Downgrade** dialog box opens.
   c. In the **Firmware** section, select **Choose File**, and locate the upgrade package that you downloaded.
   When upgrading from FortiAuthenticator 6.1.0 or later.
   a. Click on the administrator name in the upper-right corner of the GUI to display the dropdown menu, and click **Upgrade**.
   b. In the **Firmware Upgrade or Downgrade** section, select **Upload a file**, and locate the upgrade package that you downloaded.
5. Select **OK** to upload the file to the FortiAuthenticator.
   Your browser uploads the firmware file. The time required varies by the size of the file and the speed of your network connection. When the file transfer is complete, the following message is shown:



   It is recommended that a system backup is taken at this point. Once complete, click **Start Upgrade**.
   Wait until the unpacking, upgrade, and reboot process completes (usually 3-5 minutes), then refresh the page.

Due to a known issue in 6.0.x and earlier releases, the port5 and port6 fiber ports are inverted in the GUI for FAC-3000E models (i.e. port5 in the GUI corresponds to the physical port6 and vice-versa).

This is resolved in 6.1.0 and later, however, the upgrade process does not swap these configurations automatically. If these ports are used in your configuration during the upgrade from 6.0.x to 6.1.0 and later, you will need to physically swap the port5 and port6 fibers to avoid inverting your connections following the upgrade.

Upgrading KVM / Xen virtual machines

When upgrading existing KVM and Xen virtual machines from FortiAuthenticator 6.0.7 to 6.4.1, it is necessary to manually increase the size of the virtual hard disk drive which contains the operating system image before starting the upgrade. This requires file system write-access to the virtual machine disk drives, and must be performed while the virtual machines are in an offline state, fully powered down.

If your virtual machine has snapshots, the resize commands detailed below will exit with an error. You must delete the snapshots in order to perform this resize operation. Please make a separate copy of the virtual disk drives before deleting snapshots to ensure you have the ability to rollback.

Use the following command to run the resize on KVM:

```
qemu-img resize /path/to/fackvm.qcow2 1G
```

Use the following command to run the resize on Xen:

```
qemu-img resize /path/to/facxen.qcow2 1G
```

After this command has been completed, you may proceed with the upgrade from 6.0.7 to 6.4.1

Recovering improperly upgraded KVM / Xen virtual machines

If the upgrade was performed without completing the resize operation above, the virtual machine will fail to properly boot, instead displaying many **initd** error messages. If no snapshots are available, manual recovery is necessary.

To recover your virtual machine, you will need to replace the operating system disk with a good copy, which also requires write-access to the virtual hard disks in the file system while the virtual machines are in an offline state, fully powered down.

To recover an improperly upgraded KVM virtual machine:

1. Download the 6.0.7 GA ZIP archive for KVM, **FAC_VM_KVM-v6-build0059-FORTINET.out.kvm.zip**.
2. Extract the archive, then replace your virtual machine's **fackvm.qcow2** with the one from the archive.
3. Execute the following command:
   ```
   qemu-img resize /path/to/fackvm.qcow2 1G
   ```

To recover an improperly upgraded Xen virtual machine:

1. Download the 6.0.7 GA ZIP archive for Xen, **FAC_VM_XEN-v6-build0059-FORTINET.out.xen.zip**.
2. Extract the archive, then replace your virtual machine's **facxen.qcow2** with the one from the archive.
3. Execute the following command:
   ```
   qemu-img resize /path/to/facxen.qcow2 1G
   ```

Product integration and support

Web browser support

The following web browsers are supported by FortiAuthenticator 6.4.1:

- Microsoft Edge version 96
- Mozilla Firefox version 94
- Google Chrome version 95

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

FortiOS support

FortiAuthenticator 6.4.1 supports the following FortiOS versions:

- FortiOS v7.0.x
- FortiOS v6.4.x
- FortiOS v6.2.x
- FortiOS v6.0.x

Fortinet agent support

FortiAuthenticator 6.4.1 supports the following Fortinet Agents:

- FortiClient v.5.x, v.6.x for Microsoft Windows and macOS (Single Sign-On Mobility Agent)
- FortiAuthenticator Agent for Microsoft Windows 2.6, 3.7, 3.8, 4.0*, and 4.1*.
- FortiAuthenticator Agent for Outlook Web Access 2.2
- FSSO DC Agent v.5.x
- FSSO TS Agent v.5.x

Other Agent versions may function correctly, but are not supported by Fortinet.

For details of which operating systems are supported by each agent, please see the install guides provided with the software.

*FortiAuthenticator Agent for Microsoft Windows 4.0 and above required to support emergency offline access. Also, FortiAuthenticator Agent for Microsoft Windows below 4.0 compatible for all other features.

Virtualization software support

FortiAuthenticator 6.4.1 supports:

- VMware ESXi / ESX 6/7
- Microsoft Hyper-V 2010 and Hyper-V 2016
- Linux Kernel-based Virtual Machine (KVM) on Virtual Machine Manager and QEMU 2.5.0
- Xen Virtual Machine (for Xen HVM)
- Nutanix
- Amazon AWS
- Microsoft Azure
- Oracle OCI
- Alibaba Cloud

Support for HA in Active-Passive and Active-Active modes has not been confirmed on the FortiAuthenticator for Xen VM at the time of the release.

See FortiAuthenticator-VM on page 19 for more information.

Third-party RADIUS authentication

FortiAuthenticator uses standards based RADIUS for authentication and can deliver two-factor authentication via multiple methods for the greatest compatibility:

- RADIUS Challenge Response - Requires support by third party vendor.
- Token Passcode Appended - Supports any RADIUS compatible system.

FortiAuthenticator should therefore be compatible with any RADIUS capable authentication client / network access server (NAS).

FortiAuthenticator-VM

For information about FortiAuthenticator-VM deployments and system requirements, see the VM installation guide on the Fortinet Docs Library.

Resolved issues

The resolved issues listed below may not list every bug that has been corrected with this release. For inquiries about a particular bug, please visit the Fortinet Support website.

Bug ID	Description
758522	SP server certificate when expired produces a server 500 when trying to edit the SP configuration.
744936	Yubikey third party token failed authentication with "invalid token" error after FortiAuthenticator upgrades to version 6.4.0.
742360	Remote user sync not reflecting LDAP user's OU change.
758011	Logout from SAML FSSO portal is generating signature validation error and 403 forbidden upon re-authentication.
749761	FortiAuthenticator did not update user group info after sync user from LDAP server.
739254	Uploading CRL on LB secondary FortiAuthenticator causes GUI crash.
754239	LB secondary not syncing when we failover to the secondary FortiAuthenticator.
755884	History password policy not working.
754589	Push Service does not recognize the realm from the FortiAuthenticator agent.
745679	"Mandatory password and OTP" setting not enforcing OTP on unimported remote users.
743480	User sync rule now updates FortiToken assignment if a manual change occurs after initial sync.
751605	Timezone 63 Darwin shows time 1 hour ahead.
753910	Users Audit export: comma separated displayname shifts the cells/fields to the right.
756798	Self-service portal "Change Password" button returns 403 Forbidden error for remote users.
744321	Mobile FortiToken and SMS tokens log event from a scheduled syncing of remote LDAP users.
731626	Limit of 64 characters in SAN DNS field for CSR/Certificate creation.
611922	Improve SCEP grid layout.
735782	Alcatel RADIUS VSA dictionary needs to be updated.
755539	User lookup triggers internal server error 500 for users with two or more IdP sessions.
670317	Not possible to resize/change columns width in log table.
712251	Column resize or sort does not work properly in tables of FortiAuthenticator.
748818	SCEP and device enrollment does not work.
752935	500 internal server error when using unknown email address for password reset.
744768	FortiAuthenticator not logging LDAP group membership changes.
741495	When trying to import users from FortiGate conf to FortiAuthenticator v6.4.

Bug ID	Description
729674	FortiToken license status on LB nodes shows unknown.
748270	IdP proxy scenario with local AD for group membership does not work.
741357	Unable to download raw log.
730640	When signing a CSR via SCEP, FortiAuthenticator returns "Unable to sign request, Unable to find a unique name".
741332	FortiToken email activation sent to user again when LDAP sync runs after the timeout of token activation (user should stay disabled).
744916	Sort by name the sponsor list in the self-registration guest portal.
737727	Change in the password complexity rule is not taking effect.
737078	Private IPv6 address added to SSO list instead of public IPv6 when received from a RADIUS accounting source.
706998	GUI crashes during password recovery using E-mail address method if the E-mail is not associated with any user account.
694599	Certificate sync does not work from Master to LB Peer/Nodes.
760580	Deleting an unused group gives "500 internal server error".
723065	HA connection status is still showing connected even the Primary FortiAuthenticator is already shutdown.
747259	FSAE is taking high CPU.
711940	Raid widget is showing wrong status.
685295	Implement correct handling of VM license in case of configuration conversion.
733788	FortiAuthenticator Agent does not support UPN username format (as imported to the FortiAuthenticator).
721189	SMS : No update on number of sent message on the dashboard.
738349	SAML querying the LDAP when the user is admin instead of looking for the user locally on remote LDAP users.
709395	High CPU utilization by wmid process.
711721	Groups sorting differences when importing LDAP groups in SSO groups and FortiGate filtering.
756786	Guest portal authentication request failed with Cisco WLC.
754474	SAML- SP Login page does not present the Done button in OSX CNA.
586851	http of the FortiAuthenticator cannot be closed.
752572	Windows machine login caching not working and breaking user + machine authentication RADIUS policy condition.
752954	SAML SP ACS URL misconfig returns a Server 500 vs 403 and the log for SP config mismatch.
751445	Saving LDAP server config produces: Please submit 0 or fewer forms.

Bug ID	Description
748487	FortiAuthenticator SAML SP requires at least 1 attribute in received SAML assertions from the remote IdP.
731175	Provide skeleton language pack.
746411	SMTP mail: failed to start session with the "Operation now in progress" error.
632248	Unable to provide publisher details/assign code signing certificate to a Smart Connect profile.
691009	FortiAuthenticator-VM 6.0.4 stops authenticating and GUI freezes until reboot is applied.
748560	FortiAuthenticator active-passive cluster plus load-balancing node does not sync properly.
752114	LDAP group query parsing error.
742715	"The username is in use and this user cannot be made into an administrator" error.
748187	EAP-TLS policy ignores group filter for cert user, cert user can authenticate even if it is not a member of the group.
746538	When applying the OpenLDAP template the out of the box User Object class does not find any user.
742775	Wrong message when user inputs incorrect email address or an incorrect username.
730474	FortiAuthenticator IdP proxy fails to proxy SAML assertions received from remote IdP when the User Attribute with same name exists.
708384	SAML IdP proxy session not showing and unable to log out from an external IdP.
756657	Error while changing HA password of Load Balancer node with HA enabled.
752752	LB + GUI local service certificate restrictions preventing reconfiguration.
731442	Case sensitive remote RADIUS username does not work well.
758407	SP metadata import causes GUI index error.
752730	RADIUS auth fails with invalid user if temporary token type = sms but no mobile number.
756154	Hide self-service portal token registration options when all are disabled.
754134	iOS 14 and iPhone 13 Safari browser: Error displayed on FIDO auto-start after password authentication.
752749	Remote LDAP server page loads incredibly slowly when many imported users exist.
755111	Issue with auto-redirect on HA administration page when enabling HA for load balancer role.
735940	Unable to restart radiusd in debug mode from FortiAuthenticator GUI debug tab after CSP changes for JS.
753040	HA status page should show "Name" of LB nodes in Cluster + LB mode.
752732	Admin trusted hosts applied to SAML auths, not just admin GUI.
742657	Test SMS phone number is not initialized.
748148	ubkey self-provisioning is broken.
733585	No log for policy priority change.

Bug ID	Description
740201	User CSV import does group database check once per record.
746096	Upper case is not accepted for local users.
706422	LB should not delete certificates if they are used by config_setting table but not synced.
744732	FSSO eventlog polling fail for machine account ending with $.
744505	Unable to see top row title of replacement messages.
739528	Certificate CN validation gives wrong error.
752755	Customized SAML Token Login page's pre-existing pollTokenAuthResult JS broken after upgrade to 6.4.0.
742719	CPU usage 100% after clicking LDAP server in GUI in a customer setup (and GUI timeout).
755701	ESX deploy script.
753032	IdP logins for SP throwing SQL errors on missing session.
753060	User simultaneously created duplicate IdP session - resulted in broken session.
752753	System Access inaccessible if web certificate /CA are missing.
554763	Frequent CSRF errors when using HTTP authentication.
752747	LDAP sync appears to be updating every user record, including unmodified ones.
750732	Login activity not relayed from LB nodes to Master (for user expiry, etc).
740202	Better error-reporting when trying to restore a config which is for a different model.
735652	Unnecessary deletes on load-balancer causes really long re-sync delays.
752242	Logs: FortiAuthenticator should log details when FIDO registration fails.
753921	Change label wording for "Pre-Login Services "==>" FIDO Revocation".
752226	FIDO: "Clear all Keys" should delete the keys.
744134	FortiAuthenticator should show "FIDO" in the token column of user page if user has registered a FIDO token.
751543	FTC- user_ip field in auth request is using Country value instead of IP.
744287	OpenSSL 1.1.1l security fixes -- August 2021.
747232	Pillow--- Precaution upgrade.
718365	HA Cluster not able to access management port IP.
739187	REST API authentication for remote user with upper case should not return 401.
758164	Remote RADIUS user case sensitivity is not working properly.
736062	PCI enabled FIDO authentication portal does not work with FIDO user.

Bug ID	Description
737640	Sync rule with multiple OTP assignment methods fails to sync users over if they are missing any one of the LDAP attributes.
745963	Unable to retrieve FIDO token 500 internal server error.
752616	Rephrase label "Every configured password and OTP factors".
576467	Request-URI too long error when we try to export or E-mail large amounts of newly created guest users.
558658	Rephrase timeout error message for timeout in deleting FTC user.
732139	Windows Event Log Sources JavaScript Error.
744577	Cannot import AD user groups as SSO Groups that have '+' in their names.
734462	Extraneous "No search results" message appears under RADIUS Attributes section in user group page.
602248	Migrating a user that already exists causes 500 internal error.
743645	Cannot change the name of local users realm.
739542	Remote RADIUS users with duplicate name REST API call cause 500 errors.
603411	Exporting guest users phone number format incorrect.
736652	New self service portal does not prompt for token resync, allows access with drifted OTP (when within configured window).
734474	LDAP users are able to enable security question through Self-Service portal without actually setting a security question.
732406	Editing security question results in duplicate UI in the pop-up.
731214	500 Internal server error when end user has duplicate certificate bindings.
680974	"Forgot password" option does not work on portal when user is temporary locked.
736020	"None" option for token assignment missing in self-service portal MFA page.
736017	Revoked FIDO token should display time in local time and not UTC.
737638	Missing username in Oauth Request causes 500 server error.
734475	"Internal Server Error" when local user enables security question without setting the security question through captive portal.
579174	FortiToken mobile for a remote radius user on the FortiAuthenticator server and also on the FortiAuthenticator client fails to work.
712166	SCEP gives wrong validation message if "Renewal Days" expiry is left empty.
739570	Unable to create RADIUS attribute matching when creating a RADIUS policy.
734034	Cannot see MAC devices limit in portals settings for Firefox.
734892	FIDO popup message when saving user local information.
758463	FIDO key registration failing first try on iOS 15.1.

Bug ID	Description
761747	Force password change not working when FIDO is enabled in portal policy.
751208	FortiAuthenticator cannot support "mschapv2" as password encoding format for the RADIUS client.
736670	api/v1/ssoauth/ API request returns 500 internal error occassionally.
749559	Windows AD computer authentication option missing from RADIUS policies.
743629	Remote RADIUS user takes longer than 30 sec to verify the deny process.
744073	FortiGate fails to get FSSO list from FortiAuthenticator if the login user group belongs to OU with special characters like +EU.
701758	Problem setting static IP address on a FortiAuthenticator-VM installed on a XenServer.
761875	In the captive portal, when a wrong token code is entered, FortiAuthenticator does not display any error message and just redirects to the login page.
763503	Remote user sync rule does not work with email/FTC 2FA.
762263	PCI mode's behaviour for user without FIDO enabled is incorrect.
762268	Password change not working for remote LDAP users.
603510	Memory usage is High.
763803	LB sync is broken for MAC devices if it is associated to a non-synced user.
746715	Optimize introduction of Load Balancing node(s) to an A-A Cluster to provide high availability.
760305	CLI's "exec ha-rebuild" does not work; cannot find required binaries in PATH.

Known issues

This section lists the known issues of this release, but is not a complete list. For inquires about a particular bug, please visit the Fortinet Support website.

Bug ID	Description
764250	Bug in self-registration of tokens and SMS registration cannot be disabled, although the option is available.
764256	FSSO - LDAP user/group lookup is broken by addition of remote LDAP for computer-based authentication.
763568	The timestamp of the account status for lockout is Greenwich Mean Time 00:00 regardless of system time.
752627	Token transfer fails if includes deprovisioned token(registration id = null) and FortiAuthenticator throws an unknown error.
759691	FSSO self-service portal does not create FSSO session upon end user login.
706701	FortiAuthenticator cluster is inconsistently accessible via HA interfaces from outside the HA subnet.
746567	Importing Local Users from CSV - FortiAuthenticator LB shows 'In Sync with Anomalies'.
745497	Kerberos not working for AES.
676985	Cannot import all FTK hardware tokens from the same purchase order; need to add them all manually.
665384	HA failover does not work reliably after maintenance mode is disabled on the high priority node.
754943	FortiAuthenticator users certs marked as revoked even after expiry date. Deleting is prohibited for some and it produces browser's console errors.
756782	FortiAuthenticator GUI cannot show how many users on every group.
758516	FortiAuthenticator HA: cluster out of sync if custom RADIUS dictionary is uploaded; auth breaks.
757968	/api/v1/pushauth/: the processing of the response is delayed.
764147	Cloud-init: DHCP client stays resident rather than exiting after boot as intended.
764092	Oauth setting permissions are missing.
763026	No popup error if HA table mismatched.
746405	LB HA primary locked SQL database around the same time the disk load-balancer became full.
761702	Unable to properly config postgres for memory/cache if config backup is used.
764179	Unable to change password of remote user unless imported in FortiAuthenticator.
762262	Password reset does not work for remote LDAP user if the password contains 6 characters or less.
763341	Dump when adding LDAP uid to a uid.
690126	HA cluster with load balancer initial setup causes secondary cluster member to crash.

Bug ID	Description
506112	This post REST API call fails to activate the FortiGuard messaging license.
613164	Google Workspace open LDAP crashes when we try to change password.
761880	Trying to get OAuth authorization code for a user with a cloud FortiToken causes django to crash.
761482	FIDO2 authentication not compatible with Apple's WiFi popup.
755752	Power supplies show voltage input fault on both CLI and GUI.
763997	Token challenge not sent to remote RADIUS server when TACACS+ is used with LDAP realm+ chained token.
751108	FortiAuthenticator does not support admin OIDs from FORTINET-CORE-MIB properly.
762203	FSSO Server restart takes too long when global pre-filter gets modified.
761292	Azure remote IdP authentication fails if FortiAuthenticator FQDN contains upper case.
676532	When FortiAuthenticator has a RADIUS client set as subnet; RADIUS accounting disconnect messages are not sent.
758008	FortiAuthenticator joining domain and using the incorrect domain name (DNS) if the name is the same in several LDAP servers.
749422	REST API script is unable to modify user's info when yubikey is assigned.
757460	Enable Django auto-translation for any end-user pages.
756777	Incorrect order of the fields displayed on change_password_remote page for remote users.
566145	Usage Profile "TIME USAGE=Time used" is not triggering COA or a disconnect request to FortiGate.
750134	FortiAuthenticator as LDAP server cannot export admin users from local user base.
748862	Read-only admin profile cannot view local/remote users; error 500.
655350	The lockout policy does not appear to apply to username/token submissions to the /auth API endpoint.
646299	Nutanix AHV KVM based Hypervisor- upgrading FortiAuthenticator from 6.0.4 to 6.1.x fails and hangs on "Waiting for Database".
643810	CLI restore-admin command needs improvement.
638374	SCEP - Encryption/hash compatibility with clients.
637028	SSL connection failed when the certificate expired issue is not explicit enough.
745433	CLI 'execute backup config ftp' upload problem when a path is provided.
677932	SCEP returns 200 on bad requests.
745419	CLI 'execute backup config tftp' (also ftp) with encryption password does not result in encrypted backup.
620127	Changing from maint-mode-no-sync to maint-mode-sync does not appear to restore syncing.
757516	Local user CSV export does not handle commas.
646764	CLI "get disk *" command fails on KVM.

Bug ID	Description
506543	500k+ users- Secondary's SNMP SQL query to obtain user count is obnoxiously slow (postgres needs vacuum full).
742722	Remove SSO on legacy self-service portal.
752408	Seek confirmation from FortiAuthenticator admin when restoring configuration via GUI.
752409	Redirect FortiAuthenticator to a new IP when admin changes the IP through which s/he is accessing it in a browser.
516357	LB - Toggling LB off and back on in an existing cluster can impact availability for hours/days.
586813	Send SNMP trap when active HA master detects that passive unit stopped syncing.
725800	IAM username validation not consistent in REST API.
733323	PCI DSS 2FA shows different page for user that does not exist.
733028	404 Not Found when we Resend email or SMS Message.
723677	Failed auth after changing port on secure LDAP server locks radiusd and prevents it from being killed.
561506	RADIUS auths fail if no port on FortiAuthenticator is assigned an IPv4 address.
674164	Logging into the CLI with incorrect password on the HA secondary gives bunch of SQL errors.
689458	HA cluster changing secret on primary to match secondary causes the webserver to crash on the secondary.
550802	Data persistence for authentication activity widget.
763973	Sponsor admin profile should be read-only.
746611	RADIUS authentication delay causes 2FA failure.

Maximum values for hardware appliances

The following table lists the maximum number of configuration objects per FortiAuthenticator appliance that can be added to the configuration database for different FortiAuthenticator hardware models.

The maximum values in this document are the maximum configurable values and are not a commitment of performance.

Feature		Model						
		200E	300F	400E	800F	1000D	2000E	3000E
System								
Network	Static Routes	50	50	50	50	50	50	50
Messages	SMTP Servers	20	20	20	20	20	20	20
	SMS Gateways	20	20	20	20	20	20	20
	SNMP Hosts	20	20	20	20	20	20	20
Administration	Syslog Servers	20	20	20	20	20	20	20
	User Uploaded Images	40	90	115	415	515	1015	2015
	Language Files	50	50	50	50	50	50	50
Realms		20	60	80	320	400	800	1600
Authentication								
General	Auth Clients (NAS)	166	500	666	2666	3333	6666	13333

Feature		Model						
		200E	300F	400E	800F	1000D	2000E	3000E
	Users (Local + Remote)[1]	500	1500	2000	8000	10000	20000	40000
	User RADIUS Attributes	1500	4500	6000	24000	30000	60000	120000
	User Groups	50	150	200	800	1000	2000	4000
	Group RADIUS Attributes	150	450	150	2400	600	6000	12000
	FortiTokens	1000	3000	4000	16000	20000	40000	80000
	FortiToken Mobile Licenses[2]	200	200	200	200	200	200	200
	LDAP Entries	1000	3000	4000	16000	20000	40000	80000
	Device (MAC-based Auth.)	2500	7500	10000	40000	50000	100000	200000
	RADIUS Client Profiles	500	1500	2000	8000	10000	20000	40000
	Remote LDAP Servers	20	60	80	320	400	800	1600
	Remote LDAP Users Sync Rule	50	150	200	800	1000	2000	4000
	Remote LDAP User Radius Attributes	1500	4500	6000	24000	30000	60000	120000
FSSO & Dynamic Policies								

Feature		Model						
		200E	300F	400E	800F	1000D	2000E	3000E
FSSO	FSSO Users	500	1500	2000	8000	10000	20000	200000[3]
	FSSO Groups	250	750	1000	4000	5000	10000	20000
	Domain Controllers	10	15	20	80	100	200	400
	RADIUS Accounting SSO Clients	166	500	666	2666	3333	6666	13333
	FortiGate Services	50	150	200	800	1000	2000	4000
	FortiGate Group Filtering	250	750	1000	4000	5000	10000	20000
	FSSO Tier Nodes	5	15	20	80	100	200	400
	IP Filtering Rules	250	750	1000	4000	5000	10000	20000
Accounting Proxy	Sources	500	1500	2000	8000	10000	20000	40000
	Destinations	25	75	100	400	500	1000	2000
	Rulesets	25	75	100	400	500	1000	2000
Certificates								
User Certificates	User Certificates	2500	7500	10000	40000	50000	100000	200000
	Server Certificates	50	150	200	800	1000	2000	4000
Certificate Authorities	CA Certificates	10	10	10	50	50	50	50
	Trusted CA Certificates	200	200	200	200	200	200	200
	Certificate Revocation Lists	200	200	200	200	200	200	200
SCEP	Enrollment Requests	2500	7500	10000	40000	50000	100000	200000

[1] Users includes both local and remote users.

[2] **FortiToken Mobile Licenses** refers to the licenses that can be applied to a FortiAuthenticator, not the number of FortiToken Mobile instances that can be managed. The total number is limited by the FortiToken metric.

[3] For the 3000E model, the total number of concurrent SSO users is set to a higher level to cater for large deployments.

Maximum values for VM

The following table lists the maximum number of configuration objects that can be added to the configuration database for different FortiAuthenticator virtual machine (VM) configurations.

The maximum values in this document are the maximum configurable values and are not a commitment of performance.

The FortiAuthenticator-VM is licensed based on the total number of users and licensed on a stacking basis. All installations must start with a FortiAuthenticator-VM Base license and users can be stacked with upgrade licenses in blocks of 100, 1,000, 10,000 and 100,000 users. Due to the dynamic nature of this licensing model, most other metrics are set relative to the number of licensed users. The **Calculating metric** column below shows how the feature size is calculated relative to the number of licensed users for example, on a 100 user FortiAuthenticator]-VM Base License, the number of auth clients (RADIUS and TACACS+) that can authenticate to the system is:

100 / 3 = 33

Where this relative system is not used e.g. for static routes, the **Calculating metric** is denoted by a "**-**". The supported figures are shown for both the base VM and a 5000 user licensed VM system by way of example.

Feature		Model			
		Unlicensed VM	Calculating metric	Licensed VM (100 users)	Example 5000 licensed user VM
System					
Network	Static Routes	2	50	50	50
Messaging	SMTP Servers	2	20	20	20
	SMS Gateways	2	20	20	20
	SNMP Hosts	2	20	20	20
Administration	Syslog Servers	2	20	20	20
	User Uploaded Images	19	Users / 20	19 (minimum)	250
	Language Files	5	50	50	50
Authentication					
General	Auth Clients (RADIUS and TACACS+)	3	Users / 3	33	1666

Feature		Model			
		Unlicensed VM	Calculating metric	Licensed VM (100 users)	Example 5000 licensed user VM
User Management	Authentication Policy (RADIUS and TACACS+)	6	Users	100	5000
	Users (Local + Remote)[1]	5	**********	100	5000
	User RADIUS Attributes	15	Users x 3	300	15000
	User Groups	3	Users / 10	10	500
	Group RADIUS Attributes	9	User groups x 3	30	1500
	FortiTokens	10	Users x 2	200	10000
	FortiToken Mobile Licenses (Stacked) [2]	3	200	200	200
	LDAP Entries	20	Users x 2	200	10000
	Device (MAC-based Auth.)	5	Users x 5	500	25000
	Remote LDAP Servers	4	Users / 25	4	200
	Remote LDAP Users Sync Rule	1	Users / 10	10	500
	Remote LDAP User Radius Attributes	15	Users x 3	300	15000
FSSO & Dynamic Policies					

Feature		Model			
		Unlicensed VM	Calculating metric	Licensed VM (100 users)	Example 5000 licensed user VM
FSSO	FSSO Users	5	Users	100	5000
	FSSO Groups	3	Users / 2	50	2500
	Domain Controllers	3	Users / 100 (min=10)	10	50
	RADIUS Accounting SSO Clients	10	Users	100	5000
	FortiGate Services	2	Users / 10	10	500
	FortiGate Group Filtering	30	Users / 2	50	2500
	FSSO Tier Nodes	3	Users /100 (min=5)	5	50
	IP Filtering Rules	30	Users / 2	50	2500
	FSSO Filtering Object	30	Users x 2	200	10000
Accounting Proxy	Sources	3	Users	100	5000
	Destinations	3	Users / 20	5	250
	Rulesets	3	Users / 20	5	250
Certificates					
User Certificates	User Certificates	5	Users x 5	500	25000
	Server Certificates	2	Users / 10	10	500
Certificate Authorities	CA Certificates	3	Users / 20	5	250
	Trusted CA Certificates	5	200	200	200
	Certificate Revocation Lists	5	200	200	200
SCEP	Enrollment Requests	5	Users x 5	500	25000

[1] Users includes both local and remote users.

[2] **FortiToken Mobile Licenses** refers to the licenses that can be applied to a FortiAuthenticator, not the number of FortiToken Mobile instances that can be managed. The total number is limited by the FortiToken metric.

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