

Web Policy Agent Release Notes

Version 3.3

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Abstract

Notes covering prerequisites, fixes, known issues for OpenAM web policy agents. OpenAM provides open source Authentication, Authorization, Entitlement and Federation software.



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Chapter 1

Web Policy Agents 3.3

1.1. What's New

1.1.1. Major New Features in Web Policy Agents 3.3.0

Important

This release contains fixes that resolve security issues within web policy agents. It is strongly recommended that you update to this release to make your deployment more secure, and to take advantage of important functional fixes. ForgeRock customers can contact support for help and further information.

- All of the web policy agents have been updated to include support for Internet Protocol version 6 (IPv6) support, in addition to support for IPv4.
- Web policy agents now encrypt the value of the `com.sun.identity.agents.config.certdb.password` property (OPENAM-2479).
- Web policy agents debug logs now show the full REST URL accessed during the bootstrap process (OPENAM-2397).
- Web policy agents can perform naming URL validation during the bootstrap phase, and can fail over from one OpenAM service to another (OPENAM-1258, OPENAM-1270). Configure these capabilities by using the following bootstrap properties.

`com.forgerock.agents.ext.url.validation.default.url.set`

Indicates order of service URLs for failover

`com.forgerock.agents.ext.url.validation.level`

Controls the extent of naming URL validation

`com.forgerock.agents.ext.url.validation.ping.interval`

Sets seconds between validation requests against the naming URL

`com.forgerock.agents.ext.url.validation.ping.miss.count`

Sets threshold of validation failures after which to fail over

com.forgerock.agents.ext.url.validation.ping.ok.count

Sets threshold of validation successes after which to fail back to the first URL in the `default.url.set` list

See Section 1.1, "Bootstrap Configuration Properties" in the *OpenAM Web Policy Agent 3.3 Reference* for details.

- Web policy agents now allow you to configure the naming of the URL validation net-connect timeout (OPENAM-1257).
- Web policy agents now support IPv6 for notenforced IP addresses (OPENAM-1256).
- A web policy agent is now available for Apache HTTPD Server 2.4 (OPENAM-1195).
- Web policy agents now let you enable and disable Cache-Control headers for unauthenticated sessions (OPENAM-1087).
- Web policy agents now let you preserve POST data when working with URI-based load balancing (OPENAM-980).
- Web policy agents now let you configure whether to do an HTTP 302 redirect after processing the LARES POST (OPENAM-936).
- Web policy agents now let you configure whether to URL encode the session cookie sent with the LARES POST using the boolean property `com.forgerock.agents.cdss.cookie.urlencode` (OPENAM-915).
- Web policy agents can now conditionally redirect users based on the incoming request URL (OPENAM-849).
- Web policy agents now support the Expires attribute on cookies (OPENAM-815).
- Web policy agents can now mark persistent cookies as HTTPOnly, to prevent scripts and third-party programs from accessing the cookies (OPENAM-804).
- The IIS 7 web policy agents now has support for HTTP Basic authentication and password replay, thereby better supporting Microsoft OWA and SharePoint (OPENAM-773).
- Web policy agents now allow use of regular expressions in Not Enforced URLs (OPENAM-772). In addition, regular expressions are supported for logout URLs and for rejecting access to invalid URLs.
- Web policy agents can now forward injected attributes to Not Enforced URLs (OPENAM-770). Set `com.sun.identity.agents.config.notenforced.url.attributes.enable=true` in the web policy agent profile as described in Section 1.2, "Agent Configuration Properties" in the *OpenAM Web Policy Agent 3.3 Reference*.

1.1.2. Major New Features in Web Policy Agents 3.3.1

No new features have been added since the release of 3.3.0.

1.1.3. Major New Features in Web Policy Agents 3.3.3

No new features have been added since the release of 3.3.1.

1.1.4. Major New Features in Web Policy Agents 3.3.4

Web Policy Agents 3.3.4 is a maintenance release that resolves a number of issues, including security issues.

It is strongly recommended that you update to this release to make your deployment more secure, and to take advantage of important functional fixes.

ForgeRock customers can contact support for help and further information.

The following new settings have been added to this release:

- **OPENAM-4265.** Improved IIS site support. If the agent module is enabled for a site that does not have a corresponding `Instance_{siteid}` directory, the request will not be interrupted by the agent and will continue to other IIS modules, including `.net`. For more information, see OPENAM-4265.
- **OPENAM-4888.** Introduces one new setting in the bootstrap file: `com.forgerock.agents.nss.shutdown = on | off`. Default is `on` (not set) and indicates that the agent tries to close NSS connections. For more information, see OPENAM-4888.

1.2. Before You Install Web Policy Agents

This section covers software and hardware prerequisites for installing and running Web Policy Agents.

1.2.1. Web Agents Java Requirements

ForgeRock recommends the most recent update of the supported version of Java to ensure you have the latest security fixes.

All web policy agents except those associated with Microsoft IIS require a Java 6 or 7 runtime environment for installation. ForgeRock recommends the most recent update of Java 6 or 7 to ensure you have the latest security fixes.

ForgeRock has tested this release with Oracle Java SE JDK.

1.2.2. Web Agents Browsers Tested

ForgeRock has tested this web policy agent release with the following web browsers.

- Chrome release 16 and later
- Firefox 3.6 and later
- Internet Explorer 7 and later

1.2.3. Web Server Requirements

Web policy agents support the following web servers.

- Apache HTTP Server 2.2, 2.4
- Microsoft IIS 7, 8
- Oracle iPlanet Web Server 7.0 (also known as Sun Web Server)

1.2.4. Web Agents Platform Requirements

- Apache HTTP web policy agents run on Linux 2.6.18 or later, and on Oracle Solaris 10 or later.
- The Microsoft IIS 7 Web Policy Agent has been tested on Windows Server 2008 R2.
- The Microsoft IIS 8 Web Policy Agent has been tested on Windows Server 2012.
- Before installing web policy agents on Linux, make sure the system can run gcc 4.4.7. Also `libc.so.6` must be available and it must support the GLIBC_2.3 ABI.

You can check this by running the following command: `strings libc.so.6 | grep GLIBC_2`. Also, `libstdc++.so.6` must be available and it must support `GLIBCXX_3.4` and `CXXABI_1.3`. You can check this by running the following commands: `strings libstdc++.so.6 | grep GLIBCXX_3` and `strings libstdc++.so.6 | grep CXXABI_1`.

- Before installing web policy agents on Solaris 10, make sure you have applied the latest shared library patch for C++, at least 119963-16 on SPARC, or 119964-12 on x86.

1.2.5. Web Agents Hardware Requirements

You can deploy Web Policy Agents on any hardware supported for the combination of software required.

ForgeRock has tested this release on x86 and x64 based systems, and also on Solaris SPARC systems.

1.2.6. Special Requests

If you have a special request regarding support for a combination not listed here, contact ForgeRock at info@forgerock.com.

1.3. Upgrading & Installing Web Policy Agents

ForgeRock recommends that you update web policy agents to this release. If you are installing Web Policy Agents for the first time, you can use the same installation instructions as for 3.3.0.

Procedure 1.1. To Upgrade From Web Policy Agents 3.3

1. Back up the policy agent installation and configuration directories.

Also back up the configuration if it is stored centrally in OpenAM.

2. Redirect client traffic away from the protected application.
3. Stop the web server where the policy agent is installed.
4. Remove the old policy agent as described in the *Web Policy Agent Installation Guide*.

If the uninstallation process has changed, refer to the version of the *Web Policy Agent Installation Guide* that corresponds to your web policy agent.

5. Install the new policy agent using the existing configuration.
6. Start the web server where the policy agent is installed.

For new features, the policy agent uses the default configuration until you make changes.

7. Validate that the policy agent is performing as expected.
8. Allow client traffic to flow to the protected application.

Procedure 1.2. To Install Web Policy Agents

If you have not yet installed and configured Web Policy Agents, then install this release instead of 3.3.0.

1. Download and unzip the policy agents.

Find a link to the OpenAM download page from <http://forgerock.com/download-stack/>.

2. Follow the instructions in the *OpenAM Web Policy Agent 3.3.0 Installation Guide*.

1.4. Web Policy Agent Compatibility

This chapter covers both major changes to existing functionality, and also deprecated and removed functionality.

1.4.1. Important Changes to Web Policy Agent Functionality

The following functionality has been changed in Web Policy Agents 3.3:

1.4.1.1. Important Changes to Functionality in Web Policy Agents 3.3.0

- IIS web policy agents no longer rely on the Windows registry to determine where to find configuration settings. Instead, IIS agents determine the relative location of their configuration properties files based on the location of the web policy agent DLL, and on the Site ID set by IIS at runtime.

The cleanest upgrade path is to uninstall the previous version of the IIS agent, and then install the new version of the IIS agent.

- Naming URL validation was introduced after release 3.0.4. The initial implementation of naming URL validation for web policy agents enabled validation by default. Naming URL validation is now fully disabled by default. You can adjust this setting by using the bootstrap configuration property, `com.forgerock.agents.ext.url.validation.level`.
- The default policy evaluation mode for new policy agent profiles is now self rather than subtree, in order to better scale for large numbers of policy rules.

Upgrade does not change existing policy agent profile configurations, however. If you want to adopt the new default setting for existing policy agents, you must change the setting manually.

For web policy agents, set `com.sun.identity.agents.config.fetch.from.root.resource=false`.

1.4.1.2. Important Changes to Functionality in Web Policy Agents 3.3.1

- Consistency has been improved in how OpenAM policy rules match resources. Policy rules are now interpreted more consistently in line with the documentation, and more consistently across platforms and across self and subtree modes. Before you upgrade, consider how these changes affect policy rules.

Although the changes introduced by the improvements affect mainly edge cases, they do impact deployments relying on previous, inconsistent behaviors. The following points describe how OpenAM and policy agents behave following upgrade from OpenAM 11.0.0 and web policy agents 3.3.0 to OpenAM 11.0.1 and web policy agents 3.3.1 or later.

- Policy agents configured to use subtree mode behave as they did prior to 3.3.0.
- If you created your policies with OpenAM 11.0.0 and web policy agents 3.3.0, then note that trailing slashes are no longer stripped from resource names (OPENAM-3509, OPENAM-3667).

In order to match a trailing slash, your rule must end in a slash, or a slash followed by a wildcard.

- When policy agents are configured to use self mode, trailing wildcards, except after `?`, match zero or more characters.

- When policy agents are configured to use self mode, previously a trailing wildcard after a slash, `/*`, matched one or more characters, whereas it now matches zero or more. This means that a resource ending in `/` previously would not match a rule ending in `/*`, whereas it now does.

If you already have two rules to allow access, one ending in `/` and the other in `/*`, then you have nothing to do. Only the latter rule is now required.

If however you have only rules ending in `/*` and intend these to deny access to resources ending in `/`, then add rules ending in `/` specifically to deny access to resources ending in `/`.

- When web policy agents are configured to use self mode, trailing wildcards after `?` match *one* or more characters. This means that a resource with a trailing `?` no longer matches a rule of the form `/*?*`, whereas it would have matched with earlier versions.

To match the behavior of previous releases, when using self mode with resources having empty query strings, add additional rules without trailing wildcards as in `/*?` before you upgrade OpenAM.

This is the only compatibility change since release 3.3.0.

1.4.1.3. Important Changes to Functionality in Web Policy Agents 3.3.3

- On Linux, library requirements have changed. Make sure the system can run gcc 4.4.7. Also `libc.so.6` must be available and it must support the GLIBC_2.3 ABI.

You can check this by running the following command: `strings libc.so.6 | grep GLIBC_2`. Also, `libstdc++.so.6` must be available and it must support GLIBCXX_3.4 and CXXABI_1.3. You can check this by running the following commands: `strings libstdc++.so.6 | grep GLIBCXX_3` and `strings libstdc++.so.6 | grep CXXABI_1`.

1.4.1.4. Important Changes to Functionality in Web Policy Agents 3.3.4

- OPENAM-4265 introduces improved IIS site support. If the agent module is enabled for a site that does not have a corresponding `Instance_{siteid}` directory, the request will not be interrupted by the agent and will continue to other IIS modules, including `.net`.

This change however does not add support for multiple sites and/or multiple processes in IIS. We only support one configuration/site per agent dll (instance). Also, directories should be removed from the `web_agents` directory.

- OPENAM-4629 introduces two net settings. The first is `com.forgerock.agents.init.retry.wait`, which sets the wait time (in seconds) between retries. Default (not set) value is 0.

The second setting is `com.forgerock.agents.init.retry.wait`, which sets the wait time (in seconds) between retries. Default (not set) value is 0.

Set these properties to non-zero to have the Agents retry connecting to OpenAM on startup.

Note that if `Hot-Swap Enabled = no`, then both properties have no value.

- OPENAM-4888 introduces one new setting in the bootstrap file: `com.forgerock.agents.nss.shutdown = on | off`. Default is `on` (not set) and indicates that the agent tries to close NSS connections.

1.4.2. Deprecated Functionality

Support for Microsoft IIS 6 is deprecated, and likely to be removed in a future release.

1.4.3. Removed Functionality

- The web policy agent bootstrap property `com.forgerock.agents.ext.url.validation.disable` introduced in release 3.1.0 has been superseded by the bootstrap property `com.forgerock.agents.ext.url.validation.level`.
- Web policy agent support for Apache HTTP Server 2.0 is no longer provided in this release.
- Web policy agent support for Oracle iPlanet Web Proxy Server (formerly Sun Java System Web Proxy Server) is no longer provided in this release.

1.5. Web Policy Agents Fixes, Limitations, & Known Issues

This chapter covers the status of key issues and limitations at release of Web Policy Agents.

1.5.1. Key Fixes

The following bugs were fixed in Web Policy Agents 3.3. For details, see the [OpenAM issue tracker](#).

1.5.1.1. Key Fixes in Web Policy Agents 3.3.0

- OPENAM-3062: WebAgents do not handle notifications - caches not being flushed
- OPENAM-2952: WPA might crash in conditional login parser module
- OPENAM-2898: WPA does not set Expires attribute in all cookie reset modules
- OPENAM-2741: Web policy agent is not clearing profile/session/response headers and cookies
- OPENAM-2706: IIS is crashed by using one level wildcard to not enforced URL list
- OPENAM-2457: IIS7 policy agent might crash inside request header modifier
- OPENAM-2244: Web Policy Agent might crash inside its reference counted pointer implementation

- OPENAM-2182: Apache PA will crash when Post Data Preservation is enabled and POST data is empty
- OPENAM-2135: IIS and SJSWS policy agents should not require Host header as per HTTP/1.0 specification
- OPENAM-2125: IIS7 policy agent might crash reading POST data
- OPENAM-1838: IIS7 policy agent might crash when HOST header is not available
- OPENAM-1673: IIS6 policy agent crash on IIS application pool restart
- OPENAM-1568: Apache Policy Agent on Windows crash inside NSS/NSPR cleanup
- OPENAM-1541: Policy Agents need to be consistent in HTTP response codes when post data preservation cache entry is expired (or not available)
- OPENAM-1523: Policy Agent fails to locate OpenAM server cookie value
- OPENAM-1510: Policy Agent may crash with remote audit log enabled
- OPENAM-1448: IIS6 policy agent returns http 415 error when used with SOAP web-services and custom headers
- OPENAM-1344: Wrong library being loaded by Apache 2.4 policy agent
- OPENAM-1339: Empty audit log message for Windows policy agents
- OPENAM-1271: webagent namingUrl validation fails if datastore auth module is not configured within auth-chain of agent realm
- OPENAM-1264: OpenAM Web Agent crashes while cleaning Agent Config
- OPENAM-1208: IIS6 policy agent stuck in a loop on a session refresh advice
- OPENAM-1190: IIS6 policy agent erroneously overwrites http headers
- OPENAM-1178: IIS6 policy agent does not set proper status code on 403/500 responses in IIS6 log
- OPENAM-1176: memory leaks in libamsdk
- OPENAM-1166: IIS6 policy agent does not set Content-Type on redirect
- OPENAM-1159: IIS7 policy agent crash on unresolvable naming service hostname
- OPENAM-1118: Policy agent on Linux core dumps on disabled or invalid notifications
- OPENAM-1099: IIS7 policy agent crash on empty LARES response
- OPENAM-1015: "Invalid pointer" in agent's cleanup_properties()

- OPENAM-1011: IIS7 agent unneeded logging fills up agent log file
- OPENAM-845: Semicolon (;) appended to HTTP_HEADER values in IIS7 agent after implementing fix for OPENAM-437
- OPENAM-834: logout url functionality not working as expected
- OPENAM-693: PA should not SIGSEGV if the agent configuration is invalid
- OPENAM-690: Unprotected IIS Websites Stopped Working
- OPENAM-672: IIS crashes with WebAgent
- OPENAM-618: Agent for multi-process servers fails if OpenAM is running in SSL mode with NSPR error -8023
- OPENAM-617: Invalid properties in the agent profile causes the PA to SIGSEGV
- OPENAM-329: Apache 2.2 stop responding when debug log rotation is enabled in Policy Agent

1.5.1.2. Key Fixes in Web Policy Agents 3.3.1

Important

Starting with policy agents version 3.3.1 and OpenAM version 11.0.1, Web Policy Agents address backward compatibility with earlier agents. For details, make sure that you read Section 1.4.1, "Important Changes to Web Policy Agent Functionality".

- OPENAM-3667: Agent removes trailing / from the URL
- OPENAM-3334: WPA might crash when REST service returns `com.sun.identity.idsvcs.GeneralFailure` exception
- OPENAM-3215: Apache Web Agents do not handle notifications - OS independent issue

1.5.1.3. Key Fixes in Web Policy Agents 3.3.3

- OPENAM-4391: WPA does not remove consecutive forward slashes from request URI resulting in invalid policy evaluations
- OPENAM-4390: WPA might fail to sort (reorder) query parameters resulting in invalid policy evaluation
- OPENAM-4048: Web policy agent might fail to parse request url when pathinfo is found in uri string (with pathinfo removed)
- OPENAM-2969: Basic policy to allow HTTP GET fails on root resource

1.5.1.4. Key Fixes in Web Policy Agents 3.3.4

- OPENAM-889: Agent should recover if the agent session gets invalid
- OPENAM-3325: IIS7 PA might crash when logout url is not available
- OPENAM-3692: WPA build script should not depend on products.xml
- OPENAM-4166: Notification queue processor does not start in custom apache mpm configuration
- OPENAM-4265: Support for multiple app pools within a single IIS site/server instance
- OPENAM-4285: WPA local audit log file is not rotating
- OPENAM-4414: Apache Policy Agent does not complete cleanup / logout
- OPENAM-4428: IIS7 WPA post data preservation module does not return HTTP 501 error for POST with invalid Content-Type
- OPENAM-4629: Web policy agent 3.3.3 fails to connect to OpenAM when http starts first, doesn't continuously try to reconnect
- OPENAM-4851: SJSWS WPA notification processor exits with incorrect SAF exit code
- OPENAM-4888: Apache WPA might fail to recycle its worker process when any other Apache HTTPD module is using NSS/NSPR
- OPENAM-5068: WPA ignores notenforced.url.attributes.enable parameter while clearing http headers/cookies
- OPENAM-5288: WPA might fail to connect to IPv6 only host with PR_ADDRESS_NOT_AVAILABLE_ERROR error

1.5.2. Limitations

- Web policy agents for IIS do not support Web gardens nor multi-process mode.
- If you are running an Apache Web agent on RHEL 6 (CentOS 6), and are also running SELinux in enforcing mode, Apache may fail to restart with a 'Permission denied' message, with a pointer to a file in the `/path/to/web_agents/apache2x_agent/lib` directory.

SELinux expects most library files to be configured with a `lib_t` label; you can set that up with the `chcon -t lib_t /path/to/web_agents/apache2x_agent/lib/*.so` and `semanage fcontext -a -t lib_t /path/to/web_agents/apache2x_agent/lib/*.so` commands.

1.5.3. Known Issues

The following important known issues remained open at the time each release became available. For details and information on other issues, see the OpenAM issue tracker.

1.5.3.1. Known Issues in Web Policy Agents 3.3.0

- OPENAM-3257: Web Agent denies access to all resources after accessing root resource multiple times
- OPENAM-2974: agentadmin should allow to configure multiple instances for the same agent on the same host
- OPENAM-2969: Basic policy to allow HTTP GET fails on root resource
- OPENAM-2471: IIS/SJSWS agent enforces access to agent logout URL
- OPENAM-1927: Silent Installation does not work for Apache2.4/Suse11
- OPENAM-1889: Sun Web Server policy agent: Wrong password in combination with naming service failover causes internal error on OpenAM
- OPENAM-1521: Cookie Hijacking Prevention does not work properly under FireFox
- OPENAM-1520: Apache 2.2 WPA 3.0.4.5 causes Apache to hang
- OPENAM-1503: Cookies configured in OpenAM not reset after logout
- OPENAM-889: Agent should recover if the admin session gets invalid
- OPENAM-404: Policy agent should remove duplicate response headers
- OPENAM-308: IIS6 Policy Web Agent doesn't support multiple sites correctly

1.5.3.2. Known Issues in Web Policy Agents 3.3.1

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- OPENAM-308: IIS6 Policy Web Agent doesn't support multiple sites correctly

1.5.3.4. Known Issues in Web Policy Agents 3.3.4

- OPENAM-4360: WPA does not create agent profile automatically when OpenAM is running with HTTPS
- OPENAM-3875: 'Encode URL's Special Characters' in Web Agent does not consistently encode the / charater
- OPENAM-2974: agentadmin should allow to configure multiple instances for the same agent on the same host
- OPENAM-1927: Silent Installation does not work for Apache2.4/Suse11
- OPENAM-1889: Sun Web Server policy agent: Wrong password in combination with naming service failover causes internal error on OpenAM
- OPENAM-1521: Cookie Hijacking Prevention does not work properly under FireFox
- OPENAM-1520: Apache 2.2 WPA 3.0.4.5 causes Apache to hang
- OPENAM-1503: Cookies configured in OpenAM not reset after logout
- OPENAM-404: Policy agent should remove duplicate response headers
- OPENAM-308: IIS6 Policy Web Agent doesn't support multiple sites correctly

1.6. Documentation Updates

The following table tracks changes to the documentation set following the release of Web Policy Agents 3.3:

Table 1.1. Documentation Change Log

Date	Description
2013-11-08	Initial release of Web Policy Agents 3.3.0.
2014-04-28	Maintenance release of Web Policy Agents 3.3.1.
2014-08-29	Maintenance release of Web Policy Agents 3.3.3.
2015-02-25	Maintenance release of Web Policy Agents 3.3.4.
2016-04-13	Reorganization of Web Policy Agents 3.3 documentation, combining 3.3.0, 3.3.1, 3.3.3 and 3.3.4 release notes.

Chapter 2

How to Report Problems & Provide Feedback

If you have questions regarding OpenAM policy agents which are not answered by the documentation, there is a mailing list which can be found at <https://lists.forgerock.org/mailman/listinfo/openam> where you are likely to find an answer.

If you have found issues or reproducible bugs within OpenAM 3.3 policy agents, report them in <https://bugster.forgerock.org>.

When requesting help with a problem, include the following information:

- Description of the problem, including when the problem occurs and its impact on your operation
- Description of the environment, including the following information:
 - Machine type
 - Operating system and version
 - Web server or container and version
 - Java version
 - OpenAM policy agent and version
 - Any patches or other software that might be affecting the problem
- Steps to reproduce the problem
- Any relevant access and error logs, stack traces, or core dumps

Chapter 3

Support

You can purchase OpenAM support subscriptions and training courses from ForgeRock and from consulting partners around the world and in your area. To contact ForgeRock, send mail to info@forgerock.com. To find a partner in your area, see <http://forgerock.com/partners/find-a-partner/>.