



## Web Server Enhancements

Cisco IOS supports HTTP/s server, and Nginx acts as the front-end HTTP/s server. The web server enhancements feature includes serviceability enhancements that are needed for identifying the issues at the customer site. As part of the serviceability, log files collection is supported. Session management resiliency is also supported.

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## Feature Information for Web Server Enhancements

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to [www.cisco.com/go/cfn](http://www.cisco.com/go/cfn). An account on Cisco.com is not required.

**Table 1: Feature Information for Web Server Enhancements**

Feature Name	Releases	Feature Information
Web Server Enhancements	Cisco IOS XE Everest 16.6.1 Release	<p>Cisco IOS supports HTTP/s server, and Nginx acts as the front-end HTTP/s server. The web server enhancements feature includes serviceability enhancements that are needed for identifying the issues at the customer site. As part of the serviceability, log files collection is supported. Session management resiliency is also supported.</p> <p>This feature is supported on Cisco ASR 1000 Series Aggregation Services Routers, Cisco 4400 Series Integrated Services Routers, Cisco Cloud Services Routers 1000v Series, Catalyst 3650, and Catalyst 3850 Switching Platforms.</p>

# Information About Web Server Enhancements

## Session Management Resiliency

After a configuration change, the session details are retained and re-authentication is not needed for web user interface.

## Serviceability Enhancements

Serviceability enhancements improve the debug ability of Nginx (HTTP server) by enabling **btrace** for Nginx debugs or logs. The default btrace log level is **notice**. Use the **set platform software trace nginx R0 btrace** command to change the log level for a particular module or all modules inside the Nginx process.

# Configuring the Nginx Process Trace Level

To modify the trace level to increase or decrease the amount of trace message output, you can set a new trace level using the **set platform software trace nginx** command. Trace levels can be set for each nginx process using the **all-modules** keyword in the **set platform software trace nginx** command, or per module within a process.

### SUMMARY STEPS

1. **enable**
2. **set platform software trace nginx R0 all-modules {debug | emergency | error | info | noise | notice | verbose | warning}**
3. **exit**

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b> <b>Example:</b> Device> <b>enable</b>	Enables privileged EXEC mode. <ul style="list-style-type: none"> <li>• Enter your password if prompted.</li> </ul>
<b>Step 2</b>	<b>set platform software trace nginx R0 all-modules {debug   emergency   error   info   noise   notice   verbose   warning}</b> <b>Example:</b> Device# <b>set platform software trace nginx R0 all-modules error</b>	Sets nginx process trace level. The following are the tracing levels and descriptions: <ul style="list-style-type: none"> <li>• <b>debug</b> – The message provides debug-level output..</li> <li>• <b>emergency</b>—Indicates an issue that makes the system unusable.</li> <li>• <b>error</b>—The message is regarding system error messages.</li> <li>• <b>info</b>—The message is for informational purposes only.</li> <li>• <b>noise</b>—Indicates all possible trace messages for the module are logged.</li> </ul>

	Command or Action	Purpose
		<ul style="list-style-type: none"> <li>• <b>notice</b>—The message is regarding a significant issue, but the device is working normally.</li> <li>• <b>verbose</b>—The message provides verbose debug messages.</li> <li>• <b>warning</b>—Indicates a system warning message.</li> </ul> <p><b>Note</b> By default, trace log severity is notice, and the severity can be modified.</p>
<b>Step 3</b>	<b>exit</b> <b>Example:</b> Device# <code>exit</code>	Exits privileged EXEC mode.

## Enabling Logging Levels for Nginx

### SUMMARY STEPS

1. `enable`
2. `set platform software trace nginx R0 ngx_wsman {debug | emergency | error | info | noise | notice | verbose | warning}`
3. `exit`

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b> <b>Example:</b> Device> <code>enable</code>	Enables privileged EXEC mode. <ul style="list-style-type: none"> <li>• Enter your password if prompted.</li> </ul>
<b>Step 2</b>	<b>set platform software trace nginx R0 ngx_wsman {debug   emergency   error   info   noise   notice   verbose   warning}</b> <b>Example:</b> Device# <code>set platform software trace nginx R0 ngx_wsman error</code>	Sets log level for a particular module or all modules inside the nginx process. <p><b>Note</b> By default, trace log severity is <b>notice</b>.</p>
<b>Step 3</b>	<b>exit</b> <b>Example:</b> Device# <code>exit</code>	Exits privileged EXEC mode.

## Verifying the Trace Level per Module

The following example shows how to view the trace level of Nginx Webserver process for route processor slot 0:

```
Device# show platform software trace level nginx R0
```

```
Module Name                Trace Level
-----
bipc                       Noise
bsignal                   Noise
btrace                    Noise
cdllib                    Noise
cdlutil                   Noise
chasfs                    Noise
evlib                     Noise
evutil                    Noise
mqipc                     Noise
nginx                     Noise
ngx_core                  Noise
ngx_wsman                 Noise
prelib                   Noise
rsaios                   Noise
services                  Noise
syshw                    Noise
tdl_aaa_common            Noise
tdl_aaa_proxy             Noise
tdl_cdlcore              Noise
tdl_ngxws                 Noise
tdl_tps                  Noise
tdl_ui                   Noise
tdllib                   Noise
tps-client               Noise
```

The following example shows how to view the Nginx trace messages:

```
Device# show platform software trace message nginx R0
```

```
.....
2017/05/18 00:38:06.809 [btrace] [23315]: UUID: 0, ra: 0, TID: 0 (debug): tracing initialized
as module 482
--- DECODE 7319:7310:15 DONE ---
2017/05/18 00:38:06.809 [btrace] [23315]: UUID: 0, ra: 0, TID: 0 (note): Successfully
registered module [482] [uiutil]
2017/05/18 00:38:06.809 [btrace] [23315]: UUID: 0, ra: 0, TID: 0 (debug):
[BINOS_BTRACE_LEVEL_MODULE_UIUTIL] is not set
2017/05/18 00:38:06.809 [btrace] [23315]: UUID: 0, ra: 0, TID: 0 (info): Set default level
for module [482] [uiutil] to [15]
```

## Additional References

### Related Documents

Related Topic	Document Title
Additional HTTP configuration information	<i>Using the Cisco Web Browser User Interface</i>

Related Topic	Document Title
Additional HTTPS configuration information	<i>HTTPS - HTTP Server and Client with SSL 3.0</i>
Additional HTTP and HTTPS commands	<i>Cisco IOS Network Management Command Reference</i>

### Technical Assistance

Description	Link
<p>The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies.</p> <p>To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds.</p> <p>Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.</p>	<a href="http://www.cisco.com/public/support/tac/home.shtml">http://www.cisco.com/public/support/tac/home.shtml</a>

