



Sun Java System Web Server 6.1 SP7 Reverse Proxy Plug-in Release Notes



Sun Microsystems, Inc.
4150 Network Circle
Santa Clara, CA 95054
U.S.A.

Part No: 820-0262

Copyright 2007 Sun Microsystems, Inc. 4150 Network Circle, Santa Clara, CA 95054 U.S.A. All rights reserved.

Sun Microsystems, Inc. has intellectual property rights relating to technology embodied in the product that is described in this document. In particular, and without limitation, these intellectual property rights may include one or more U.S. patents or pending patent applications in the U.S. and in other countries.

U.S. Government Rights – Commercial software. Government users are subject to the Sun Microsystems, Inc. standard license agreement and applicable provisions of the FAR and its supplements.

This distribution may include materials developed by third parties.

Parts of the product may be derived from Berkeley BSD systems, licensed from the University of California. UNIX is a registered trademark in the U.S. and other countries, exclusively licensed through X/Open Company, Ltd.

Sun, Sun Microsystems, the Sun logo, the Solaris logo, the Java Coffee Cup logo, docs.sun.com, Java, and Solaris are trademarks or registered trademarks of Sun Microsystems, Inc. in the U.S. and other countries. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. in the U.S. and other countries. Products bearing SPARC trademarks are based upon an architecture developed by Sun Microsystems, Inc.

The OPEN LOOK and Sun™ Graphical User Interface was developed by Sun Microsystems, Inc. for its users and licensees. Sun acknowledges the pioneering efforts of Xerox in researching and developing the concept of visual or graphical user interfaces for the computer industry. Sun holds a non-exclusive license from Xerox to the Xerox Graphical User Interface, which license also covers Sun's licensees who implement OPEN LOOK GUIs and otherwise comply with Sun's written license agreements.

Products covered by and information contained in this publication are controlled by U.S. Export Control laws and may be subject to the export or import laws in other countries. Nuclear, missile, chemical or biological weapons or nuclear maritime end uses or end users, whether direct or indirect, are strictly prohibited. Export or reexport to countries subject to U.S. embargo or to entities identified on U.S. export exclusion lists, including, but not limited to, the denied persons and specially designated nationals lists is strictly prohibited.

DOCUMENTATION IS PROVIDED "AS IS" AND ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE DISCLAIMED, EXCEPT TO THE EXTENT THAT SUCH DISCLAIMERS ARE HELD TO BE LEGALLY INVALID.

Copyright 2007 Sun Microsystems, Inc. 4150 Network Circle, Santa Clara, CA 95054 U.S.A. Tous droits réservés.

Sun Microsystems, Inc. détient les droits de propriété intellectuelle relatifs à la technologie incorporée dans le produit qui est décrit dans ce document. En particulier, et ce sans limitation, ces droits de propriété intellectuelle peuvent inclure un ou plusieurs brevets américains ou des applications de brevet en attente aux États-Unis et dans d'autres pays.

Cette distribution peut comprendre des composants développés par des tierces personnes.

Certains composants de ce produit peuvent être dérivés du logiciel Berkeley BSD, licenciés par l'Université de Californie. UNIX est une marque déposée aux États-Unis et dans d'autres pays; elle est licenciée exclusivement par X/Open Company, Ltd.

Sun, Sun Microsystems, le logo Sun, le logo Solaris, le logo Java Coffee Cup, docs.sun.com, Java et Solaris sont des marques de fabrique ou des marques déposées de Sun Microsystems, Inc. aux États-Unis et dans d'autres pays. Toutes les marques SPARC sont utilisées sous licence et sont des marques de fabrique ou des marques déposées de SPARC International, Inc. aux États-Unis et dans d'autres pays. Les produits portant les marques SPARC sont basés sur une architecture développée par Sun Microsystems, Inc.

L'interface d'utilisation graphique OPEN LOOK et Sun a été développée par Sun Microsystems, Inc. pour ses utilisateurs et licenciés. Sun reconnaît les efforts de pionniers de Xerox pour la recherche et le développement du concept des interfaces d'utilisation visuelle ou graphique pour l'industrie de l'informatique. Sun détient une licence non exclusive de Xerox sur l'interface d'utilisation graphique Xerox, cette licence couvrant également les licenciés de Sun qui mettent en place l'interface d'utilisation graphique OPEN LOOK et qui, en outre, se conforment aux licences écrites de Sun.

Les produits qui font l'objet de cette publication et les informations qu'il contient sont régis par la législation américaine en matière de contrôle des exportations et peuvent être soumis au droit d'autres pays dans le domaine des exportations et importations. Les utilisations finales, ou utilisateurs finaux, pour des armes nucléaires, des missiles, des armes chimiques ou biologiques ou pour le nucléaire maritime, directement ou indirectement, sont strictement interdites. Les exportations ou réexportations vers des pays sous embargo des États-Unis, ou vers des entités figurant sur les listes d'exclusion d'exportation américaines, y compris, mais de manière non exclusive, la liste de personnes qui font objet d'un ordre de ne pas participer, d'une façon directe ou indirecte, aux exportations des produits ou des services qui sont régis par la législation américaine en matière de contrôle des exportations et la liste de ressortissants spécifiquement désignés, sont rigoureusement interdites.

LA DOCUMENTATION EST FOURNIE "EN L'ETAT" ET TOUTES AUTRES CONDITIONS, DECLARATIONS ET GARANTIES EXPRESSES OU TACITES SONT FORMELLEMENT EXCLUES, DANS LA MESURE AUTORISEE PAR LA LOI APPLICABLE, Y COMPRIS NOTAMMENT TOUTE GARANTIE IMPLICITE RELATIVE A LA QUALITE MARCHANDE, A L'APTITUDE A UNE UTILISATION PARTICULIERE OU A L'ABSENCE DE CONTREFACON.

Contents

Release Notes for Sun Java System Web Server 6.1 Reverse Proxy Plug-in	5
Introduction	5
HTTP/1.0 and HTTP/1.1 Compliance	6
Credential Pass-through	6
Authentication to Origin Servers	6
Data Encryption	6
Session Stickiness	7
Simple Load Balancing	7
Granular Error Logging	7
Server Application Functions (SAFs)	7
auth-passthrough	7
check-passthrough	8
service-passthrough	8
Installing the Reverse Proxy plug-in	11
Package Contents	11
Installing on Solaris, Linux, HP-UX and AIX Using tar Packaging	11
Installing on Windows	12
Installing on Solaris Using SVr4 Packaging	12
Installing on Linux using RPM Packaging	12
Configuring the Reverse Proxy plug-in	13
magnus.conf	13
obj.conf	13
Example 1	13
Example 2	14
How to Report Problems and Provide Feedback	15
Sun Welcomes Your Comments	15
Additional Sun Resources	16

Release Notes for Sun Java™ System Web Server 6.1 Reverse Proxy Plug-in

These release notes contain important information available at the time of release of Sun Java System Web Server 6.1 Reverse Proxy plug-in, including information about server application functions (SAFs), installation, configuration, technical notes, and pointers to additional resources. Review the release notes prior to installing and configuring your software, and then periodically thereafter for the most up-to-date information.

In addition to the 32-bit platform support, Sun Java System Web Server 6.1 SP7 also provides support to 64-bit Reverse Proxy.

The complete Sun Java System Web Server 6.1 documentation is available at <http://docs.sun.com/app/docs/coll/1308.4>.

These release notes contain the following sections:

- “Introduction” on page 5
- “Server Application Functions (SAFs)” on page 7
- “Installing the Reverse Proxy plug-in” on page 11
- “Configuring the Reverse Proxy plug-in” on page 13
- “How to Report Problems and Provide Feedback” on page 15
- “Additional Sun Resources” on page 16

Introduction

The Reverse Proxy Plug-in is a NSAPI plug-in designed for use with the Sun Java System Web Server 6.1 SP3 and later Service packs. Same functionality is now provided by 64-bit Reverse Proxy Plug-in (Solaris SPARC Only) which can be used with Sun Java System Web Server 6.1 SP6 and later Service packs

A reverse proxy is a proxy that appears to be a web server (origin server) to clients but in reality forwards the requests it receives to one or more origin servers. Because a reverse proxy presents itself as an origin server, clients do not need to be configured to use a reverse proxy. By

configuring a given reverse proxy to forward requests to multiple similarly configured origin servers, a reverse proxy can operate as an application level software load balancer. In a typical deployment one or more reverse proxies will be deployed between the browsers and the origin servers.

The Reverse Proxy plug-in can be used in conjunction with the Sun Web Server features such as on-the-fly gzip compression, output filters, advanced Access Control Lists, and so on.

The Reverse Proxy plug-in includes support for the following features:

- “HTTP/1.0 and HTTP/1.1 Compliance” on page 6
- “Credential Pass-through” on page 6
- “Authentication to Origin Servers” on page 6
- “Data Encryption” on page 6
- “Session Stickiness” on page 7
- “Simple Load Balancing” on page 7
- “Granular Error Logging” on page 7

HTTP/1.0 and HTTP/1.1 Compliance

The Reverse Proxy plug-in issues HTTP/1.1 requests to origin servers and will accept HTTP/1.0 responses to requests. It will not upgrade incoming HTTP/1.0 requests to HTTP/1.1 in ways that are incompatible with HTTP/1.0 (for example, it will not add a Transfer-encoding: chunked header to a request).

Credential Pass-through

The Reverse Proxy plug-in passes through `basic-auth` and `digest-auth` credentials presented by the client. It encodes client certificates from the client and present them in proprietary headers that an appropriately coded application on the origin server can utilize.

Authentication to Origin Servers

The Reverse Proxy plug-in can be configured to present its own credentials to an origin server. The Reverse Proxy plug-in is capable of presenting `basic-auth` or utilizing a specified certificate nickname.

Data Encryption

The Reverse Proxy plug-in can utilize SSLv2, SSLv3 and TLS when making requests to origin servers.

Session Stickiness

The Reverse Proxy plug-in can be configured to recognize sticky cookies, and can have the name of the sticky cookies be configured.

Simple Load Balancing

The Reverse Proxy plug-in distributes load to several configured origin servers.

Granular Error Logging

The Reverse Proxy plug-in takes advantage of the Web Server's granular error logging capabilities such as config, failure, warning, fine, finer, and finest. See the Web Server documentation at for more detail.

Server Application Functions (SAFs)

The Reverse Proxy plug-in provides the following Server Application Functions (SAFs):

- [“auth-passthrough” on page 7](#)
- [“check-passthrough” on page 8](#)
- [“service-passthrough” on page 8](#)

auth-passthrough

The `auth-passthrough` AuthTrans SAF inspects an incoming HTTP request for client information encoded by a `service-passthrough` function running on an intermediate server. The client information includes the following:

- The IP address from which the request originated, as encoded in the `Proxy-ip` header
- The SSL/TLS session ID of the originating connection, as encoded in the `Proxy-ssl-id` header
- The SSL/TLS cipher by the originating client, as encoded in the `Proxy-cipher`, `Proxy-keysize`, and `Proxy-secret-keysize` headers
- The SSL/TLS client certificate presented by the originating client, as encoded in the `Proxy-issuer-dn`, `Proxy-user-dn`, and `Proxy-auth-cert` headers.

When `auth-passthrough` detects encoded client information, it instructs the server to treat the request as if it had arrived directly from the originating client instead of through an intermediate server running `service-passthrough`.

The `auth-passthrough` SAF is optional. When used, `auth-passthrough` is used on the server instance that receives the request forwarded by `service-passthrough`.

Because `auth-passthrough` makes it possible to override information that may be used for authentication (for example, the IP address of the original request), it is important that only trusted clients and servers be allowed to connect to a server running `auth-passthrough`. As a minimal precaution, only servers behind a corporate firewall should run `auth-passthrough`; no internet-accessible server should run `auth-passthrough`. Further, if information about the originating client is not required, `auth-passthrough` should not be used.

The following `obj.conf` code demonstrates the use of `auth-passthrough` (note that these lines are not indented in a real `obj.conf`):

```
<Object name="default">
AuthTrans fn="auth-passthrough"
...
</Object>
```

check-passthrough

The `check-passthrough` `ObjectType` SAF checks to see if the requested resource (for example, the HTML document or GIF image) is available on the local server. If the requested resource does not exist locally, `check-passthrough` sets the type to indicate that the request should be passed to another server for processing by `service-passthrough`.

The `check-passthrough` SAF accepts the following parameters:

- **type** - (Optional) The type to use for files that do not exist locally. If not specified, type defaults to `magnus-internal/passthrough`.

service-passthrough

The `service-passthrough` `Service` SAF forwards a request to another server for processing.

You can configure the number of times the `service-passthrough` directive tries to get a content from the web server before sending an error to the client by modifying the `retries` attribute in `obj.conf`:

```
<Object name="passthrough">
ObjectType fn="force-type" type="magnus-internal/passthrough"
Service type="magnus-internal/passthrough" fn="service-passthrough"
servers="http://xxx:8084/" poll-timeout="18000" retries="0"
Error reason="Bad Gateway" fn="send-error"
uri="/opt/iplanet/web41sp8/docs/badgateway.html"
</Object>
```

The service-passthrough SAF accepts the following parameters:

- **servers** - A quoted, space-delimited list of the servers that receive the forwarded requests. Individual server names may optionally be prefixed with `http://` or `https://` to indicate the protocol and suffixed with a colon and integer to indicate the port.
- **sticky-cookie** - (Optional) The name of a cookie that will cause requests from a given client to stick to a particular server. Once a request containing a cookie with this name is forwarded to a given server, service-passthrough attempts to forward subsequent requests from that client to the same server by sending a `JROUTE` header back to the client. If not specified, `sticky-cookie` defaults to `JSESSIONID`.
- **user** - (Optional) The username that service-passthrough uses to authenticate to the remote server through Basic-Auth.

Note – ‘user’ requires that ‘password’ also be specified.

- **password** - (Optional) The password that service-passthrough uses to authenticate to the remote server via Basic-Auth.

Note – ‘password’ requires that ‘user’ also be specified.

- **client-cert-nickname** - (Optional) Nickname of the client certificate that service-passthrough uses to authenticate to the remote server.
- **validate-server-cert** - (Optional) Indicates whether service-passthrough should validate the certificate presented by the remote server. If not specified, `validate-server-cert` defaults to `true`.
- **rewrite-host** - (Optional) Indicates whether service-passthrough should rewrite the `Host` header sent to remote servers, replacing the local server’s hostname with the remote server’s hostname. If not specified, `rewrite-host` defaults to `false`.
- **rewrite-location** - (Optional) Indicates whether service-passthrough should rewrite the `Location` headers returned by a remote server, replacing the remote server’s scheme and hostname with the local server’s scheme and hostname. If not specified, `rewrite-location` defaults to `true`.
- **ip-header** - (Optional) Name of the header that contains the client’s IP address, or “” if the IP address should not be forwarded. If not specified, `ip-header` defaults to `Proxy-ip`.
- **cipher-header** - (Optional) Name of the header that contains the symmetric cipher used to communicate with the client (when SSL/TLS is used), or “” if the symmetric cipher name should not be forwarded. If not specified, `cipher-header` defaults to `Proxy-cipher`.
- **keysize-header** - (Optional) Name of the header that contains the symmetric key size used to communicate with the client (when SSL/TLS is used), or “” if the symmetric key size name should not be forwarded. If not specified, `keysize-header` defaults to `Proxy-keysize`.

- **secret-keysize-header** - (Optional) Name of the header that contains the effective symmetric key size used to communicate with the client (when SSL/TLS is used), or "" if the effective symmetric key size name should not be forwarded. If not specified, `secret-keysize-header` defaults to `Proxy-secret-keysize`.
- **ssl-id-header** - (Optional) Name of the header that contains the client's SSL/TLS session ID (when SSL/TLS is used), or "" if the SSL/TLS session ID should not be forwarded. If not specified, `ssl-id-header` defaults to `Proxy-ssl-id`.
- **issuer-dn-header** - (Optional) Name of the header that contains the client certificate issuer DN (when SSL/TLS is used), or "" if the client certificate issuer DN should not be forwarded. If not specified, `issuer-dn-header` defaults to `Proxy-issuer-dn`.
- **user-dn-header** - (Optional) Name of the header that contains the client certificate user DN (when SSL/TLS is used), or "" if the client certificate user DN should not be forwarded. If not specified, `user-dn-header` defaults to `Proxy-user-dn`.
- **auth-cert-header** - (Optional) Name of the header that contains the DER-encoded client certificate in Base64 encoding (when SSL/TLS is used), or "" if the client certificate should not be forwarded. If not specified, `auth-cert-header` defaults to `Proxy-auth-cert`.

When multiple remote servers are configured, `service-passthrough` chooses a single remote server from the list on a request-by-request basis. If a remote server cannot be contacted or returns an invalid response, `service-passthrough` sets the status code to 502 Bad Gateway and returns `REQ_ABORTED`. This will return an error to the browser. This error can be customized in the Web Server by configuring a customized response for the 502 error code.

When user and password are specified, `service-passthrough` will use these credentials to authenticate to the remote server using HTTP basic authentication. When one or more of the servers in the `servers` parameter are configured with a `https://` prefix, `client-cert-nickname` specifies the nickname of the client certificate `service-passthrough` will use to authenticate to the remote server.

Note – `service-passthrough` generally uses HTTP/1.1 and persistent connections for outbound requests with the following exceptions:

- When forwarding a request with a Range header that arrived through HTTP/1.0, `service-passthrough` issues an HTTP/1.0 request. This is done because the experimental Range semantics expected by Netscape HTTP/1.0 clients differ from the Range semantics defined by the HTTP/1.1 specification.
 - When forwarding a request with a request body (For example POST request), `service-passthrough` will not reuse an existing persistent connection. This is done because the remote server is free to close a persistent connection at any time, and `service-passthrough` will not retry requests with a request body.
-

In addition, `service-passthrough` encodes information about the originating client in the headers named by the `ip-header`, `cipher-header`, `keysize-header`, `secret-keysize-header`,

ssl-id-header, issuer-dn-header, user-dn-header, and auth-cert-header parameters (removing any client-supplied headers with the same name) before forwarding the request. Applications running on the remote server may examine these headers to extract information about the originating client.

Installing the Reverse Proxy plug-in

The Reverse Proxy plug-in is available for use with the Sun Java System Web Server 6.1 SP3 or later Service Packs.

The 64-bit Reverse Proxy Plug-in (Solaris SPARC only) is available for use with the Sun Java System Web Server 6.1 SP6 or later Service Packs.

This section includes the following topics:

- [“Package Contents” on page 11](#)
- [“Installing on Solaris, Linux, HP-UX and AIX Using tar Packaging” on page 11](#)
- [“Installing on Windows” on page 12](#)
- [“Installing on Solaris Using SVr4 Packaging” on page 12](#)
- [“Installing on Linux using RPM Packaging” on page 12](#)

Package Contents

The contents of the platform specific packages are:

Solaris, Linux, AIX:

- README.txt
- libpassthrough.so (the NSAPI shared object, or “plug-in”)

HP-UX:

- README.txt
- libpassthrough.sl (the NSAPI shared object, or “plug-in”)

Windows:

- README.txt
- passthrough.dll (the NSAPI shared object, or “plug-in”)

Installing on Solaris, Linux, HP-UX and AIX Using tar Packaging

```
$ gzip -d sun-webserver61-passthrough-{sol|lin|hpux|aix}.tar.gz
```

```
;; Uncompress the tar archive,
```

```
;; where {sol|lin|hpux|aix} reflects
;; the operating system
;; environment the library will
;; be used

$ tar xvf sun-webserver61-passthrough-{sol|lin|hpux|aix}.tar

;; Extract the tar archive
```

Installing on Windows

```
$ unzip sun-webserver61-passthrough-win.zip

;; Uncompress the ZIP archive
```

Installing on Solaris Using SVr4 Packaging

```
$ su

;; root access is required to install
;; SVr4 packages

$ cd <path/to/package>

;; Change directory to where the package
;; is located

# pkgadd -d .

;; Install SUNWwbsvr-passthrough.pkg package
```

Note – This installation places the shared object and README in:
/opt/SUNWwbsvr/plugin-ins/passthrough

Installing on Linux using RPM Packaging

```
$ su

;; root access is required to
;; install RPM packages

$ cd <path/to/package>
```

```
;; Change directory to where
;; the package is located

# rpm -iUvh sun-webserver-passthrough.rpm

;; Install
;; sun-webserver-passthrough.rpm
;; package
```

Note – This installation places the shared object and README in /opt/sun/webserver/plug-ins/passthrough

Configuring the Reverse Proxy plug-in

The Reverse Proxy plug-in should be initialized in the Sun Java System Web Server magnus.conf file and configured in the corresponding obj.conf file.

This section includes the following topics:

- [“magnus.conf” on page 13](#)
- [“obj.conf” on page 13](#)
- [“Example 1” on page 13](#)
- [“Example 2” on page 14](#)

magnus.conf

</path/to/sharedobject> is the path where the shared object is installed, including the shared object itself.

Note that the path elements are “/” regardless of the operating system.

```
Init fn="load-modules" shlib="</path/to/sharedobject>
```

obj.conf

Configuration of the obj.conf will vary depending on the intended use. See the Sun Java System Web Server documentation for use and syntax of the obj.conf.

Example 1

This configuration will proxy the URI “/example” if it does not exist locally. A local copy of “/example” is preferred to a remote copy:

```
<Object name="default">
# Assign the URI "/example" (and any more specific URIs;
# /example/foo.html, /example/qwe.jsp, etc) the object name
# "server.example.com"
NameTrans fn="assign-name"

        from="/example(/|*)"
        name="server.example.com"

...
</Object>

# Execute these instructions for any resource with the assigned name
# "server.example.com"
<Object name="server.example.com">

# Check to see if a local copy of the requested resource exists. Only
# proxy the request if there is not a local copy.
ObjectType fn="check-passthrough"

        type="magnus-internal/passthrough"

# Proxy the requested resource to the URL
# "http://server.example.com:8080" only if the "type" has been set to
# "magnus-internal-passthrough"
Service type="magnus-internal/passthrough"

        fn="service-passthrough"
        servers="http://server.example.com:8080"

</Object>
```

Example 2

This configuration will proxy all requests for the URI “/app” without first checking for a local version. The Reverse Proxy plug-in provides its own credentials through Basic-Auth to the origin server.

```
<Object name="default">
# Assign the URI "/app" (and any more specific URIs;
# /app/foo.html, /app/qwe.jsp, etc) the object name
# "server.example.com"
NameTrans fn="assign-name"

        from="/app(/|*)"
        name="server.example.com"
```

```

...
</Object>

# Execute these instructions for any resource with the assigned name
# "server.example.com"
<Object name="server.example.com">

# Proxy the requested resource to the URL
# "http://server.example.com:8080"
Service fn="service-passthrough"

        servers="http://server.example.com:8080"
        user="blues"
        password="j4ke&elw00d
"

</Object>

```

How to Report Problems and Provide Feedback

If you have problems with Sun Java System Web Server 6.1 Reverse Proxy plug-in, contact Sun customer support using one of the following mechanisms:

- Sun Software Support services online at <http://www.sun.com/service/support/software/>
- The telephone dispatch number associated with your maintenance contract

So that we can best assist you in resolving problems, please have the following information available when you contact support:

- Description of the problem, including the situation where the problem occurs and its impact on your operation
- Machine type, operating system version, and product version, including any patches and other software that might be affecting the problem
- Detailed steps on the methods you have used to reproduce the problem
- Any error logs or core dumps

Sun Welcomes Your Comments

Sun is interested in improving its documentation and welcomes your comments and suggestions. Send your comments to Sun using the “Send comments” link at:

<http://docs.sun.com/>

Please include identifying information with your comments, such as the book's part number and title.

Additional Sun Resources

Useful Sun Java System information can be found at the following locations:

- Documentation for Sun Java System Web Server 6.1 and Service Packs
<http://docs.sun.com/app/docs/coll/1308.4>
- Sun Java System Software Products and Service
<http://www.sun.com/software>
- Sun Java System Developer Information
<http://developers.sun.com/>
- Sun Developer Support Services
<http://developers.sun.com/services/index.jsp>
- Sun Java System Software Support Services
<http://www.sun.com/service/support/software/>
- Sun Support and Training Services
<http://www.sun.com/training/>
- Sun Java System Consulting and Professional Services
<http://www.sun.com/service/sunjavasystem/sjsservicessuite.html>