



# Redirecting Subscriber Traffic Using ISG Layer 4 Redirect

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Intelligent Service Gateway (ISG) is a Cisco IOS software feature set that provides a structured framework in which edge devices can deliver flexible and scalable services to subscribers. This module describes how to configure ISG to redirect subscriber traffic by using the ISG Layer 4 Redirect feature. The ISG Layer 4 Redirect feature enables service providers to better control the user experience by allowing subscriber TCP or User Datagram Protocol (UDP) packets to be redirected to specified servers for appropriate handling. ISG Layer 4 redirection can be used to facilitate subscriber authentication, initial and periodic advertising captivation, redirection of application traffic, and DNS redirection.

## Finding Feature Information in This Module

*Your Cisco IOS software release may not support all features.*

and platform requirements, use the [“Feature Information for Redirecting ISG Subscriber Traffic”](#) section on page 12.

## Contents

- 
- 
- [Information About Redirecting ISG Subscriber Traffic, page 2](#)
- [How to Configure ISG Layer 4 Redirect, page 3](#)
- [Configuration Examples for ISG Layer 4 Redirect, page 9](#)
- [Additional References, page 12](#)
- [Feature Information for Redirecting ISG Subscriber Traffic, page 12](#)



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# Prerequisites for Redirecting ISG Subscriber Traffic

## Restrictions for Redirecting ISG Subscriber Traffic

## Information About Redirecting ISG Subscriber Traffic

Before you configure Layer 4 Redirect, you should understand the following concepts:

[Overview of ISG Layer 4 Redirect, page 2](#)

[Layer 4 Redirect Applications, page 2](#)

## Overview of ISG Layer 4 Redirect

specified manner. For example, packets sent upstream by unauthorized users can be forwarded to a server that redirects the users to a logon page. Similarly, if users try to access a service to which they have not logged on, the packets can be redirected to a server that provides a service logon screen.

The Layer 4 Redirect feature supports three types of redirection, which can be applied to subscriber sessions or to flows:

- Permanent redirection—Specified traffic is redirected to the specified server all the time.
  - Initial redirection—Specified traffic is redirected for a specific duration of the time only, starting from when the feature is applied.
  - Periodic redirection—Specified traffic is periodically redirected. The traffic is redirected for a specified duration of time. The redirection is then suspended for another specified duration. This cycle is repeated.

A redirect server can be any server that is programmed to respond to the redirected packets. If ISG is used with a web portal, unauthenticated subscribers can be sent automatically to a logon page when they start a browser session. Web portal applications can also redirect to service logon pages, advertising pages, and message pages.

Redirected packets are sent to an individual redirect server or redirect server group that consists of one or more servers. ISG selects one server from the group in a rotating fashion to receive the redirected packets.

When traffic is redirected, ISG modifies the destination IP address and TCP port of upstream packets to reflect the destination server. For downstream packets, ISG changes the destination IP address and port to the original packet's source.

## Layer 4 Redirect Applications

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Application traffic from a subscriber can be redirected so as to provide value-added services. For example, a subscriber's SMTP traffic can be redirected to a local mail server that can function as a forwarding agent for the mail.

Domain Name System (DNS) redirection

DNS queries may be redirected to a local DNS server. In some deployments, such as public wireless LAN (PWLAN) hotspots, subscribers may have a static DNS server addresses, which may not be reachable at certain locations. Redirecting DNS queries to a local DNS server allows applications to work properly without requiring reconfiguration.

## How to Configure ISG Layer 4 Redirect

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- [, page 5](#)
- [Configuring Layer 4 Redirection in a Service Profile or User Profile on the AAA Server, page 7](#)  
[Verifying ISG Traffic Redirection, page 7](#)

## Defining a Redirect Server Group

### SUMMARY STEPS

1. `enable`  
`configure terminal`
3. `redirect server-group group-name`
4. `ip-address port-number`

## DETAILED STEPS

	Command or Action	Purpose
Step 1	<b>enable</b>  <b>Example:</b> Router> enable	Enables privileged EXEC mode.  Enter your password if prompted.
	<b>configure terminal</b>  Router# configure terminal	
	<b>redirect server-group</b> <i>group-name</i>  Router(config)# redirect server-group ADVT-SERVER	
	<i>ip-address</i> <i>port-number</i>  Router(config-sg-l4redirect-group)# server ip 10.0.0.1 port 8080	You can enter this command more than one time to add multiple servers to the server group.

## Configuring Layer 4 Redirection on an Interface

### SUMMARY STEPS

- 1.
- 2.
- 3.
- 4.
- 5.
6. **exit**
7.           {       *server-group-name* |           [           ] } [           ] [frequency

**DETAILED STEPS**

Command or Action	Purpose
<p><b>Step 1</b></p> <p><b>Example:</b></p>	<ul style="list-style-type: none"> <li>•</li> </ul>
<p><b>Step 2</b></p> <p><b>Example:</b></p>	
<p><b>Step 3</b></p> <p><i>type number</i></p> <p><b>Example:</b>  Router(config)# interface fastethernet 0/0.505</p> <hr/> <p>Router(config-if)# ip subscriber</p> <hr/> <p>Router(config-subscriber)# identifier interface  exit</p> <hr/> <p>Router(config-subscriber)# exit</p> <hr/> <pre> {          server-group-name   [          ] } [ seconds] [frequency</pre> <hr/> <p>adv-t-server duration 30 frequency 3600</p>	

## Configuring Layer 4 Redirection in a Service Policy Map

### Prerequisites



	Command or Action	Purpose
Step 1	<b>Example:</b>	Enables privileged EXEC mode. <ul style="list-style-type: none"> <li>• Enter your password if prompted.</li> </ul>
Step 2	<b>Example:</b>	Enters global configuration mode.
Step 3	<i>policy-map-name</i>	
	<i>class-name</i>	
	<i>ip-address</i> <i>server-group-name</i> <i>seconds</i> <i>port-number</i> <i>seconds</i>	

**What to Do Next**

You may want to configure a method of activating the service policy map; for example, control policies can be used to activate services. For more information about methods of service activation, see the module [“Configuring ISG Subscriber Services.”](#)



# Configuring Layer 4 Redirection in a Service Profile or User Profile on the AAA Server

## SUMMARY STEPS

- 1.

## DETAILED STEPS

Cisco-AVPair = "ip:l4redirect=redirect to {group   ip [port port-number] seconds seconds	

## What to Do Next

## Verifying ISG Traffic Redirection

### SUMMARY STEPS

- 1.
2. **show redirect translations ip**  
**show redirect group**  
**show subscriber session detailed identifier uid username**

Router> enable	
[ ]	
Router# show redirect translations ip 10.0.0.0	
[ ]	
Router# show redirect group redirect1	
[ ] [ ]	
identifier   session-id   name]	
Router# show subscriber session detailed	

## Examples

### show redirect translations ip 53.0.0.2

Destination IP/port	Server IP/port	Prot	In Flags	Out Flags	Timestamp
152.0.0.2 23	9.2.36.253 23	TCP	none	none	May 08 2003 12:37:10

### Router# show subscriber session uid 135

```
Subscriber session handle: 7C000114, state: connected, service: Local Term
Unique Session ID: 135
Identifier: blind-rdt
SIP subscriber access type(s): IP-Interface
Root SIP Handle: CF000020, PID: 73
Current SIP options: Req Fwding/Req Fwded
Session Up-time: 40 minutes, 30 seconds, Last Changed: 40 minutes, 30 seconds
AAA unique ID: 135
Switch handle: F000086
Interface: ATM2/0.53

Policy information:
Authentication status: unauthen
Config downloaded for session policy:
From Access-Type: IP-Interface, Client: SM, Event: Service Selection Request, Service
Profile name: blind-rdt, 2 references
username "blind-rdt"
l4redirect "redirect to group sesm-grp"
Rules, actions and conditions executed:
```



```
#1 SVC Redirect to group sesm-grp !! applied redirect
Configuration sources associated with this session:
Service: blind-rdt, Active Time = 40 minutes, 32 seconds
Interface: ATM2/0.53, Active Time = 40 minutes, 32 seconds
```

Router#

```
Subscriber session handle: D7000110, state: connected, service: Local Term
Unique Session ID: 133
Identifier:
SIP subscriber access type(s): IP-Interface
Root SIP Handle: 1E, PID: 73
Current SIP options: Req Fwding/Req Fwded
Session Up-time: 42 minutes, 54 seconds, Last Changed: 42 minutes, 54 seconds
AAA unique ID: 133
Switch handle: 17000084
Interface: FastEthernet0/0.505
```

```
Policy information:
  Authentication status: unauthen
```

```
Session inbound features:
  Feature: Layer 4 Redirect
  Rule Cfg Definition
  #1 INT Redirect to group sesm-grp
Configuration sources associated with this session:
Interface: FastEthernet0/0.505, Active Time = 42 minutes, 54 seconds
```

## Configuration Examples for ISG Layer 4 Redirect

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- [Initial Redirection: Example, page 11](#)
- [Periodic Redirection: Examples, page 11](#)
- [Redirecting DNS Traffic: Example, page 11](#)

## Redirecting Unauthenticated Subscriber Traffic: Example

```

Service-policy type control DEFAULT-IP-POLICY

policy-map type control DEFAULT-IP-POLICY
  class type control always event session-start
    1 service-policy type service BLIND-RDT
  !
  class type control always event account-logon
    1 authenticate aaa list AUTH-LIST
    2 service-policy type service unapply BLIND-RDT

policy-map type service BLIND-RDT
  class type traffic CLASS-ALL
  redirect to group PORTAL
!
redirect server-group PORTAL
server ip 10.2.36.253 port 80

```

## Redirecting Unauthorized Subscriber Traffic: Example

```

service-policy type control THE_RULE
!
class-map type traffic match-any CLASS-ALL
!
class-map type traffic match-any CLASS-100_110
  match access-group input 100
  match access-group output 110
!
policy-map type service blind-rdt
  class type traffic CLASS-ALL
  redirect to group PORTAL
!
policy-map type service svc-rdt
  class type traffic CLASS-ALL
  redirect to group PORTAL
!
policy-map type service svc
  class type traffic CLASS-100_110
  class type traffic default in-out
  drop
!
policy-map type control THE_RULE
  class type control always event account-logon
    1 authenticate
    2 service-policy type service name svc-rdt
  class type control cond-svc-logon event service-start
    1 service-policy type service unapply name svc-rdt
    2 service-policy type service identifier service-name
  class type control cond-svc-logon event service-stop
    1 service-policy type service unapply name svc
    2 service-policy type service name svc-rdt
!
class-map type control match-all cond-svc-logon
  match identifier service-name svc
!
redirect server-group PORTAL
server ip 10.2.36.253 port 80

```

---

FastEthernet0/0.505 to a server group called “ADVT” for the initial 60 seconds of the session. After the initial 60 seconds, ISG will stop redirecting the traffic for the rest of the lifetime of the session.

```
encapsulation dot1Q 505
ip address 10.0.0.1 255.255.255.0
ip subscriber
  identifier interface
  redirect to group ADVT duration 60
no cdp enable
```

The following example shows ISG configured to redirect the Layer 4 traffic of all subscribers to a server group called “ADVT” for the initial 60 seconds of the session. After the initial 60 seconds, ISG will stop redirecting the traffic for the rest of the lifetime of the session.

```
service-policy type control initial-rdt
policy-map type control intial-rdt
  class type control always event session-start
    1 service-policy type service name initial-rdt-profile
  !
policy-map type service initial-rdt-profile
  class type traffic CLASS-ALL
    redirect to group ADVT duration 60
```

The following example shows how to redirect subscriber traffic coming over FastEthernet interface 0/0.505 for a period of 60 seconds every 3600 seconds.

```
interface FastEthernet0/0.505
  encapsulation dot1Q 505
  ip address 50.0.0.1 255.255.255.0
  subscriber session
  redirect to group ADVT duration 60 frequency 3600
no cdp enable
!
```

The following example shows how to redirect all subscriber traffic for a period of 60 seconds every 3600 seconds.

## Redirecting DNS Traffic: Example

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## Additional References

The following sections provide references related to the ISG Layer 4 Redirect feature.

### Related Documents

Related Topic	Document Title
	<i>Cisco IOS Intelligent Service Gateway Command Reference</i>

### Technical Assistance

	Link

## Feature Information for Redirecting ISG Subscriber Traffic

features that were introduced or modified in Cisco IOS Release 12.2(28)SB or later releases appear in the table. If you are looking for information on a feature in this technology that is not documented here, see the “[Intelligent Service Gateway Features Roadmap](#).”

Not all commands may be available in your Cisco IOS software release. For details on when support for specific commands was introduced, see the command reference documents.

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Note

**Table 19** *Feature Information for Redirecting ISG Subscriber Traffic*

Feature Name	Software Releases	Feature Configuration Information
		<ul style="list-style-type: none"> <li>•</li> <li>•</li> </ul>

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