



Configuring Route Processor Redundancy for PKI

Route Processor Redundancy provides an alternative to the High System Availability feature. HSA enables a system to reset and use a standby Route Switch Processor, if the active RSP fails. Using RPR, you can reduce unplanned downtime because RPR enables a quicker switchover between an active and standby RSP if the active RSP experiences a fatal error.

Route Processor Redundancy feature currently available on Cisco ASR platforms with dual RP support such as ASR 1006, ASR 1009, and ASR 1013.



Note Route Processor Redundancy supports trustpool import.

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Prerequisites for Configuring Route Processor Redundancy

- You must use the same memory in both RSPs because the secondary RSP must be able to support the primary RSP during a failover.

Restrictions for Configuring Route Processor Redundancy

- Route Processor Redundancy feature only supports platforms with dual RP support.
- Route Processor Redundancy is supported only on routers that support dual RSPs.
- It is not recommended to configure RA (Registration Authority) as it is not validated.

How To Configure Route Processor Redundancy

Configuring Route Processor Redundancy SSO Mode

```
configure terminal
redundancy
mode sso
main-cpu
standby console enable
exit
```

Verifying Route Processor Redundancy

```
show redundancy states
show crypto pki server
show crypto pki certificates tname
```

Route Processor Redundancy SSO Mode Configuration Example

Example for server side configuration:

```
asrlk(config)#ip http server
asrlk(config)#crypto pki trustpoint ROOTCA
asrlk(ca-trustpoint)#hash sha512
asrlk(ca-trustpoint)#revocation-check none
asrlk(ca-trustpoint)#rsakeypair ROOTCA 2048
asrlk(ca-trustpoint)#crypto pki server ROOTCA
asrlk(cs-server)#issuer-name CN=ROOTCA C=pki
asrlk(cs-server)#lifetime certificate 00 00 15
asrlk(cs-server)#lifetime ca-certificate 00 00 25
asrlk(cs-server)#lifetime crl 6
asrlk(cs-server)#serial-number 0x1
asrlk(cs-server)#auto-rollover 00 00 24
% The archive password is not configured. Rollover CA keys and certificates will not be
automatically archived.
asrlk(cs-server)#grant auto
asrlk(cs-server)#database url tftp://<ip>
% Server database url was changed. You need to move the
% existing database to the new location.
```

```
asrlk(cs-server)#database url pl2 tftp://<ip>/  
asrlk(cs-server)#database level complete  
asrlk(cs-server)#database archive pkcs12 password <pwd>  
asrlk(cs-server)#end
```

Example for client side configuration:

```
crypto pki trustpoint client  
enrollment url http://<ip>:80  
usage ike  
subject-name CN=R1 C=pki  
revocation-check crl  
rsa-keypair client 2048  
hash sha512
```

Route Processor Redundancy SSO Mode Verification Example

```
show redundancy states
```

```
my state = 13 -ACTIVE  
peer state = 8 -STANDBY HOT  
  
Mode = Duplex  
Unit = Primary  
Unit ID = 48  
  
Redundancy Mode (Operational) = sso  
Redundancy Mode (Configured) = sso  
Redundancy State = sso  
  
Maintenance Mode = Disabled  
Manual Swact = enabled  
Communications = Up  
  
client count = 132  
client_notification_TMR = 30000 milliseconds  
RF debug mask = 0x0
```

show crypto pki server

Certificate Server ROOTCA:

```

Status: enabled

State: enabled

Server's configuration is locked (enter "shut" to unlock it)

Issuer name: CN=ROOTCA C=pki

CA cert fingerprint: F2BF3707 D9F6F5F3 E0D111D8 A8486437

Granting mode is: auto

Last certificate issued serial number (hex): 2

CA certificate expiration timer: 14:15:50 IST Mar 31 2019

CRL NextUpdate timer: 14:15:50 IST Mar 31 2019

Current primary storage dir: tftp://9.45.3.3//

Current storage dir for .p12 files: tftp://9.45.3.3//

Database Level: Complete - all issued certs written as <serialnum>.cer

Auto-Rollover configured, overlap period 0 days

Autorollover timer: 13:51:50 IST Mar 31 2019

Redundancy configured. This is active.

```



Note Server is enabled only on active RP and is in disabled state in standby mode.

show crypto pki certificates client

Certificate

```

Status: Available

Certificate Serial Number (hex): 03

Certificate Usage: General Purpose

Issuer:

    cn=ROOTCA C=pki

Subject:

    Name: asr1k

    hostname=asr1k

    cn=R1 C=pki

Validity Date:

```

```
start date: 00:42:04 IST Mar 11 2019
end   date: 01:02:04 IST Mar 11 2019
Associated Trustpoints: client
```

CA Certificate

```
Status: Available
Certificate Serial Number (hex): 02
Certificate Usage: Signature
Issuer:
  cn=ROOTCA C=pki
Subject:
  cn=ROOTCA C=pki
Validity Date:
  start date: 00:40:34 IST Mar 11 2019
  end   date: 00:40:34 IST Mar 9 2020
Associated Trustpoints: client
```

