Cisco Prime Access Registrar 9.2.1 Release Notes

Cisco Prime Access Registrar (Prime Access Registrar) is a high performance, carrier class, 3GPP-compliant, 64-bit RADIUS/Diameter solution that provides scalable, flexible, intelligent authentication, authorization, and accounting (AAA) services.

Prime Access Registrar comprises a RADIUS/Diameter server designed from the ground up for performance, scalability, and extensibility for deployment in complex service provider environments including integration with external data stores and systems. Session and resource management tools track user sessions and allocate dynamic resources to support new subscriber service introductions.

Note Prime Access Registrar can be used with Red Hat Enterprise Linux (RHEL) 7.x and 8.2 or CentOS 7.x operating system. Also, Prime Access Registrar is qualified with VMware ESXi 7.0 Update 1c.

Contents

This release note contains the following sections:

System Requirements

This section describes the system requirements to install and use the Prime Access Registrar software.

Table 1 lists the system requirements for Prime Access Registrar 9.2.1

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Table 1 Minimum Hardware and Software Requirements for Prime Access Registrar Server

OS Version	RHEL 7.x and 8.2 CentOS 7.x **Note** Prime Access Registrar supports OpenStack Stein and Victoria versions. You must have the 64-bit rpm files for the relevant RHEL versions while installing Prime Access Registrar. For the list of required rpms for the relevant OS versions, see Required 64-bit rpms for Relevant RHEL OS Versions, page 2.
Model	X86
CPU Type	Intel Xeon CPU 2.30 GHz
Processors	4
CPU Speed	2.30 GHz
Memory (RAM)	8 GB
Swap Space	10 GB
Disk Space	1*146 GB

Prime Access Registrar supports JDK versions 1.8.x and 11.x. Also, Prime Access Registrar is qualified with VMware ESXi 7.0 Update 1c.

Note These are the minimum system requirements to have Prime Access Registrar up and running. This may vary based on the deployments. Please contact your BU team to know the specific system requirements for your deployment.

Required 64-bit rpms for Relevant RHEL OS Versions

rpm	RHEL OS Version 7.x	RHEL OS Version 8.x
brotli	No	Yes
c-ares	Yes	Yes
cyrus-sasl-lib	Yes	Yes
gamin	Yes	Yes
glibc	Yes	Yes
gdome2	Yes	Yes
glib	Yes	Yes
glib2	Yes	Yes
json-c	Yes	Yes
keyutils-libs	Yes	Yes
krb5-libs	Yes	Yes
libbson	No	Yes

rpm	RHEL OS Version 7.x	RHEL OS Version 8.x
libcom_err	Yes	Yes
libcurl	Yes	Yes
libicu	Yes	Yes
libidn2	No	Yes
libgcc	Yes	Yes
libmongocrypt	No	Yes
libnghttp2	No	Yes
libnsl	No	Yes
libpsl	No	Yes
libselinux	Yes	Yes
libssh	No	Yes
libstdc++	Yes	Yes
libtool-ltdl	Yes	Yes
libunistring	No	Yes
libxcrypt	No	Yes
libxml2	Yes	Yes
libzstd	No	Yes
lksctp-tools	Yes	Yes
mongo-c-driver-libs	No	Yes
ncurses-libs	Yes	Yes
nss-softokn-freebl	Yes	Yes
nss-util	Yes	Yes
nspr	Yes	Yes
nss	Yes	Yes
openldap	No	Yes
openssl-libs	Yes	Yes
pcre	Yes	Yes
pcre2	No	Yes
pcre-cpp	No	Yes
snappy	No	Yes
sqlite-libs	No	Yes
tcl	No	Yes
unixODBC	No	Yes
xz-libs	No	Yes
zlib	Yes	Yes

Co-Existence With Other Network Management Applications

To achieve optimal performance, Prime Access Registrar should be the only application running on a given server. In certain cases, when you choose to run collaborative applications such as a SNMP agent, you must configure Prime Access Registrar to avoid UDP port conflicts. The most common conflicts occur when other applications also use ports 2785 and 2786. For more information on SNMP configuration, see the "Configuring SNMP" section in the "Configuring Cisco Prime Access Registrar" chapter of the *Cisco Prime Access Registrar 9.2 Administrator Guide*.

New and Enhanced Features in Cisco Prime Access Registrar 9.2.1

Cisco Prime Access Registrar 9.2.1 provides the following features:

- Error-Based Routing/Failover, page 4
- Optimized DEA Response Handling, page 5
- Enhanced EAP Framework, page 6

Error-Based Routing/Failover

Prime Access Registrar supports failover only when the upstream Diameter node (remote server) is not responding or not reachable. When the upstream node responds with some error (e.g. Diameter-unable-to-deliver), Prime Access Registrar just sends an error response to the downstream Diameter node (client) without attempting to route/failover to the next available peer.

With the error-based routing/failover feature, Prime Access Registrar can resend requests to the next available remote server based on the error code sent by the previous remote server.

Following parameters are introduced in Diameter service to support the error-based routing feature:

- **EnableErrorBasedRouting**—Can be set to **TRUE** or **FALSE** to indicate whether the error-based routing feature is enabled or not. Default value is FALSE.
- **ErrorCodesToBeRouted**—This parameter is available only when the **EnableErrorBasedRouting** parameter is set to TRUE. You can specify the error codes, separated by colon (:), based on which Prime Access Registrar should route the incoming requests to the next available peer. E.g. 3002:3003:3004. Error Codes 3001 through 3010 are supported.

If Prime Access Registrar receives a response for any request with an error code (e.g. diameter-unable-to-deliver, diameter-too-busy, and so on), and if **EnableErrorBasedRouting** parameter is set to **TRUE**, then the received error code is compared with the error codes configured as part of **ErrorCodesToBeRouted** parameter. If the error codes match, Prime Access Registrar routes the request to the next failover peer instead of responding back to the client with the received error.

The following is a sample CLI of the Diameter service configuration:

```
[ //localhost/Radius/Services/dia-proxy ]
    Name = dia-proxy
    Description =
    Type = diameter
    IncomingScript~ =
    OutgoingScript~ =
    MultiplePeersPolicy = RoundRobin
    EnableSticky = FALSE
```

```
    PeerTimeOutPolicy = FailOver
    EnableErrorBasedRouting = TRUE
    ErrorCodesToBeRouted = 3002:3010
    DiaRemoteServers/
```

Optimized DEA Response Handling

As part of the Diameter EAP Answer (DEA) handling process, when Prime Access Registrar receives a Diameter EAP Request (DER), it creates a Multimedia-Authentication-Request (MAR) and sends it to the configured remote server. If the remote server responds back with some error code (e.g. diameter-unable-to-deliver), Prime Access Registrar sends a DEA- Challenge back to the client with AT-Notification set and the Result-Code as Diameter-Multi-Round-Auth. When the client sends a subsequent DER with the response to the AT-notification, Prime Access Registrar sends the DEA with the Result-Code as Diameter-Authentication-Rejected.

With the optimized DEA response handling process, Prime Access Registrar can skip the AT-Notification call flow and directly send the DEA with the specific error code as received from the remote server. This optimization helps in heavy traffic scenarios by reducing a call flow.

The following parameter is introduced in EAP-SIM, EAP-AKA, and EAP-AKA PRIME services:

EnableSKIPNotificationFlag—TRUE/FALSE. If set it to TRUE, the AT-Notification flow is skipped and the DEA message is returned with the specific error code as received from the remote server. Default value is FALSE.

The following is a sample CLI of the EAP-AKA service configuration:

```
[ //localhost/Radius/Services/eap-aka ]
    Name = eap-aka
    Description =
    Type = eap-aka
    NumberOfQuintets = 1
    AlwaysRequestIdentity = False
    EnableIdentityPrivacy = False
    EnableRollingPseudonymSecret = False
    PseudonymSecret = <encrypted>
    PseudonymRenewtime = "24 Hours"
    PseudonymLifetime = Forever
    NotificationService =
    Generate3GPPCompliantPseudonym = False
    EnableReauthentication = False
    UseOutagePolicyForReauth = False
    MaximumReauthentications = 16
    ReauthenticationTimeout = 3600
    ReauthenticationRealm =
    EnableEncryptedIMSI = FALSE
    QuintetCacheTimeout = 120
    AuthenticationTimeout = 120
    QuintetGenerationScript~ =
    UseProtectedResults = False
    EnableStateStickiness = False
    SendReAuthIDInAccept = False
    Subscriber_DBLookup = diameterDB
    DiameterInterface = SWx
    ProxyService = proxy
    MEIdentityLookup = False
    EnableSkipNotificationFlag = True
```

Enhanced EAP Framework

The existing EAP framework in Prime Access Registrar does not support EAP attributes with different order. This results in error response even if the access request contains all the expected EAP attributes.

The enhanced EAP framework allows Prime Access Registrar to parse and validate the EAP attributes received in any order. This enhancement does not have any configuration changes in Prime Access Registrar.

Cisco Prime Access Registrar 9.2.1 Bugs

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- Using the Bug Search Tool, page 6

Using the Bug Search Tool

Use the Bug Search tool (BST) to get the latest information about Cisco Prime Access Registrar bugs. BST allows partners and customers to search for software bugs based on product, release, and keyword, and it aggregates key data such as bug details, product, and version.

BST allows you to:

- Quickly scan bug content
- Configure e-mail notifications for updates on selected bugs
- Start or join community discussions about bugs
- Save your search criteria so you can use it later

When you open the Bug Search page, check the interactive tour to familiarize yourself with these and other Bug Search features.

Step 1 Log into the Bug Search Tool.

a. Go to https://tools.cisco.com/bugsearch.

b. At the Log In screen, enter your registered Cisco.com username and password; then, click **Log In**. The Bug Search page opens.

Note If you do not have a Cisco.com username and password, you can register for them at http://tools.cisco.com/RPF/register/register.do.

Step 2 To search for a specific bug, enter the bug ID in the Search For field and press **Return**.

Step 3 To search for bugs in a particular release:

a. In the Search For field, enter the product name and the release version, e.g. Cisco Prime Access Registrar 9.2.1, and press **Return**. (Leave the other fields empty.)

b. When the search results are displayed, use the filter and sort tools to find the types of bugs you are looking for. You can search for bugs by severity, by status, how recently they were modified, according to the number of support cases associated with them, and so forth.

Related Documentation

For a complete list of Cisco Prime Access Registrar documentation, see the *Cisco Prime Access Registrar 9.2 Documentation Overview*.

Note We sometimes update the documentation after original publication. Therefore, you should also review the documentation on Cisco.com for any updates.