Cisco Policy Suite 18.2.0 Release Notes (Restricted Release) (2)

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IMPORTANT: CPS 18.2.0 is a Short Term Support (STS) release with availability and use restrictions. Contact your Cisco Account or Support representatives, for more information.

Introduction

This release note identifies new features and enhancements, limitations and restrictions, and open and resolved CDETS in Cisco Policy Suite (CPS) software version 18.2.0. Use this release note in combination with the documentation listed in the Related Documentation section.

This release note includes the following sections:

- New and Changed Feature Information
- Installation Notes
- Limitations and Restrictions
- Open and Resolved CDETS
- Related Documentation
- Obtaining Documentation and Submitting a Service Request

New and Changed Feature Information

This section identifies features that are new or modified in this release.

ANDSF

No new features or changes were introduced in this release.

ATS

Support for Longevity Testing

PATS is enhanced to support longevity testing using the following new options:

- Send Asynchronous UnifiedApi Load Call

- Verify Asynchronous UnifiedApi Load Call

- Arming Grammar for Multiple Iterations

- Initiate Executions With Iteration Pause

- Cumulative Statistics Validation Grammar

- Iteration Statistics Validation Grammar

- Arming Grammar With Duration

- Validate Load Statistics

For more information, see the *CPS Automation Testing Grammar Reference*.

Support to Compare Set of Variables

PATS is enhanced to compare a set of variables against a similar set and supports the following new options:

- Define Constant

- Save Values in Csv File

- Save Values in Txt File

- Compare Saved Value

For more information, see the *CPS Automation Testing Grammar Reference*.

Support to Send Traffic Over Multiple Endpoints

PATS is enhanced to send traffic over multiple endpoints and supports the following new options:

- User Defined Peer Selection

- Default/Automated Peer Selection

For more information, see the *CPS Automation Testing Grammar Reference*.

Behavior Changes

CSCvi92350 – default password changed for root user

The default root password has been changed from cisco123 to CpS!^246 for security compliance. All fresh installs, ISSM to 18.2.0 need to use this password to login.

CSCvj00169 – In 18.2, running diagnostics.sh,about.sh etc, clears all the previous contents of shell.

Old Behavior: The contents of the current shell remain in history.

New Behavior: If you want to save the output of any command run on any of the CPS VMs, then the output should be redirected to a file.

Impact on Customer: None

Geographic Redundancy

Reduced Failover Times

The failover scenarios has been enhanced to focus on pushSessionToRemoteSite functionality.

When due to the high TPS, the backup DB (hot standby) cannot handle the request load, and if it becomes overloaded (unavailable), a cross-site migration of the session after the message processing is initiated to the remote site to ensure session data integrity.

A Lookaside Key Prefix called **single** must be added under the Cluster configuration in **LookAside Key Prefixes** section for each Cluster for faster session lookups based on memcache when SingleSy feature is enabled.

The following new statistics have been added:

- push.session.to.remoteSite: Network session pushed to remote site.
- session.migrate.shardchange (counter): This provides information regarding the number of times session migration has happened due to shard change.
- session.migrate.local (counter): This provides information regarding the number of times session migration has happened due to migrateSessionToLocalSite feature.
- session.migrate.stale (counter): This provides information regarding the number of sessions that have become stale due to migration.
- session.migrate.delete (counter): This provides information regarding the number of sessions that went for deletion due to migration.
- session.migrate: Time taken for session migration.
- redis_migrated_session_stored: Session ID written to Redis during failover.
- mongo_migrated_session_deleted_locally: Redis monitor removed network session locally from mongo replica-set.
- redis_migrated_session_deleted: Redis monitor removed network ID from Redis after removing from local mongo replica-set.

Support for Multiple Arbiters

CPS now supports provisioning of multiple arbiter processes in a replica-set. You can add/remove members, remove failed members, create/remove replica-set, and set priorities.

For more information, see the following section in *CPS Geographic Redundancy Guide*:

- *Multiple Arbiter Installation – OpenStack*

- *Multiple Arbiter Installation – VMware*

The configuration of arbiter under replica-set section in YAML in OpenStack has been changed:

Example:

From:

- title: SESSION-SET1

setName: set01

oplogSize: 1024

arbiter: arbiter-site3:27717

arbiterDataPath: /var/data/sessions.1

siteId: "SITE1"

members:

- sessionmgr02-site1:27717

- sessionmgr01-site1:27717

dataPath: /var/data/sessions.1/set01

primaryMembersTag: "SITE1"

secondaryMembersTag: "SITE2"

shardCount: "4"

hotStandBy: "false"

seeds: "sessionmgr01:sessionmgr02:27717"

To:

- title: SESSION-SET1

setName: set01

oplogSize: 1024

arbiters:

- "arbiter-site3:27717"

arbiterDataPath: "/var/data/sessions.1"

siteId: "SITE1"

members:

- "sessionmgr02-site1:27717"

- "sessionmgr01-site1:27717"

dataPath: /var/data/sessions.1/set01

primaryMembersTag: "SITE1"

secondaryMembersTag: "SITE2"

shardCount: "4"

hotStandBy: "false"

seeds: "sessionmgr01:sessionmgr02:27717"

LWR

Productize LWR System and Performance Testing

CPS LWR now provides the following orchestration APIs for installing LWR in an OpenStack environment:

1. Load YAML Configuration File with lwr.cfg Information

2. Apply YAML Configuration File with lwr.cfg

3. View LWR Region Configuration

4. Update LWR Region Configuration

5. Start LWR Region Creation

You can use the CPS OpenStack Orchestration APIs to deploy the LWR VMs in the regions (two or more sites that may or may not be geographically separated) using the HEAT templates and ENV files.

For more information, see the *CPS LWR Installation Guide for OpenStack*.

Mobile

ARP Normalization

CPS now supports normalization of ARP across multiple simultaneous Rx sessions for IMS services based on 3GPP TS 29.214 R13.6 clause 4.4.8 and 5.3.47 and TS 29.212 R13.6 clause 4.5.27 and 4.5.19.1.1.

The following modifications have been done to support normalization of ARP:

- A new flag **Disable Downgrade of Normalised ARP** has been added under Rx Profile.

- Rx STG lookup binding has been updated to support AF-Application-Identifier AVP.

For more information, see *Rx Profile* section in the *CPS Mobile Configuration Guide*.

Enhanced Override Control AVP

CPS is enhanced to support the following new override control AVP:

- Override Merge Wildcard

For more information, see the *CPS Mobile Configuration Guide*.

Initiating Modify Request Based on sdcAccountStatus

In order to avoid LDAP server overloading with multiple LDAP modifications, CPS now supports comparison of Profile attributes and attributes received in initial LDAP query response.

LDAP Modification request is based on the result of comparison i.e. Modification request to LDAP server is only send if a change is detected else the request is skipped.

RAR for Allocation of Released Balance

CPS now has the ability to send Gx-RAR message with grant to parent of shared account, after last reservation of shared quota gets released due to termination of any child session and vice versa.

In shared balance, when the available units is reserved for the members of the shared quota and if any member request for new grant, CPS cannot grant units as all the quota has been reserved. In this scenario due to session termination of any of the member if some quota is left in the balance then CPS sends the RAR with that left amount.

Note: If there are multiple users (> 2) and two user sessions gets terminated and any balance is remaining in the shared quota, then CPS sends Gx_RAR with grant to any one of the eligible shared quota member.

Routing Sh Data Based on Origin Host Pattern

CPS is enhanced to route the Sh data based on Gx CCR-I origin-host pattern.

You need to perform the following tasks:

- Select **Use origin-host for SPR lookup** option under **Services** > **Domains** > **Provisioning** > **External Profile Cache**.
- Ensure **Use Remote SPR Databases** is selected and remote databases are configured (under USuM configuration) to match the Gx CCR-I origin-host pattern.

For more information, see the *CPS Mobile Configuration Guide*.

Statistics for Message Processing Time

CPS is enhanced to improve the subscriber experience by reducing the latency as shown below:

- Gx latency should be 100 ms or less for 95% of transactions, and should not exceed 200 ms

- Sy latency should be 200 ms or less for 95% of transactions, and should not exceed 300 ms

- Rx latency should be 75 ms or less for 95% of transactions, and should not exceed 120 ms

Previously, high latencies could cause timeouts on PGW, OCS, or AF, race conditions, and pending transactions. Therefore, CPS is now enhanced to reduce PCRF processing latencies.

A new configuration option Disable Secondary Key Full Scan DB is introduced in Cluster Configuration in Policy Builder.

With this option, you can disable full scan for secondary key database lookups. By default, the secondary key database lookups is enabled.

For more information, see the *CPS Mobile Configuration Guide*.

MOG

No new features or changes were introduced in this release.

Operations

API Additions or Changes

No changes were introduced in this release.

MIB Additions or Changes

No changes were introduced in this release.

KPI Additions or Changes

No changes were introduced in this release.

Log Additions or Changes

No changes were introduced in this release.

SNMP Alarm Additions or Changes

No changes were introduced in this release.

Statistics Additions or Changes

Reduced Failover Times

The following new statistics have been added:

- push.session.to.remoteSite: Network session pushed to remote site.
- session.migrate.shardchange (counter): This provides information regarding the number of times session migration has happened due to shard change.
- session.migrate.local (counter): This provides information regarding the number of times session migration has happened due to migrateSessionToLocalSite feature.
- session.migrate.stale (counter): This provides information regarding the number of sessions that have become stale due to migration.

- session.migrate.delete (counter): This provides information regarding the number of sessions that went for deletion due to migration.

- session.migrate: Time taken for session migration.

- redis_migrated_session_stored: Session ID written to Redis during failover.

- mongo_migrated_session_deleted_locally: Redis monitor removed network session locally from mongo replica-set.

- redis_migrated_session_deleted: Redis monitor removed network ID from Redis after removing from local mongo replica-set.

Relay Rx AAR Based on IPv6 Range and System ID

The following new statistics are introduced for this feature:

- ipv6_aar_routed_total

  The total AAR messages relayed based on ipv6 based routing. Labels : remote_peer, local_peer, relay_site

- aar_ipv6_range_not_found

  IPv6 in AAR not found in any configured IPv6 range. Labels : remote_peer, local_peer

Routing Rx AAR Using PCRF Session Query

The following new statistics are introduced for this feature:

- pcrf_binding_query_total: Counter for total number of diameter messages that triggered PCRF session queries. Labels: Origin_host, origin_realm, srk_key, status

- pcrf_api_request_send_total: Counter for total number of REST API requests send to PCRF for session query. Labels: url_endpoint, srk_key, status

- pcrf_api_request_duration_ms: Time duration taken by the REST API request. Labels: url_endpoint

Statistics for Message Processing Time

The following new statistics are included for this feature to help determine the latencies in the call flow:

- reloadEndpoints.qns_stat.success: Number of times reload endpoint operation at lb successful.

- reloadEndpoints.qns_stat.error: Number of times reload endpoint operation at lb failed.

- reloadEndpoints.qns_stat.avg: Rolling 5 minute average of successfully executed reloadendpoint actions.

  reloadEndpoints.qns_stat.total_time_in_ms: Total milliseconds of successful reloadendpoint actions.

  counters.reloadEndpoints.qns_count: Number of times reloadendpont operation happened.

  SPR statistics at QNS: (GR)

- spr.remote.delete.qns_stat.error: Error count in remote SPR db delete operation.

- spr.remote.delete.qns_stat.success: Success count in remote SPR db delete operation.

- spr.remote.delete.qns_stat.avg: Rolling 5 minute average of time taken for delete operation on remote SPR db.

- spr.remote.delete.qns_stat.total_time_in_ms: Total milliseconds taken for successful delete operation on remote SPR db.

- spr.remote.deleteAuthAttmpt.qns_stat.error: Error count in remote spr db deleteAuthAttmpt operation.

- spr.remote.deleteAuthAttmpt.qns_stat.success: Success count in remote SPR db deleteAuthAttmpt operation.

- spr.remote.deleteAuthAttmpt.qns_stat.avg: Rolling 5 minute average of time taken for deleteAuthAttmpt operation on remote SPR db.

- spr.remote.deleteAuthAttmpt.qns_stat.total_time_in_ms: Total milliseconds taken for successful deleteAuthAttmpt opration on remote SPR db.

- spr.remote.update.qns_stat.error: Error count in remote SPR db update operation.

- spr.remote.update.qns_stat.success: Success count in remote SPR db update operation.

- spr.remote.update.qns_stat.avg: Rolling 5 minute average of time taken for update operation on remote SPR db.

- spr.remote.update.qns_stat.total_time_in_ms: Total milliseconds taken for successful update operation on remote SPR db.

- spr.remote.updateAuthAttempt.qns_stat.error: Error count in remote SPR db updateAuthAttempt operation.

- spr.remote.updateAuthAttempt.qns_stat.success: Success count in remote SPR db updateAuthAttempt operation.

- spr.remote.updateAuthAttempt.qns_stat.avg: Rolling 5 minute average of time taken for updateAuthAttempt operation on remote SPR db.

- spr.remote.updateAuthAttempt.qns_stat.total_time_in_ms: Total milliseconds taken for successful updateAuthAttempt operation on remote SPR db.

- spr.remote.versionUpdate.qns_stat.error: Error count in remote SPR db versionUpdate operation.

- spr.remote.versionUpdate.qns_stat.success: Success count in remote SPR db versionUpdate operation.

- spr.remote.versionUpdate.qns_stat.avg: Rolling 5 minute average of time taken for versionUpdate operation on remote SPR db.

- spr.remote.versionUpdate.qns_stat.total_time_in_ms: Total milliseconds taken for successful versionUpdate operation on remote SPR db.

- spr.remote.find.qns_stat.error: Error count in remote SPR db find operation.

- spr.remote.find.qns_stat.success: Success count in remote SPR db find operation.

- spr.remote.find.qns_stat.avg: Rolling 5 minute average of time taken for find operation on remote SPR db.

- spr.remote.find.qns_stat.total_time_in_ms: Total milliseconds taken for successful find operation on remote SPR db.

- spr.remote.findAuthAttmpts.qns_stat.error: Error count in remote SPR db findAuthAttmpts operation.

- spr.remote.findAuthAttmpts.qns_stat.success: Success count in remote SPR db findAuthAttmpts operation.

- spr.remote.findAuthAttmpts.qns_stat.avg: Rolling 5 minute average of time taken for findAuthAttmpts operation on remote SPR db.

- spr.remote.findAuthAttmpts.qns_stat.total_time_in_ms   : Total milliseconds taken for successful findAuthAttmpts operation on remote SPR db.

- spr.remote.findUniqueDS.qns_stat.error: Error count in remote SPR db findUniqueDS operation.

- spr.remote.findUniqueDS.qns_stat.success: Success count in remote spr db findUniqueDS operation.

- spr.remote.findUniqueDS.qns_stat.avg: Rolling 5 minute average of time taken for findUniqueDS operation on remote SPR db.

- spr.remote.findUniqueDS.qns_stat.total_time_in_ms: Total milliseconds taken for successful findUniqueDS operation on remote SPR db.

- spr.remote.db.<rempote db name>.qns_count: Number of times <remote db name> collection is chosen for operation

- spr.remote.mcm.<rempote db name>.qns_count: Number of times CPS established a connection to <remote db name> to do operation

  Diameter Endpoint Statistics at LB and QNS nodes: (GR and HA)

- reloadEndpoints (counter) : number of times endpoints reloaded
- reloadEndpoints (time) : Time taken for reloading the endpoints

SessionMigration Statistics at QNS (GR):

- session.migrate.delete.qns_count: Number of sessions marked for deletion due to session migration
- session.migrate.local.qns_count: Number of times session migration happened, session migration is creating session at local db (only find operation happening on remote db), so used the work local for stat.
- session.migrate.stale.qns_count: Number of sessions marked stale due to session migration
- session.migrate.shardchange.qns_count: Number of time session migration happened due to shard change
- session.migrate.qns_stat.error: Error count in session migration operation (i.e creating entry in local db)
- session.migrate.qns_stat.success: Success count in session migration operation (i.e creating entry in local db)
- session.migrate.qns_stat.avg: Rolling 5 minute average of time taken for session migration operation
- session.migrate.qns_stat.total_time_in_ms: Total milliseconds taken for successful session migration operation

DB Full Scan Statistics at QNS: (GR)

- session.scan.remote (counter): number of times full scan was executed
- session.scan.remote (time): Time taken for full scan.

Performance Improvement

Migrate/Upgrade/Install Time Improvements

With this feature implementation, the time required to complete the installation, upgrade or migration has been reduced.

Upgrade CPS to Mongo 3.2.13

In CPS 14.0.1, Mongo has been upgraded from 3.2.10 to 3.2.13. To verify, mongod is running the latest RPMs, execute the command:

runonall.sh 'grep "db version" /var/log/mongo | tail -1' 2>&1 | grep 'CONTROL'*

[pcrfclient02] out: /var/log/mongodb-27727.log:2018-04-09T06:28:28.207+0000 I CONTROL [initandlisten] db version v3.2.13

[sessionmgr01] out: /var/log/mongodb-27727.log:2018-04-09T06:30:57.810+0000 I CONTROL [initandlisten] db version v3.2.13

[sessionmgr02] out: /var/log/mongodb-27727.log:2018-04-09T06:31:43.853+0000 I CONTROL [initandlisten] db version v3.2.13

Note: No changes are done to mongo driver as this is a minor version upgrade.

Platform

CPS Grafana with Prometheus for New Installation

In CPS 18.2.0 releases, Graphite has been replaced with Prometheus. By default, Prometheus is disabled on the system.

For more information, see *Prometheus and Grafana* chapter in the *CPS Operations Guide*.

Support for Other Users

In CPS 18.2.0 and later releases, by default, qns/qns-admin/qns-su/qsn-svn/qns-ro users are created on Cluster Manager when performing a fresh install, an upgrade or a migration.

Policy Reporting

No new features or changes were introduced in this release.

Product Security

Force Users to Login for All New Installations

CPS Policy Builder is now presented with a login panel whenever a user tries to access the Policy Builder at http://cps- machine- address:7070/pb. Authentication failure message is displayed whenever invalid credentials are used to login into the Policy Builder. This is done only for new installs.
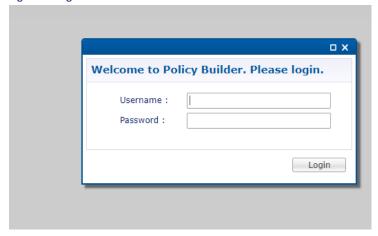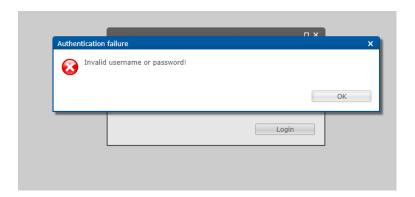
Figure 1: Login Panel

Figure 2: Authentication Failure Message

Upgrade CPS to Latest Version

In CPS 18.2.0, CentOS has been updated to 7.4. With CentOS 7.4, kernel has been upgraded to 3.10.0-693.11.6.el7.x86_64. Also, all the packages have been upgraded to be compatible with CentOS 7.4.

The VM is rebooted in rescue mode for the first time for CentOS to adjust disk/hardware to the new version. Subsequent reboots if necessary is a normal operation. This occurs for new deployments and ISSM.

systemctl command can be used to start/stop/status check a process instead of init.d commands. Also the output format has changed.

For example,

Old command: /etc/init.d/sessionmgr-27717 status

New command: /usr/bin/systemctl status sessionmgr-27717

[root@sessionmgr01 ~]# /usr/bin/systemctl status sessionmgr-27717

● sessionmgr-27717.service - SYSV: sessionmgr-27717

  Loaded: loaded (/etc/rc.d/init.d/sessionmgr-27717; static; vendor preset: disabled)

  Active: active (running) since Tue 2018-04-17 17:10:49 IST; 5 days ago

   Docs: man:systemd-sysv-generator(8)

 Main PID: 21821 (mongod)

  CGroup: /system.slice/sessionmgr-27717.service

      └─21821 /usr/bin/mongod --ipv6 --nojournal --storageEngine mmapv1 --noprealloc --smallfiles --port 27717 --
dbpath=/var/data/sessi...

Apr 17 17:10:49 sessionmgr01 systemd[1]: Starting SYSV: sessionmgr-27717...

Apr 17 17:10:49 sessionmgr01 sessionmgr-27717[21776]: Starting mongod:

Apr 17 17:10:49 sessionmgr01 sessionmgr-27717[21776]: note: noprealloc may hurt performance in many applications

Apr 17 17:10:49 sessionmgr01 sessionmgr-27717[21776]: about to fork child process, waiting until server is ready for connections.

Apr 17 17:10:49 sessionmgr01 sessionmgr-27717[21776]: forked process: 21821

Apr 17 17:10:49 sessionmgr01 sessionmgr-27717[21776]: child process started successfully, parent exiting

Apr 17 17:10:49 sessionmgr01 sessionmgr-27717[21776]: [OK]

Apr 17 17:10:49 sessionmgr01 systemd[1]: Started SYSV: sessionmgr-27717.

[root@sessionmgr01 ~]#

For more information on systemd commands, refer to https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/7/html/system_administrators_guide/chap-managing_services_with_systemd.

If VM creation is manual, then you need to set VM hostname via /etc/hostname. For example,

Old command: - echo HOSTNAME=lb01 >> /etc/sysconfig/network

New command: - echo lb01 > /etc/hostname

For more information, see the following documents:

- *CPS Migration and Upgrade Guide*
- *CPS Installation rGuide for VMware*
- *CPS Installation Guide for OpenStack*
- *CPS Operations Guide*

Security Enhancements

This section lists enhancements introduced to support Cisco Product Security Requirements and the Product Security Baseline (PSB). For more information about Cisco Product Security Requirements, refer to: https://www.cisco.com/c/en/us/about/security-center/security-programs/secure-development-lifecycle/sdl-process.html

DRA Security Enhancements

CPS now supports the following PSB requirements:

- Authenticate only valid usernames for failed login attempts

    o Read available user documents or contact the UUT product team

    o Create a list of user authentication and authentication update procedure for the UUT.

    o Perform the following tasks for each user authentication or authentication update procedure in the list:

        1. Execute the procedure with correct and incorrect user names

        2. Search logs for usernames

- Analyze controlled space protections

    o Identify private data and other targets.

    o Classify targets as public, private, sensitive, and/or critical.

o   Describe the code and agents running inside the controlled space.

UDC

Sy Session Creation Across Multiple APNs

In prior releases, the OCS (Sy-Realm) of a PDN Connection was inferred from an entry from a multi-valued attribute retrieved from the SPR during the session establishment.

In this release, UDC provides the ability to create a unique Sy session per PDN connection depending on the derivation of the realm based on the SPR attribute.

If the SPR attribute mandates different OCS (Sy-Realm) for each PDN connection, then each PDN connection must create its own Sy Session. If multiple APNs are derived from the same realm, then a single Sy session is created. The Sy counters specific to each APN is shared. If UDC is not able to derive the realm for APN, then the Sy counter is not shared.

You can configure the Sy session creation in the UDC APN OCS Mapping page of the Policy Builder.

For more information, see the *CPS UDC Guide.*

UI Enhancements

Support for Lifecycle Notifications in CPS Central UIs

CPS Central and CPS DRA UIs are enhanced to provide notifications regarding various stages of all CPS products which is useful to plan timely upgrades.

For more information, see the *CPS Central Administration Guide* and *CPS vDRA Administration Guide*.

Support to Monitor Relay Connections in CPS Central for DRA

CPS DRA is enhanced to monitor different relay connections to remote DRAs using the **DRA Relay Connection** option.

For more information, see the *CPS vDRA Administration Guide*.

vDRA

Graceful Shutdown of Diameter Peer with no Message Loss via DPR/DPA

vDRA introduces a new parameter that can be specified in the Settings of the vDRA Plugin configuration in the Policy Builder. This parameter, Drain Timeout Ms, indicates the time that a connection remains open for responses to be sent to peers even if DPR is sent or received by vDRA.

If a DPR is sent or received by vDRA, vDRA does not route requests to the disconnecting peer connection via any routing (Dest-Host, SRK, Binding, Table-Driven). However, responses and in-flight requests are sent to the corresponding peers till the duration of Drain Timeout. This allows vDRA to gracefully shutdown when any other remote peer is sending a DPR so as to minimize the diameter message loss.

For more information, see the *CPS vDRA Configuration Guide*.

Relay Rx AAR Based on IPv6 Range and System ID

vDRA provides the ability to configure a range of IPv6 addresses and the relay vDRA system ID. This configuration is used to relay Rx AAR messages to other vDRA clusters based on the IPv6 range.

When an Rx-AAR reaches vDRA, the AAR is checked for an IPv6 prefix. If there is an IPv6 prefix, then the IPv6 Ranges System ID CRD is checked for IPv6 ranges and to find the related primary and secondary vDRA system ID.

If the primary or secondary system is the current vDRA system-ID, then AAR message is processed locally. If the primary/secondary system ID is not the current vDRA, then current vDRA checks the relay links between current system and primary system. If the relay link is up, the AAR is relayed to the primary system; else vDRA checks link to the secondary system.

You can specify the IPv6 ranges and the system IDs in the new CRD table IPv6 Ranges System ID Mapping and the Control Center table IPv6 Ranges System ID Mapping in Policy Builder.

For more information, see the *CPS vDRA Configuration Guide*.

Routing Rx AAR Using PCRF Session Query

Policy DRA supports a fallback routing for Rx AARs for VoLTE using the PCRF session query. This ensures that VoLTE calls can complete in the event that IPv6 binding is not found in the binding database.

For an Rx AAR with an IPv6 binding query, vDRA provides the ability to route the Rx AAR based on an API query to the PCRF to determine if it has a session for the IPv6. The queries can be made in parallel to a configured set of query points on PCRFs.

The Framed-IPv6 AVP from the Rx must be provided in the request to the PCRF. PCRF returns an SRK to be used for routing, similar to existing binding lookups.

You must first enable the PCRF session query in DRA Feature of the vDRA Plugin configuration. You must then configure the REST API parameters in the PCRF Session Query Peers CRD.

For more information, see the *CPS vDRA Configuration Guide*.

vDRA Upgrade 13.1.0 to 18.2.0

CPS supports upgrade of vDRA on VMware from 13.1.0 to 18.2.0 by adding a separate data disk to the master and control VMs of a 13.1.0 vDRA system. The 13.1.0 ISO and VMDK is upgraded to 18.2 ISO and VMDK.

For more information, see the *CPS vDRA Upgrade Guide*.

Installation Notes

Download ISO Image

Download the 18.2.0 software package (ISO image) from:

https://software.cisco.com/download/home/284883882/type/284979976/release/18.2.0

Md5sum Details

05a52ee24946d24eaadbfe8957536719	CPS_18.2.0_Base .qcow2.release.tar.gz
63ac6bbee3c78750fdd74bc58e141f32	CPS_18.2.0_Base.vmdk.release.tar.gz
c84188c79e522111e449d5801b8b5024	CPS_18.2.0.release.iso
974d0f7eedb4b7d806f47d7644a1287c	CPS_Microservices_18.2.0_Base.release.qcow2
adea3d6b51b66132975f2f016d2a35b7	CPS_Microservices_18.2.0_Base.release.vmdk
953e9b5a97ba91863dd2f1573c0adab7	CPS_Microservices_18.2.0_Deployer.release.qcow2
7d2ad5abb2967316d4b17ba80179f155	CPS_Microservices_18.2.0_Deployer.release.vmdk
ec02f41c5f50fbd38e8b07a45c0d7498	CPS_Microservices_DRA_18.2.0.release.iso
75ab9597b454c3ba694d0bfa37641044	CPS_Microservices_DRA_Binding_18.2.0.release.iso

Component Versions

The following table lists the component version details for this release.

Table 1 Component Versions

Component	Version
ANDSF	18.2.0.release
API router	18.2.0.release
Audit	18.2.0.release
Balance	18.2.0.release
CALEA	18.2.0.release
Cisco API	18.2.0.release
Cisco CPAR	18.2.0.release
Congestion Reference Data	18.2.0.release
Control Center	18.2.0.release

Component	Version
Core	18.2.0.release
CSB	18.2.0.release
Custom Reference Data	18.2.0.release
DHCP	18.2.0.release
Diameter2	18.2.0.release
DRA	18.2.0.release
Entitlement	18.2.0.release
Fault Management	18.2.0.release
ISG Prepaid	18.2.0.release
LDAP	18.2.0.release
LDAP Server	18.2.0.release
LWR	18.2.0.release
Microservices Enablement	18.2.0.release
Notification	18.2.0.release
NRF	18.2.0.release
NSLB	18.2.0.release
NSSF	18.2.0.release
PCF	18.2.0.release
Policy Intel	18.2.0.release
POP-3 Authentication	18.2.0.release
Recharge Wallet	18.2.0.release
SCE	18.2.0.release
SCEF	18.2.0.release
Scheduled Events	18.2.0.release
SPR	18.2.0.release
UDC	18.2.0.release
UDSC Interface	18.2.0.release
Unified API	18.2.0.release

New Installations

- VMware Environment

- OpenStack Environment

VMware Environment

To perform a new installation of CPS 18.2.0 in a VMware environment, see *CPS Installation Guide for VMware*, *Release 18.2.0*.

OpenStack Environment

To perform a new installation of CPS 18.2.0 in an OpenStack environment, see *CPS Installation Guide for OpenStack*, *Release 18.2.0*.

Migrate an Existing CPS Installation

To migrate an existing CPS installation, see *CPS Migration and Upgrade Guide, Release 18.1.0*. CPS migration is supported from CPS 12.1.0, CPS 13.x.x, CPS 14.0.0, and CPS 18.0.0.

Upgrade an Existing CPS Installation

As CPS 18.2.0 is built on a newer version of CentOS 7.4, so an in-service software upgrade (ISSU) is not supported.

Post Migration/Upgrade Steps

Re-Apply Configuration Changes

After the migration/upgrade is finished, compare your modified configuration files that you backed up earlier with the newly installed versions. Re-apply any modifications to the configuration files.

Verify Configuration Settings

After the migration/upgrade is finished, verify the following configuration settings.

Note: Use the default values listed below unless otherwise instructed by your Cisco Technical Representative.

Note: During the migration/upgrade process, these configuration files are not overwritten. Only during a new install will these settings be applied.

- `/etc/broadhop/qns.conf`
  - `-Dmongo.client.thread.maxWaitTime.balance=1200`
  - `-Dmongo.connections.per.host.balance=10`
  - `-Dmongo.threads.allowed.to.wait.for.connection.balance=10`
  - `-Dmongo.client.thread.maxWaitTime=1200`
  - `-Dmongo.connections.per.host=5`
  - `-Dmongo.threads.allowed.to.wait.for.connection=10`
  - `-Dcom.mongodb.updaterIntervalMS=400`
  - `-Dcom.mongodb.updaterConnectTimeoutMS=600`

- o `-Dcom.mongodb.updaterSocketTimeoutMS=600`
- o `-DdbSocketTimeout.balance=1000`
- o `-DdbSocketTimeout=1000`
- o `-DdbConnectTimeout.balance=1200`
- o `-DdbConnectTimeout=1200`
- o `-Dcontrolcenter.disableAndsf=true`
- o `-DnodeHeartBeatInterval=9000`
- o `-DdbConnectTimeout.balance=1200`
- o `-Dstatistics.step.interval=1`
- o `-DshardPingLoopLength=3`
- o `-DshardPingCycle=200`
- o `-DshardPingerTimeoutMs=75`
- o `-Ddiameter.default.timeout.ms=2000`
- o `-DmaxLockAttempts=3`
- o `-DretryMs=3`
- o `-DmessageSlaMs=1500`
- o `-DmemcacheClientTimeout=200`
- o `-Dlocking.disable=true`

Note: The following setting should be present only for GR (multi-cluster) CPS deployments:

`-DclusterFailureDetectionMS=1000`

Note: In an HA or GR deployment with local chassis redundancy, the following setting should be set to true. By default, it is set to false.

`-Dremote.locking.off`

- • `/etc/broadhop/diameter_endpoint/qns.conf`
  - o `-Dzmq.send.hwm=1000`
  - o `-Dzmq.recv.hwm=1000`

Reconfigure Service Option

After upgrading from previous release to the current CPS release, Service option configured with Subscriber-Id becomes invalid and you need to reconfigure multiple Subscriber Id in SpendingLimitReport under Service Configurations.

Verify logback.xml Configuration

Make sure the following line exists in the logback.xml file being used. If not, then add the line:

`<property scope="context" name="HOSTNAME" value="${HOSTNAME}" />`

To ensure logback.xml file changes are reflected at runtime, the scanPeriod must be explicitly specified:

`<configuration scan="true" scanPeriod="1 minute">`

Note: In case scanPeriod is missing from already deployed logback.xml file, the application needs to be restarted for the updated scanPeriod configuration to be applicable.

After completing the updates in logback.xml, execute the following command to copy the file to all the VMs:

SSHUSER_PREFERROOT=true copytoall.sh /etc/broadhop/logback.xml /etc/broadhop/logback.xml

Additional Notes

This section provides additional notes necessary for proper installation/working of CPS.

- CSCvf52617: GR_ST: Grafana stops displaying all mongostats in dashboard when Primary member of one DB goes down

  Issue: In case any member of a replica-set is not reachable, you will not be able to see Mongo statistics in grafana. Not reachable can happen due to network problems or blade going down or member is intentionally stopped.

  Workaround: Make non-reachable member reachable. For example:

— If the member is intentionally stopped then one has to start using /etc/init.d/sessionmgr-* start script.

— If there is a network issue, then this issue the network issue needs to be fixed.

- Session Manager Configuration: After a new deployment, session managers are not automatically configured.

a. Edit the /etc/broadhop/mongoConfig.cfg file to ensure all of the data paths are set to /var/data and not /data.

b. Then execute the following command from pcrfclient01 to configure all the replication sets:

    `/var/qps/bin/support/mongo/build_set.sh --all --create`

- Default gateway in lb01/lb02: After the installation, the default gateway might not be set to the management LAN. If this is the case, change the default gateway to the management LAN gateway

- By default, pending transaction feature is enabled. If you are not using it, Cisco recommends to disable pending transaction feature post deployment.

  To disable pending transaction, the following parameter can be configured in /etc/broadhop/qns.conf file:

    `com.broadhop.diameter.gx.pending_txn.attempts=0`

  After adding the parameter in qns.conf file, restart all VMs.

- CSCvb74725: Avoid manual steps in API based GR installation

  Issue: The fresh install of API based GR installation does not execute set priority properly.

  Workaround:

a. The fresh install of API does not execute set priority properly. You need to set the priority manually by executing the following command:

    `set_priority.sh --db all`

b. You need to delete the default ring configuration present in cache_config database. After fresh install in case Active/Active Geo-HA feature is enabled, default ring configuration needs to be deleted manually. To remove/replace ring config, following two options are available:

o   Delete directly from database. Remove from "cache_config", if "shards" is empty. This may need restart of qns services.

OR

o   Run OSGi command `setSkRingSet <ringId> <setId> <servers>` which replaces existing values.

c.   Unused replica-set need to be removed manually.

There is no API support for removing replica-set. So you need to remove the replica-set manually by executing the following command:

`build_set.sh --<databasename> --remove-replica-set <setname>`

For example,

`build_set.sh --spr --remove-replica-set --setname set04`

d.   If someone changes `qns.conf` parameters using API post system is deployed using PATCH method, then `restartall.sh` has to be executed manually so that configuration changes become effective.

e.   You need to be set the priority manually for members after adding via addMember API by executing the following command:

`set_priority.sh --db all`

- CSCvd30781: set_priority.sh broken ImportError: No module named util when running set_priority.sh on pcrfclient01

Issue: `set_priority.sh` from pcrfclient01 and pcrfclient02 is broken. No module named util is found when running `set_priority.sh`.

Workaround: Execute `set_priority.sh` from Cluster Manager. If you do not have replication network on the Cluster Manager, you need to copy the **util** sub-directory from the Cluster Manager to pcrfclient01 and pcrfclient02.

Source on Cluster Manager: `/var/qps/install/current/scripts/modules/util`

Destination on pcrfclient01/02: `/var/qps/bin/install/current/scripts/modules/util`

- CSCvc66672: System is crashing when run more than 6k tps

Issue: High response time is observed when system is running with all the default features installed and has Gx traffic with 6K TPS.

Consideration: It is recommended to create session replica-set as per performance requirements for scaling.

Solution:

o   Create/update /etc/broadhop/mongoConfig.cfg file on Cluster Manager VM to create session cache shards in criss-cross fashion.

[SESSION-SET1]

SETNAME=set01

OPLOG_SIZE=5120

ARBITER1=arbitervip:27717

ARBITER_DATA_PATH=/var/data/sessions.1

MEMBER1=sessionmgr01:27717

MEMBER2=sessionmgr02:27717

DATA_PATH=/var/data/sessions.1/1

[SESSION-SET1-END]

[SESSION-SET2]

SETNAME=set07

OPLOG_SIZE=5120

ARBITER1=arbitervip:27727

ARBITER_DATA_PATH=/var/data/sessions.7

MEMBER1=sessionmgr02:27727

MEMBER2=sessionmgr01:27727

DATA_PATH=/var/data/sessions.1/2

[SESSION-SET2-END]

- o For further information on how to create replica sets, see Create Specific Replica-set and Session Cache Replica-set sections in CPS Installation Guide for VMware.
- o Set session database priority so that the PRIMARY members will be on separate VM:

```
cd /var/qps/bin/support/mongo

./set_priority.sh --db session
```

For more information on `set_priority.sh` script, see *CPS Operations Guide* and *CPS Geographic Redundancy Guide*.

- o To create session shards, see the Create Session Shards section in CPS Installation Guide for VMware.

- CSCve40105: Session databases do not recover on power outage

    Issue: Session databases do not recover after full system outage.

    Condition: Replica configuration is not available after system outage on Arbiter VIP. This is verified using the following command (XXXXX is port number):

    ```
    mongo --host arbitervip:XXXXX --eval "rs.isMaster()['info']" --quiet

    Does not have a valid replica set config
    ```

    Probable Cause: This happens as VIP was up on different pcrfclient (e.g. pcrfclient01) when outage took place and after recovery it is on another pcrfclient (e.g. pcrfclient02). Thus, previous mongo configuration is not available with current active pcrfclient and recovery script is not able to recover data.

    Workaround: User has to flip the VIP when the session databases mounted on tmpfs do not recover after full system outage. To force a switchover of the arbiter VIP to the other pcrfclient, you have to execute the following command:

    ```
    ssh arbitervip service corosync stop

    service corosync stop
    ```

- CSCvg28401: CPS diameter dictionary gets corrupted when there is a change in custom AVP list.

    Issue: CPS Diameter dictionary gets corrupted when there is a change in custom AVP list.

    Probable Cause: The dictionary corruption happens when Policy Builder is published with custom AVP changes. This results in one thread of execution clearing up the AVP cache and populating the cache with the updated AVPs.

During this, if the thread of call processing uses the AVP cache before it is populated with the AVPs, it pushes NullAvpRepresentation object in the cache for which it did not find any definition. This results in decoding failure of the Diameter message. This is a race condition which manifests during high TPS.

Workaround: After configuring custom AVP list, restart CPS using the `restartall.sh` script.

- Add support to disable syncing carbon database and bulk stats files (ISSM)

  Add the following flags in */var/install.cfg* file:

  SKIP_BLKSTATS

  SKIP_CARBONDB

  Example to disable synching:

  SKIP_BLKSTATS=1

  SKIP_CARBONDB=1

- Add the following parameters in */var/install.cfg* file to skip installation type selection and initialization steps during ISSU/ISSM:

  INSTALL_TYPE

  INITIALIZE_ENVIRONMENT

  Example:

  INSTALL_TYPE=mobile

  INITIALIZE_ENVIRONMENT=yes

- CSCvi48586: change_passwd.sh script is getting stuck for root user after fresh deploy.

  Issue: change_passwd.sh script is getting stuck for root user after fresh installation.

  Workaround: The point where the script gets stuck, enter the existing password (not the changed one) for the root user. The script runs successfully after this point in few seconds.

- CSCvi21871: Permission denied when connecting DRA cli and not able to connect dra central

  Issue: Permission denied when connecting to DRA orchestrator CLI with the default admin credentials.

  Workaround: Log into the orchestrator container from the master VM and reload the aaa_init.xml file into confd.

  cps@master-0:/data/orchestrator$ docker exec -it orchestrator bash

  root@orchestrator:/# /var/confd/bin/confd_load -l -m /data/cdb/aaa_init.xml

  root@orchestrator:/# exit

  exit

  cps@master-0:/data/orchestrator$

Limitations and Restrictions

This section covers the following topics:

- Limitations
- Common Vulnerabilities and Exposures

Limitations

- The following restriction applies to LWR:

    o In this release, LWR supports read and write of one user attribute to the replication framework specific to the ADTM bearer counting attribute.

      In future releases, UDC and other applications will be enhanced to provide support of new attributes or user profile details that may require replication

- Solicited Application Reporting

  The following are some restrictions on configuration for the new service options:

    o The pre-configured ADC rule generated by CRD lookup has ADC-Rule-Install AVP definition with support for only three AVPs ADC-Rule-Name, TDF-Application-Identifier, Mute-Notification.

    o For AVPs that are multi-valued, CRD tables are expected to have multiple records - each giving the same output.

    o Comma(,) is not a valid character to be used in values for referenced CRD column in SdToggleConfiguration.

    o AVP Table currently only supports OctetStringAvp value for AVP Data-type.

- During performance testing, it has been found that defining a large number of QoS Group of Rule Definitions for a single session results in degraded CPU performance. Testing with 50 QoS Group of Rule Definitions resulted in a 2x increase in CPU consumption. The relationship appears to be a linear relationship to the number of defined QoS Group of Rule Definitions on a service.

- Hour Boundary Enhancement

  Change in cell congestion level when look-ahead rule is already installed:

  If a cell congestion value changes for current hour or any of the look-ahead hours, there will be no change in rule sent for the rules that are already installed.

  No applicability to QoS Rules:

  The look-ahead works for PCC rules only where we have rule activation/deactivation capabilities and can install upcoming changes in advance. However, if the RAN Congestion use case is changed to use the QoS-Info AVP instead of using PCC rules, we need to fall back to the current RAR on the hour boundary implementation for that use case since the standard do not let us install QoS-info changes ahead of time like we can with PCC rules.

- The Cluster Manager's internal (private) network IP address must be assigned to the host name "installer" in the `/etc/hosts` file. If not, backup/restore scripts (`env_import.sh`, `env_export.sh`) will have access issues to OAM (pcrfclient01/pcrfclient02) VMs.

- The Linux VM message.log files repeatedly report errors similar to the following:

  `vmsvc [warning] [guestinfo] RecordRoutingInfo: Unable to collect IPv4 routing table.`

  This is a known issue affecting ESXi 5.x. Currently, there is no workaround for this. The messages.log file entries are cosmetic and can be safely ignored. For more information, see

  http://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&externalId=2094561

- CSCva02957: Redis instances continue to run, even after redis is disabled using the parameter `-DenableQueueSystem=false` in qns.conf (`/etc/broadhop/`) file and `/etc/broadhop/redisTopology.ini` file.

- CSCva16388: A split-brain scenario (that is, VIPs are up on both nodes) can still occur when there is connectivity loss between lb01 and lb02 and not with other hosts.

Common Vulnerabilities and Exposures (CVE)

No CVEs were found in this release.

Open and Resolved CDETS

The following sections list open and resolved CDETS for this release. For your convenience in locating CDETS in Cisco's Bug Toolkit, the caveat titles listed in this section are drawn directly from the Bug Toolkit database. These caveat titles are not intended to be read as complete sentences because the title field length is limited. In the caveat titles, some truncation of wording or punctuation might be necessary to provide the most complete and concise description.

Note: If you are a registered cisco.com user, view Bug Toolkit on cisco.com at the following website:

https://tools.cisco.com/bugsearch

To become a registered cisco.com user, go to the following website:

https://tools.cisco.com/RPF/register/register.do?exit_url=

Open CDETS

The following table lists the open CDETS in this release.

CPS Open CDETS

Table 2 CPS Open CDETS

CDETS ID	Headline
CSCve87564	ISSM:'/mnt/iso/migrate.sh rollback' cli triggers restart for set-2
CSCvf08748	Redis Server Unprotected by Password Authentication
CSCvg50997	ISO installation New Deployment Initial Installation failed due to puppet failure
CSCvh23048	build-Set may be failing to add NODE_TYPE port to /etc/broadhop.profile file during exeuction
CSCvh25616	Incoming request not dropped when no match for host lookup
CSCvi01695	Create shards api shows success even though failure was diagnosed due to failed rebalance
CSCvi11085	Wrong log rotation in the whisper logs consumes all available disk space
CSCvi18647	If TPS is more than 3K then successful TPS graph is jittering
CSCvi23619	After ISSU, diag shows list of alarms not cleared,while conn btwn LB & PCEF/CSCF/TDF clients came up
CSCvi30526	ATT consumer vDRA setup not handling the load more then 20K TPS

CDETS ID	Headline
CSCvi34182	Sy session not initiated upon SPR profile change via TIM Wrapper
CSCvi39355	Failed to retrieve origin-realm from diamter req msg. seen in service qns logs
CSCvi43479	lwr - call model becomes unstable and then stops ater a restartall.sh
CSCvi53391	PCRF retry behavior is not consistent when there are multiple realms for the same application
CSCvi80088	AVP remote-id' issue
CSCvi89606	ATT, MOG, 12.1, Certain Stats Using E-Notation (Scientific)
CSCvi94552	if primary DB member get isolated from all arbiters then diagnostics give wrong states.
CSCvi98120	CDR dumps deleted but not released for ftp transfer
CSCvj03623	update mongo_upgrade.py to support IPv6 and mongo authentication
CSCvj04436	Diagnostics on site2 of VzW GR set up fails after adding roundtrip delay and perform qns restart
CSCvj11856	New mongo_upgrade.py only updates the last ARBITER in mongoConfig.cfg list
CSCvj12253	CLAB - SPR Failover - High Latency observed
CSCvj16436	Unable to Add Backup DB Shard Via session_cache --add-shard
CSCvj19227	CPS PSB Testing: Passwords are not properly secured in after centos upgrade in 18.2 release
CSCvj19708	receiving ERROR c.b.s.d.impl.mongo.MongoDatabaseUtil - null in consolidated-qns.log
CSCvj22909	VMWare Install Guide needs updating to Web based client
CSCvj24795	CPS is not picking right remote db during POOL subscriber case
CSCvj26300	Security Testing: Apache .htaccess and .htpasswd Disclosure
CSCvj30191	CPS should not accept password which is more than 127 characters
CSCvj30369	Host down alarms may not be cleared
CSCvj30994	Monit process unable to start after restoring of cluman from snapshot (ISSM from 18.2 to 12.1.0)
CSCvj32535	QPS: Re-Deploy of VM creating duplicate VM's
CSCvj32928	Diagnostics.sh is showing exception in Active component alarm section
CSCvj33068	Arbitervip went offline during perform disable set-2 in ISSM full path impacting in the call model
CSCvj33933	CLAB - Memcache rescan/full db rescan
CSCvj34220	Sprint build upgrade on OSP setup via API failed
CSCvj35703	PCRF sending double Gx_RAR upon receiving Sy_SLA Intermediate 5002 (ResultCodeBasedAction cfg)
CSCvj35918	when powered on the qns vm, then CPU utilization is high for aprrox 4-6 min
CSCvj36201	memcached lookup related param not documented
CSCvj36972	Failed to add both IPv4 and IPv6 IP address on LB VM VMW setup
CSCvj37167	During 18.2 ISSM enable set-1, DIP in traffic seen for 5-6 mins,system error/timeouts seen

CDETS ID	Headline
CSCvj37588	Performance degradation observed, after upgrade from 18.2 sprint-2 to sprint-3 iso.
CSCvj37918	Performance impact on REST API calls over https
CSCvj38577	UDC is not sending UPDATE_REQ on receiving Sy SLA
CSCvj39114	CRD_REF_AVP is not getting validated in GxRAR
CSCvj39671	Intermediate "Error pinging MasterDB" and "Unexpected error" in consolidated logs of any site

Microservices Open CDETS

Table 3 Microservices Open CDETS

CDETS ID	Headline
CSCvg91883	SCTP Multihoming: DRA not sending IP details in INIT_ACK when IPv6 is primary and IPv4 is secondary.
CSCvh51211	DRA: CPU Usage and Average Response Time increases for Diameter TPS of 12K on 1 DD
CSCvh53895	Rx AARs are not routed via secondary when Mongo DB primaries are down.
CSCvh54941	18.0 DRA Security Testing-Vulnerability Scan Security Issue in Central/PB/grafana/import
CSCvh77676	vPAS DRA: Diameter Relay for Inbound VIP is also connecting
CSCvh98209	DRA Hardening - Grafana multiple issues
CSCvi01193	VMs are out of time sync when any VM is restarted
CSCvi61528	vDRA is not able to create/store more than 15 M/80 M static sessions
CSCvi88541	DRA successfully processing the answer of already timedout request
CSCvi89359	BEMS777054 - AT&T FirstNet, CPS vDRA, 13.1.1, AF retry : RATE_LIMIT_ERR at lower TPS load tests.
CSCvj06615	DRA container does not comes up when there is an inactive stack configuration
CSCvj08568	DRA: Peer_Message_shutdown Stats are not getting generated on Grafana
CSCvj10152	DRA Security Testing-VulScan Result-SSL Certificate Issues on 18.2
CSCvj13538	DRA e2e response time in grafana is not updating for Rx AAR for F2214
CSCvj25276	vPAS DRA: IPV6 VIP not connecting intermittently
CSCvj29993	vPAS DRA: Region 1 failure cause 1 minute outage on region 2.
CSCvj41245	Duplicate APN_Mapping table in PB after upgrade to 18.2

Resolved CDETS

This section lists the resolved/verified CDETS in this release.

CPS Resolved CDETS

Table 4 CPS Resolved CDETS

CDETS ID	Headline
CSCve14860	Multiple repeated Rx AAR attempts causing high CPU load on qns nodes
CSCvf17396	Cisco Policy Suite might be affected by linux kernel vulnerabilities
CSCvf95380	CPU spikes, PB timeout, and KPI drops on PB Publish
CSCvg91460	NTP are not in sync and TIME_WAIT increases after Sessionmgr VM restart/suspend
CSCvg94228	PCRF is stuck in a loop of ccr-u cca-u when both qos-mod-failure and apn-ambr failure occur together
CSCvg99670	SNMP - VM UP trap for pcrfclient01 is not coming when pcrfclient01 is cold started.
CSCvh02307	External Code for Profile mapping without "Empty Value AVP" config results in a policy error
CSCvh02530	Cisco Policy Suite Might be Affected by Multiple JRE Vulnerabilities
CSCvh02669	Cisco Policy Suite Might be Affected by Multiple Apache httpd Vulnerabilities
CSCvh02680	Cluster Manager has default root password
CSCvh04350	Cisco Policy Suite Might be Affected by Multiple tcpdump Vulnerabilities
CSCvh09980	Multiple Vulnerabilities in bind
CSCvh10010	Multiple Vulnerabilities in expat
CSCvh10018	Multiple Vulnerabilities in freetype
CSCvh10021	GnuTLS Regression Error Denial of Service Vulnerability
CSCvh21186	After doing rollback 18.0->12.0, sessionmgr's init.d scripts are not copied to set-1 pcrfclientXX VM
CSCvh45982	/etc/profile.d/broadhop.sh has incorrect values for path on AIO and HA VMs
CSCvh55110	Evaluate [smart_licensing] Java CVE-2014-0107 & CVE-2015-6420 to be rebuilt in this product
CSCvh70013	Smart Lic Command Injection Evaluation for qps
CSCvh74029	Sy Result code & Request type retriever not working with UDC
CSCvh84665	CPS does not send Supported-Features AVP in CCA-I response
CSCvh92183	Unexpected Sy SNR while Gy session is terminating
CSCvi04828	BuildSetScript is not returning 200 OK when trying to AddMember on OSP setup.
CSCvi07631	CPS12.1: EDR Generated with inconsistent data when PB Config changes
CSCvi09753	Add a remove option for build_kafka_server.sh
CSCvi11217	CPS continuously sending Sy_STR, even when Sy-STA w/5030 received
CSCvi11367	clearCache OSGi command only clears two caches out of four
CSCvi11575	BEMS760096 - Missing and incorrect stats definition for bulkstats in QPS_Statistics.xls
CSCvi15720	ISSU stuck with error [ERROR] No local upgrading DB Member
CSCvi18007	while taking backup of mongo using env_export.sh backup db size calculation use show dbs output
CSCvi18522	After ISSU Rollback,Pcrfclient02 Diagnostics gets stuck after startall/stopall or restartall process

CDETS ID	Headline
CSCvi20557	changed UDC session retention behavior upon no response tries exhaustion
CSCvi20579	PCRF initiating SD_RAR without waiting on the TSR retry response in TSA
CSCvi22873	Extra space in SGSN_IP_TABLE_2 csv making all the table entries to loose
CSCvi22891	Missing/inconsistent consolidated engine logs
CSCvi24239	Policy evaluation inconsistency
CSCvi33349	'Revert All' is throwing error in PB2
CSCvi33983	lwr - performance issue due to streamers lagging
CSCvi34480	UDC node passwords are not changed with change_passwd.sh
CSCvi35007	mongoreadonly user can make changes to Policies
CSCvi35109	Policy Builder has no authentication
CSCvi36386	Netloc UntrustedWLAN Issue with AVP 3GPP-SGSN-MCC-MNC being forwarded to PCSCF
CSCvi37306	After vm-init of LWR VM, kafka processes are up but broken due to wrong zookeeper.properties
CSCvi37953	Grafana not showig right data for TPS
CSCvi38019	Observing high response time and error & Timeout in Sol-3 call-model when goes beyond 6KTPS
CSCvi42394	diagnostics.sh --get_peer_status not working
CSCvi43869	Need capability to start buffering on a child avp
CSCvi43883	udc - qns user not able to login without password on udc02. Too many open files in system
CSCvi45087	Wrong Error code on UnifiedAPI Response, deleting non-existent subscriber
CSCvi45311	Skip notification messages originated by same frontEnd Id in UDC
CSCvi45636	LI-Indicator-Gx sub-avps need proper protect bits set - Charging-Rule-Name
CSCvi48586	change_passwd.sh script is getting stuck for root user after fresh deploy.
CSCvi48751	frequent GC spikes
CSCvi51916	The thread gets leaked due to license related events
CSCvi53366	PCRF is sending different realm on Rx interface towards MOG
CSCvi57809	CPS is not sending MK when UMCH supported flag is on in Gx request
CSCvi59996	BEMS782314 : Add missing Stats for UDC and PCRF
CSCvi72197	QCI/ARP atomicity does not work if Priority AVP is not the first AVP in Dynamic-Pcc-Requested-Qos
CSCvi74252	UMK not activated for ToD service
CSCvi75249	UDR not sent on Sh interface
CSCvi78263	PCC rule evaluation issues for pending policy
CSCvi81132	MOG is not throwing error for Abort Cause Values 1 , 2 and 3 instead it is ending the session.

CDETS ID	Headline
CSCvi85522	CPS is not sending an RAR when a subscriber has a Gx session and a balance has been reprovisioned
CSCvi85893	Hostname set in lower case when VMware is fresh installed using 18.2 Sprint 1 ISO
CSCvi90637	High Response time for UAPI call UpdateServiceRequest
CSCvi90644	glibc Vulnerabilities in CPS
CSCvi90657	git Vulnerabilities in CPS
CSCvi90674	libtirpc Vulnerabilities in CPS
CSCvi90850	openssh Vulnerabilities in CPS
CSCvi90863	rpcbind Vulnerabilities in CPS
CSCvi90878	coreutils Vulnerabilities in CPS
CSCvi90889	nss Vulnerabilities in CPS
CSCvi92624	Stale session expiry not happening for IMS Gx session with F2006 enabled
CSCvi92636	Session Rel RAR stats for F2006 are incorrect when throttling of RAR is enabled
CSCvi94859	Close All link is not working in PB2 peer monitoring screen
CSCvi95258	files inside /var/log/broadhop/script takes huge space as the filename contain date
CSCvj07352	Hijack the mind attribute value -CPS 18 UDC Implementation
CSCvj12253	CLAB - SPR Failover - High Latency observed
CSCvj14305	script monitor_replica does not support GR setup
CSCvj21108	Existing dedicated bearers getting modified when the subscriber uplift duration completed

Microservices Resolved CDETS

Table 5 Microservices Resolved CDETS

CDETS ID	Headline
CSCvi12812	Unable to update record com.mongodb.MongoSocketReadTimeoutException during longevity
CSCvi84031	DRA is not retrying the request to another PCRF after 1 retry when Timeout table is not configured
CSCvi85931	DRA: Relay calls were failing while system upgraded from CPS 13.1 to CPS 18.1
CSCvi86083	DRA is not retrying AAR through Relay DRA: Multiple issues
CSCvi91669	SCTP Outbound connections dont show in Peer Monitoring GUI & not registered with Topology Manager
CSCvj02509	vPAS consumer : System not able to handle the 30K traffic load on each site with 70M Static sessions
CSCvj08657	DRA Error response for AAR has incorrect Origin-Host

Related Documentation

This section contains information about the documentation available for Cisco Policy Suite.

Release-Specific Documents

Refer to the following documents for better understanding of Cisco Policy Suite.

- *CPS ANDSF Configuration Guide*
- *CPS ANDSF SNMP and Alarms Guide*
- *CPS Backup and Restore Guide*
- *CPS CCI Guide for Full Privilege Administrators*
- *CPS CCI Guide for View Only Administrators*
- *CPS Central Administration Guide*
- *CPS Geographic Redundancy Guide*
- *CPS Installation Guide - OpenStack*
- *CPS Installation Guide – VMware*
- *CPS LWR Guide*
- *CPS LWR Installation Guide – OpenStack*
- *CPS LWR Installation Guide - VMware*
- *CPS Migration and Upgrade Guide*
- *CPS Mobile Configuration Guide*
- *CPS MOG API Reference*
- *CPS MOG Guide*
- *CPS MOG Installation Guide - OpenStack*
- *CPS MOG SNMP, Alarms, and Clearing Procedures Guide*
- *CPS MOG Troubleshooting Guide*
- *CPS Operations Guide*
- *CPS Policy Reporting Guide*
- *CPS SNMP, Alarms and Clearing Procedures Guide*
- *CPS Troubleshooting Guide*
- *CPS Unified API Reference Guide*
- *CPS UDC API Reference*
- *CPS UDC Guide*
- *CPS UDC Installation Guide*
- *CPS UDC MoP for Session Migration*
- *CPS UDC SNMP and Alarms Guide*
- *CPS vDRA Administration Guide*
- *CPS vDRA Configuration Guide*

- *CPS vDRA Installation Guide - OpenStack*

- *CPS vDRA Operations Guide*

- *CPS vDRA SNMP and Alarms Guide*

- *CPS vDRA Troubleshooting Guide*

These documents can be downloaded from the following links:

- All Guides

  https://www.cisco.com/c/en/us/support/wireless/quantum-policy-suite-mobile/products-installation-and-configuration-guides-list.html

Obtaining Documentation and Submitting a Service Request

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