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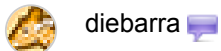
/ License usage and session handling on ISE

License usage and session handling on ISE



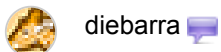
18 Kudos

Started 06-14-2019 by



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Modified 02-25-2020 by



diebarra

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diebarra

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Introduction

This is a brief Techzone on how ISE handles licensing using session information and a recollection from where to collect different counters for licensing

How does license consumption work? On rules :

1) When endpoint matches an authorization rule, endpoint consumes a license. Based on the conditions used in the authorization rule, it will consume different types of licenses (for e.g.: if "Session:PostureStatus Equals Compliant" condition is used and is matching an endpoint, then endpoint consumes apex license). But Reporting (Licensing consumption on Licensing UI) happens for every 30 minutes and is not dynamic.

2) The reason why Active Endpoints count is shown more on the dashboard to the actual. If you click on the Active endpoints it will display the detailed endpoints list which is a close match of Active endpoints.

The " Active Endpoints " count shown in dashboard is the distinct active endpoints fetched from MNT session db, and when we go to the details page, the count shown is the sum of connected endpoints (no accounting stops received), failed endpoints (Failed attempts received) and disconnected endpoints (accounting stops received). The detail page is pulling information from the table MNT endpoint, which is populated by a collation job.

3) ISE uses the following ground rules to clear sessions from MnT and ISE relies heavily on the accounting messages send by the NADs. If ISE receives RADIUS authentication request and:

- No accounting message is received, ISE maintains session for 1 hour.
- If an accounting message is received, ISE maintains the session for 5 days or until accounting stop is received.

- Receiving an interim update will renew the 5 day period.

First troubleshooting step would be to check accounting is being sent correctly by NAD

A suggestion is to collect captures to review that the proper format is being sent by the network device.

Exporting a .csv file from the reporting page to check where accounting requests are going and if they are being received by ISE. You can compare accounting messages received from certain NADs and cross-reference amount of accounting starts vs accounting stops.

MNT queries

The below queries can be used to find the current active endpoints on the MNT node.

HTTPS API

`https://<MnT IP>/admin/API/mnt/License/Base`

`https://<MnT IP>/admin/API/mnt/License/Intermediate`

`https://<MnT IP>/admin/API/mnt/License/Premium`

`https://<MnT IP>/admin/API/mnt/Session/License/LicenseCountsFromSessionDB`

`https://<MnT IP>/admin/API/mnt/Session/ActiveCount`

To remove ISE sessions

curl -X DELETE <https://x.x.x.x/ise/mnt/Session/Delete/All> **-k --basic -u admin**

-X (indicates custom request method, default is GET)

-k (proceed and operate even for server connections considered insecure.)

-- basic (use to indicate basic authentication)

-u (specify user, put an internal ISE admin user next)

DISCLAIMER! Please review with your leads implication on running this since it clears all ISE sessions

From root/SQL

`su - oracle`

`sqlplus /@mnt10`

`SQL> select count(*) from endpoint where status=3;`

`COUNT(*)`

215950

`SQL> select count(*) from endpoint where status=2;`

`COUNT(*)`

47908

`SQL> select count(*) from endpoint where status=1;`

`COUNT(*)`

0

status=3 is Disconnected

status=2 is Failed

status=1 is Active

How to capture MNT session DB Dump:

Login as root and run this command.

```
sh /opt/TimesTen/tt1121/bin/ttBulkCp -o "DSN=sessdir;UID=mnt;PWD=`/opt/CSCOcpm/bin/getdbpw.sh PAP_DB_PWD`" MNT_RAD_SESS /opt/oracle/mnt_rad_sess.dmp
```

Move it to the local disk so you can FTP it out

```
mv /opt/oracle/mnt_rad_sess.dmp /localdisk
```

Once done collect the dump file from this location /opt/oracle/mnt_rad_sess.dmp.

Import to LAB ISE:

```
sh /opt/TimesTen/tt1121/bin/ttBulkCp -i -e mytbl.err -m 0 "DSN=sessdir;UID=mnt;Pwd=`/opt/CSCOcpm/bin/getdbpw.sh PAP_DB_PWD`" MNT_RAD_SESS /opt/oracle/mnt_rad_sess.dmp
```

Run this script to extract the data from Session Directory to a CSV file

-Login to MNT active node (LAB) with root access.

-Connect to TimesTen using the below syntax.

```
sh /opt/TimesTen/tt1121/bin/ttIsql "DSN=sessdir;UID=mnt;PWD=`/opt/CSCOcpm/bin/getdbpw.sh PAP_DB_PWD`";
```

-you will notice the output as follow:

Copyright (c) 1996, 2014, Oracle and/or its affiliates. All rights reserved.
Type ? or "help" for help, type "exit" to quit ttIsql.

```
connect "DSN=sessdir;UID=mnt;PWD=*****";
Connection successful:
DSN=sessdir;UID=mnt;DataStore=/var/TimesTen/sessdir;DatabaseCharacterSet=AL32UTF8;ConnectionCharacterSe
t=US7ASCII;LogFileSize=64;PermSize=384;TempSize=128;CkptLogVolume=1024;TypeMode=0;PLSQL_TIMEOUT=0;LogBu
fMB=64;
(Default setting AutoCommit=1)
Command>
```

-Now the below command to spool the data to a CSV file

```
Command>spool /tmp/SessionOutput.csv
```

-Now run the below command to get the output of the column names:

```
Command>desc mnt_rad_sess;
```

-Now run the below command to spool the table data to CSV file.

```
Command>select * from mnt_rad_sess;
```

-Now exit from this TimesTen Session DB and go to /tmp folder and copy the file SessionOutput.csv to a local node via FTP and you can open the file using Excel and read the content.

Debugs to collect

collector (collector.log)

license (ise-psc.log)


runtime-logging (prtt-server.log)
runtime-AAA (prtt-server.log)

For further troubleshooting the issue with discrepancies in Total endpoints and Active endpoints:

- Session Directory backup which can be collected with the above procedure.
- Bundle of PSN/MNT/PAN with debugs mentioned

Know issues:

Bug was closed since misbehavior was found in Meraki, leaving for references. ~~No fix yet from Meraki~~ Format was changed and the latest Meraki upgrades will have correct user/calling station ID confirmed by Meraki on MR26.5 9/18/2019

[CSCvo86117](#)  : ISE session is not cleared when receiving accounting stop with Service-Type not same as on request

Know behavior on ISE for misbehaving wireless clients

[CSCux89667](#)  Accounting stop with nas-update not followed by start should del session

SkipSessionRemoval=True

This is triggered when there is a mismatch between the session data user name(calling station id on MAB request) and the user name in the request for accounting messages.

SessionCache,2019-04-19 11:21:36,217,WARN ,0x7fad54de4700,cntx=0005055213,sesn=ise-alb1/344834556/745957,CPMSessionID=6466a906000002665cb9e780,**CallingStationID=24-F6-77-1F-35-73**,FramedIPAddress=10.252.2.27,onAccountingStart: Accounting start was received for non-existing session. sessionID=[6466a906000002665cb9e780] user=[**24f6771f3573**],SessionCache.cpp:560

This attribute can be seen on both prtt logs and the report's details.



18 Kudos

Cisco Internal Information (access controlled / confidential)

COMMENTS



hslai

06-14-2019 07:

The "-k" option of curl means not to verify the server's certificate but does not mean "without SSL". Below is from the man page:

-k, --insecure

(TLS) By default, every SSL connection curl makes is verified to be secure. This option allows curl to proceed and operate even for server connections otherwise considered insecure.

Many thanks for sharing.

REMINDER

Please remember to accept solutions and give kudos for articles or discussions that help you!

Information about accepted solutions and kudos can be found [here](#).



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FLAG FOR IMPROVEMENT



Flag for Improvement

RECOMMENDATIONS

Troubleshooting ISE High License usage

ISE licensing

ISE: Advanced license consumption troubleshooting

License Consumption and Management on ISE

ISE - INDEX

LINK YOUR CASE



LINK AN AUTOMATION TASK

CONTRIBUTORS



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nginjupa

CASE LINKS

690271269



Same Problem

693300564



Same Problem

BDB TASKS

ISE Bundle Parser

This is the ISE Log Bundle Parser task...

ISE GZIP Download

None...

ISE TOOL LocalStoreLogParser

...


ise prrtDebug SessionLicense

...

ise profilerParser

...

TOP TAGS

 Add Tag...

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LABELS

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ISE

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