Oracle® Communications DSR Automated Test Suite (ATS) Installation and User's Guide





Oracle Communications DSR Automated Test Suite (ATS) Installation and User's Guide, Release 8.5.0.1

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1

Introduction

The Automated Test Script (ATS) is a software that is used on the system under test to check if the system is functioning as expected. This software performs testing of the features offered by OC-DSR through automation decreasing the manual test effort. This software is flexible enough that the user can create additional test cases with ease using the APIs provided by the framework.

Limitations

Only a single site DSR and SDS can be used as the test environment.

Acronyms

Table 1-1 Acronyms

Term	Definition
API	Application programming interface
ATS	Automated Test Suit
DSR	Diameter Signaling Router
NTP	Network Time Protocol
OS	Operating System
SDS	Subscriber Data Server
SUT	System Under Test
VNFM	Virtual Network Functions Manager

How to use this document

Read the following instructions before performing any procedure documented in this guide:

- Read the instructional text and all associated procedural Warnings or Notes.
- If a procedural step fails to execute, contact Oracle's Customer Service for assistance before attempting to continue. My Oracle Support for information on contacting Oracle Customer Support.

Documentation Admonishments

Admonishments are icons and text throughout this manual that alert the reader to assure personal safety, to minimize possible service interruptions, and to warn of the potential for equipment damage.

Table 1-2 Admonishments

Icon	Description
	Danger:
	(This icon and text indicate the possibility of personal injury.)
DANGER	
^ .	Warning:
/	(This icon and text indicate the possibility of equipment damage.)
WARNING	, ,
\wedge	Caution:
<u> </u>	(This icon and text indicate the possibility of service interruption.)
CAUTION	• ,

Locate Product Documentation on the Oracle Help Center Site

Oracle Communications customer documentation is available on the web at the Oracle Help Center site, http://docs.oracle.com. You do not have to register to access these documents. Viewing these files requires Adobe Acrobat Reader, which can be downloaded at http://www.adobe.com.

- Access the Oracle Help Center site at http://docs.oracle.com.
- Click Industries.
- Under the Oracle Communications subheading, click Oracle Communications documentation link.

The Communications Documentation page displays. Most products covered by these documentation sets display under the headings Network Session Delivery and Control Infrastructure and Platforms.

- 4. Click on your product and then the release number.
 - A list of the documentation set for the selected product and release displays.
- To download a file to your location, right-click the PDF link, select Save target as (or similar command based on your browser), and save to a local folder.

Customer Training

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To obtain contact phone numbers for countries or regions, visit the Oracle University Education web site at www.oracle.com/education/contacts.



My Oracle Support

My Oracle Support (https://support.oracle.com) is your initial point of contact for all product support and training needs. A representative at Customer Access Support can assist you with My Oracle Support registration.

Call the Customer Access Support main number at 1-800-223-1711 (toll-free in the US), or call the Oracle Support hotline for your local country from the list at http://www.oracle.com/us/support/contact/index.html. When calling, make the selections in the sequence shown below on the Support telephone menu:

- 1. Select 2 for New Service Request.
- 2. Select **3** for Hardware, Networking and Solaris Operating System Support.
- Select one of the following options:
 - For Technical issues such as creating a new Service Request (SR), select 1.
 - For Non-technical issues such as registration or assistance with My Oracle Support, select 2.

You are connected to a live agent who can assist you with My Oracle Support registration and opening a support ticket.

My Oracle Support is available 24 hours a day, 7 days a week, 365 days a year.

Emergency Response

In the event of a critical service situation, emergency response is offered by the Customer Access Support (CAS) main number at 1-800-223-1711 (toll-free in the US), or by calling the Oracle Support hotline for your local country from the list at http://www.oracle.com/us/support/contact/index.html. The emergency response provides immediate coverage, automatic escalation, and other features to ensure that the critical situation is resolved as rapidly as possible.

A critical situation is defined as a problem with the installed equipment that severely affects service, traffic, or maintenance capabilities, and requires immediate corrective action. Critical situations affect service and/or system operation resulting in one or several of these situations:

- A total system failure that results in loss of all transaction processing capability
- Significant reduction in system capacity or traffic handling capability
- Loss of system ability to perform automatic system reconfiguration
- Inability to restart a processor or the system
- Corruption of system databases that requires service affecting corrective actions
- Loss of access for maintenance or recovery operations
- Loss of the system ability to provide any required critical or major trouble notification

Any other problem severely affecting service, capacity/traffic, billing, and maintenance capabilities may be defined as critical by prior discussion and agreement with Oracle.



2

ATS Server Deployment Overview

The ATS server is deployed using Virtual Network Functions Manager (VNFM). In this release, ATS has Custom Folder Implementation for all the suites. It has options to check the VDSR health status.

Prerequisites

- Download the ATS Image from Oracle Software Delivery Cloud (OSDC).
 Example of an ATS image: ats-8.5.0.1.0-1.0.7.tgz.
- Ensure that ATS and DSR are in the same network.

Deploying ATS Using VNFM

The ATS Master VNF supports dynamic and fixed IP deployment models.



ATS supports both IPv4 and IPv6 suites at the time of deployment.

To deploy the ATS Master VNF, you must have the following pieces of information:

- The VNF ID for a previously created ATS Master VNF instance.
- Information about the OpenStack instance on which the VNF must be deployed:
 - OpenStack Controller URI
 - User Domain Name
 - Project Domain Id
 - Username
 - Password
 - Tenant name
- The name of a public network in the selected OpenStack instance that will carry the ATS master traffic.
- The IP of an NTP server accessible by VMs within the selected OpenStack instance. The OpenStack controller that controls the selected OpenStack instance hosts an NTP server.

For more information about the list of all the inputs and possible outputs of the command instantiate VNF, refer to ETSI NFV-SOL 003, section 5.4.4.3.1, or the DSR VNFM Swagger specification.



It is mandatory to add two XSI Networks in ATS Master to instantiate a stack.

Sample Request for instantiating ATS Master Dynamic IP deployment model

```
URL: https://<<VNFM HOST IP>>:8443/vnflcm/v1/vnf_instances/< VNF ID
received from create request>/instantiate
        Accept: application/json
        Content-Type: application/json
        X-Token: Token generated after login
        "flavourId": "master",
        "instantiationLevelId": "small",
        "extVirtualLinks": "extVirtualLinks",
        "extManagedVirtualLinks": [],
        "vimConnectionInfo":[ {
        "id": "vimid",
        "vimType": "OpenStack",
        "interfaceInfo": {
        "controllerUri": "https://oortcloud.us.oracle.com:5000/v3"
        },
        "accessInfo": {
        "username": "dsrci.user",
        "password": "xxxxx",
        "userDomain": "Default",
        "projectDomain": "default",
        "tenant": "DSR CI"
        }
        }],
        "localizationLanguage": "localizationLanguage",
        "additionalParams": {
        "xmiNetwork": {
        "name": "ext-net8",
        "ipVersion": "IPv4",
        "xmiSubnetName": "ext-net8-subnet"
        "xsiNetwork": [{
        "name": "ext-net7",
        "ipVersion": "IPv4",
        "xsiSubnetName": "ext-net7-subnet"
        },
        "name": "ext-net6",
        "ipVersion": "IPv4",
        "xsiSubnetName": "ext-net6-subnet"
        "ntpServerIp": "10.250.32.10",
        "dnsServerIp": "10.250.32.10",
```



```
"atsKeyName": "atsKeypair",
"atsMasterFlavor": "ats.master",
"atsMasterImage": "ATS_BOX.qcow2",
"atsAvailabilityZone": "nova"
}
}
```

Instantiating ATS Master Request for Fixed IP deployment model

```
URL: https://<<VNFM HOST IP>>:8443/vnflcm/v1/vnf_instances/< VNF ID</pre>
received from create request>/instantiate
        Accept: application/json
        Content-Type: application/json
        X-Token: Token generated after login
        "flavourId": "master",
        "instantiationLevelId": "small",
        "extVirtualLinks": "extVirtualLinks",
        "extManagedVirtualLinks": [],
        "vimConnectionInfo":[ {
        "id": "vimid",
        "vimType": "OpenStack",
        "interfaceInfo": {
        "controllerUri": "https://oortcloud.us.oracle.com:5000/v3"
        "accessInfo": {
        "username": "dsrci.user",
        "password": "xxxxx",
        "userDomain": "Default",
        "projectDomain": "default",
        "tenant": "DSR CI"
        }],
        "localizationLanguage": "localizationLanguage",
        "additionalParams": {
        "xmiNetwork": {
        "name": "ext-net8",
        "ipVersion": "IPv4",
        "xmiSubnetName": "ext-net8-subnet",
        "fixedIps": {
        "masterXmiIp":"10.75.123.16"
        },
        "xsiNetwork": [{
        "name": "ext-net7",
        "ipVersion": "IPv4",
        "xsiSubnetName": "ext-net7-subnet",
        "fixedIps":
        "xsiIp": "10.75.195.21"
```



```
}
},
{
"name": "ext-net6",
"ipVersion": "IPv4",
"xsiSubnetName": "ext-net6-subnet",
"fixedIps":
{
"xsiIp": "10.75.195.22"
}
}],
"ntpServerIp": "10.250.32.10",
"dnsServerIp": "10.250.32.10",
"atsKeyName": "atsKeypair",
"atsMasterFlavor": "ats.master",
"atsMasterImage": "ATS_BOX.qcow2",
"atsAvailabilityZone": "nova"
}
}
```

Sample Response

Instantiating the ATS Master VNF response

The following table describes the parameters for ATS Master:

Parameter	Definitions
flavourId	Identifier of the VNF deployment flavor to be instantiated.
xmiNetwork	Network used to provide access master VM communication.
ntpServerIp	IP of the NTP server.
dnsServerIp (optional)	IP of the DNS server. If not provided, NTP server IP will be considered as DNS server IP.
atsKeyName	Key pair name for ATS. To log in to the ATS instance, use same key pair.
masterXmiIp	In case of fixed IP scenario, the IP of master will be provided.
xsiNetwork	Network used for DSR signaling traffic.



Parameter	Definitions
atsMasterFlavor (optional)	Flavor used for OpenStack deploys.
atsMasterImage (optional)	Image used for OpenStack deploys.
atsAvailabilityZone (optional)	Name of logical partitioning in case of host aggregate.

Note:

The atsKeyName pair is created dynamically through VNFM. The same public key is put into all the ATS instances (master, core & tools), and the private key is in the ATS master stack output. Use the same private key to log in to the ATS instance (master, core & tools) by executing the following command:

ssh -i <ats private key> <username>@<ats master Ip>

Example: ssh -i atskey.pem cloud-user@10.75.189.120

Custom Folder Implementation

New custom test cases folders (cust_newfeatures, cust_regression and cust_performance) have been introduced to accommodate the customization's to original product packaged test cases. These folders carry the customized test cases (any new test cases added by customers / subset of test cases from the original product supplied test cases / modified test cases).

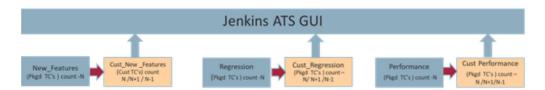
Initially when packaged and released, both the product test case folders (newfeatures, regression and performance) and the custom test case folders (cust_newfeatures, cust_regression and cust_performance) carries same set of test cases. Subsequently, customers can use the custom test case folders to carry out any customization's from their side (updates / additions / deletions of test cases) without disturbing the original product packaged test cases / folders. Jenkins always pick the test cases from the custom test cases folders.

Custom Folder Structure is implemented in the Performance Job where Performance-Suite and Cust-Performance-Suite contain the same set of test cases. Customization, such as updates/additions/deletions of test cases, without disturbing the original product packaged test cases/folders can be done in Cust-Performance-Suite.

Custom Folder Structure is implemented in the Health-Check Job where HealthCheck and Cust-HealthCheck contain the same set of test cases. Customization, such as updates/additions/deletions of test cases, without disturbing the original product packaged test cases/folders can be done in Cust-HealthCheck.



Figure 2-1 Summary of Custom Folder Implementation





Test Case Execution

Prerequisites for Test Case Execution

This section provides information about the prerequisites that must be achieved in the following sequence before executing test cases:

1. Location of the Test Cases

- The Cust-Roaming-Suite directory path is /var/lib/jenkins/ workspace/Regression/Cust-Roaming-Suite.
- The Cust-Core-DSR directory path is /var/lib/jenkins/workspace/ Regression/Cust-Core-DSR.
- The New-Features are located in /var/lib/jenkins/workspace/New-Features
- The Performance test cases are located in /var/lib/jenkins/ workspace/Performance/Radius_Traffic
- All Cleanup pipeline test cases are located in /var/lib/jenkins/ workspace/Cleanup/Cust-Cleanup-DSR

2. SUT Requirements

Table 3-1 DSR and SDS SUT Details

Server	Quantity	
DSR SUT		
DSR NOAM Active	1	
DSR NOAM Standby	1	
DSR Signaling SOAM Active	1	
DSR Signaling SOAM Standby	1	
DA-MP	2	
IPFE	2	
SDS SUT		
SDS NOAM Active	1	
SDS NOAM Standby	1	
Query Server	1	
SDS Signaling SOAM Active	1	
SDS Signaling SOAM Standby	1	
DP Server	1	





Ensure that when the SUT is created using VNFM, then Mediation, FABR, and RBAR features are enabled.

3. Update SUT Information in ATS

Update /home/cloud-user/Verizon-drop1/dsr-atsV2/dut.yaml with the SUT details. The same will be automatically copied to the required location when the execution starts from Jenkins. Edit the dut.yaml file. Update the dut.yaml file by referring to the following file:

```
DSRVIP:
  - name: DSRNOVIP
   IP: 2606:b400:605:b919:86b8:2ff:fe60:6278
  - name: DSRSOVIP
    IP: 2606:b400:605:b919:86b8:2ff:fe60:62ab
   SIGNALING_IPs:
      - IP: 2004:db8:1116::24
        type: LocalIp
      - IP: 2004:db8:1116::e
       type: LocalIp
      - IP: 2004:db8:1116::10
        type: IpfeTsa
      - IP:
        type: IpfeTsa
    ipfeInitiatorDampIp:
      - IP: 2004:db8:1116::24
   MP_XMI:
      - IP: 2606:b400:605:b919:86b8:02ff:fe60:629e
        type: LocalIp
      - IP: 2606:b400:605:b919:86b8:02ff:fe60:6298
        type: LocalIp
SDSVIP:
  - name: SDSNOVIP
    IP: 2606:b400:605:b919:86b8:2ff:fe60:6295
  - name: SDSSOVIP
   IP: 2606:b400:605:b919:86b8:2ff:fe60:627c
  - name: SDSQS
    IP: 2606:b400:605:b919:86b8:02ff:fe60:6242
LOCAL:
  - SIGNALING_IPs:
      - 2004:db8:1116::11
      - 2004:db8:1116::11
  - RERUN_COUNT: 1
   SDS ENABLE: N
UI data:
  - name: UIData
   PassWordUI: tekware
   UserNameUI: guiadmin
   noamHost: http://[2606:b400:605:b919:86b8:2ff:fe60:6278]
    soamHost: http://[2606:b400:605:b919:86b8:2ff:fe60:62ab]
    StandBysoamHost: http://
```



```
[2606:b400:605:b919:86b8:02ff:fe60:6290]
    StandBynoamHost: http://
[2606:b400:605:b919:86b8:02ff:fe60:628f]
    sdsnoamHost: http://[2606:b400:605:b919:86b8:2ff:fe60:6295]
    sdssoamHost: http://[2606:b400:605:b919:86b8:2ff:fe60:627c]
    StandBysdssoamHost: http://
[2606:b400:605:b919:86b8:02ff:fe60:629f]
    StandBysdsnoamHost: http://
[2606:b400:605:b919:86b8:02ff:fe60:62c0]
```

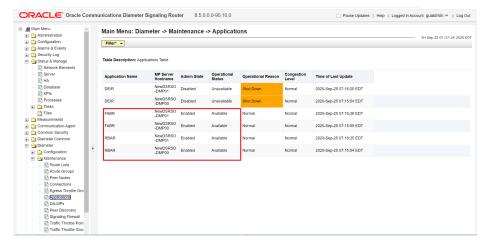
- Update /home/cloud-user/Verizon-drop1/dsr-atsV2/auth.yaml.
 The same will be automatically copied to the required location when the execution starts from Jenkins. Server credentials, such as username and password, displayed in the following image can be updated if required.
- The rerun functionality in the Roaming suite can be changed by updating the dut.yaml file. The values are:
 - RERUN_COUNT: 1SDS_ENABLE: N
- 4. Enabling the Feature on SUT



Ensure that there are no backup files in the /var/TKLC/db/filemgmt/backup location while executing the database restore test case on SOAM. If there are backup files, then the Mediation feature must be enabled in each backup file. Otherwise, sometimes the Mediation feature might get disabled while execution of this test case.

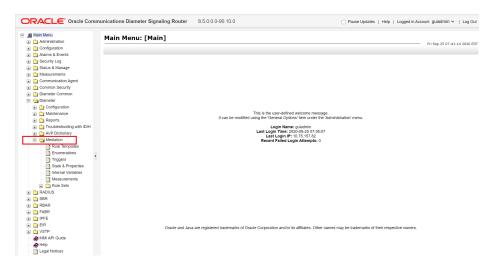
Ensure that RBAR and FABR are enabled as displayed in the following image:

Figure 3-1 RBAR and FABR Enabled on the DSR GUI



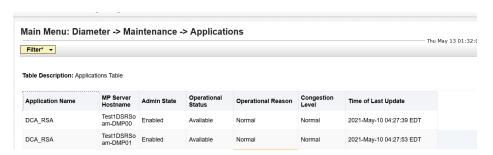
Ensure that Mediation is enabled as displayed in the following image:

Figure 3-2 Mediation Enabled on the DSR GUI



Ensure that DCA is enabled as displayed in the following image:

Figure 3-3 DCA Enabled on the DSR GUI



Configure ComAgent connections on DSR by referring to the *Diameter Signaling Router Cloud Installation Guide*.



The DSR BUG 29035530 can cause ATS GUI case failure due to the "Security Violation" error when you perform any common GUI operation. This can be identified in $\protect\mbox{Var/TKLC/appw/logs/Process/AppWorksGui.log}$ by searching for the Security violation by a user keyword.

Test Case Execution Process

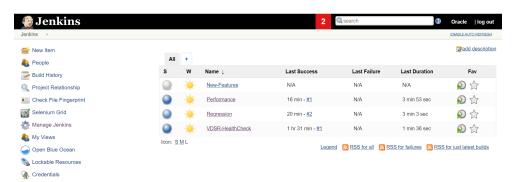
Perform the following procedure to execute the testcases and check the VDSR health status.

Complete the tasks described in Prerequisites for Test Case Execution.

- 1. Go to http://<ATS_IP>:8080/.
- Log in to the Jenkins GUI using your login credentials.The system displays the Jenkins GUI.



Figure 3-4 Jenkins GUI



3. To execute the required testcases, in the Fav column, click the corresponding button for the following suite:

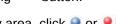


- New-Features: This suite contains the following new features:
 - Rf_Routing
 - Radius Routing
 - Rx_Gateway_MCPTT
 - Gy_S6b_Stateless_Routing
- **Performance**: This suite checks whether the performance testcases are passed on the current DSR build. It runs the Relay and FABR traffic. This suite consists of Diameter_Traffic and Radius_Traffic execution suites.
- **Regression**: This suite consists of all the Roaming and Core testcases. It contains all the testcases as per the requirement document.
- VDSR-HealthCheck: This suite checks the status of VDSR. This suite checks whether all the prerequisites are complete or not.
- Cleanup: This suite consists of cleanup feature to perform cleanup on SUT.



You can run these suite in any sequence, however, it is recommended to run the **VDSR-HealthCheck** suite first.

4. To perform the VDSR health check, click the corresponding button



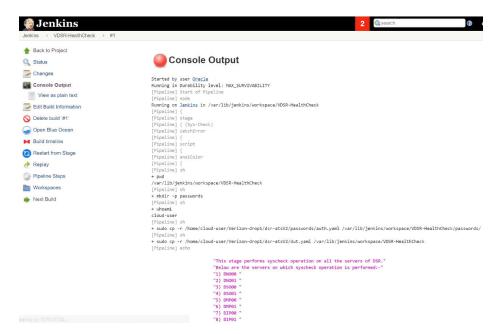
a. In the lower-left corner of the GUI, in the Build History area, click or to check the log in Console Output.

If the build has failed, then the \bigcirc icon appears red (\bigcirc). This indicates that the log contains DSR alarms.

The following image provides an example of a console output:



Figure 3-5 Console Output



- b. If the log contains DSR alarms, clear the alarm and then perform the VDSR health check again by clicking the corresponding health check button ().
 If the build is successful, in the Build History area, the turns .
- To perform Regression, click the corresponding button
 The DSR Automated Test Suite page appears.

Figure 3-6 Regression Parameters



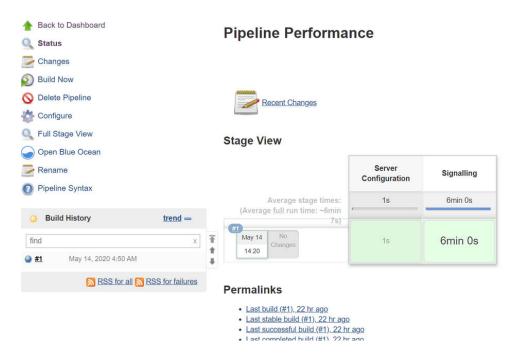
a. Configure the parameters as described in Regression Parameters.



You can change the rerun count in the /var/lib/jenkins/workspace/Regression directory.

- b. Click Build.
- c. In the lower-left corner of the GUI, in the Build History area, click or to check the log in Console Output.
- To check the Performance, click the corresponding ► button.
 The following image provides an example of a Performance build.

Figure 3-7 Performance Build



In the lower-left corner of the GUI, in the Build History area, click
 or
 or
 to check the log in Console Output.

Regression Parameters

The following table describes regression build parameters:

Table 3-2 Regression Build Parameters

Parameter	Description
Execute_Suite	By default, the value of this parameter is Roaming . You can run either Roaming or Core_DSR suite.



Table 3-2 (Cont.) Regression Build Parameters

Parameter	Description	
Select_Option	This parameter has three radio buttons to perform the following tasks: • All: To run all the Roaming cases. • Single/MultipleFeatures: To run multiple feature files together but not all. You must enable the check box of the required features to be executed under the Features parameter. • Single_Feature_Multiple_TestCases: To run single or multiple stestcases within the same feature file. You must enable the radio button of the required features to be executed under the Features parameter. When it is completed, select the check box of the desired testcase to be executed under the Test_Cases parameter on the Jenkins GUI.	
Log_Level	This parameter defines the log level of DSR that can be enabled on the MP. It provides a dropdown of pre-defined log levels. The default value is Not Applicable . This parameter works only when the Single_Feature_Multiple_TestCases option is selected.	
Process_Name	This parameter allows users to define the process name for which the logs are being enabled. It provides a drop-down of pre-defined processes in DSR. The default value is Not Applicable . This parameter works only when the Single_Feature_Multiple_TestCases option is selected.	
SubProcess_Name	This is a string parameter. Users can parse the value of sub process for which the logs are enabled, for example, DRL, DCL, FBR, RBR, and so on. The default value is Not Applicable. This parameter works only when the Single_Feature_Multiple_TestCases option is selected.	

