iMC V7 TAM结合V7设备进行HWTACACS login认证配置

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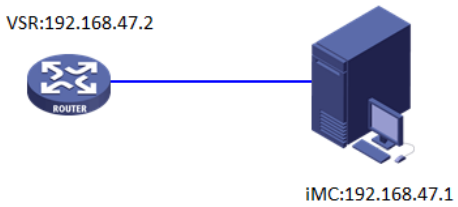
对需要登录到设备上进行操作的终端用户进行认证、授权以及对终端用户执行的操作进行记录。设备作为HWTACACS的客户端，将用户名和密码发给HWTACACS服务器进行验证，用户验证通过并得到授权之后可以登录到设备上进行操作，HWTACACS服务器上记录用户对设备执行过的命令.并且要求telnet登陆设备的用户不能配置ospf的相关命令。对设备super密码也需要认证。



说明：图中设备VSR1000，version 7.1.049, Release 0204P01
iMC 服务器PLAT 7.1 (E0303)，TAM 7.1 (E0302)

1、 路由器配置
开启telnet server服务
telnet server enable
创建HWTACACS方案li
hwtacacs scheme li
配置主认证服务器的IP地址为192.168.47.1，认证端口号为49
primary authentication 192.168.47.1
配置主授权服务器的IP地址为192.168.47.1，认证端口号为49
primary authorization 192.168.47.1
配置主计费服务器的IP地址为192.168.47.1，认证端口号为49
primary accounting 192.168.47.1
配置与认证服务器交互报文时的共享密钥为h3c
key authentication simple h3c
key authorization simple h3c
key accounting simple h3c
配置设备发送HWTACACS报文使用的源地址为192.168.47.2
nas-ip 192.168.47.2

创建ISP域li。
domain li
配置login用户登录认证方法为li方案
authentication login hwtacacs-scheme li local
配置login用户登录授权方法 li方案
authorization login hwtacacs-scheme li local
配置login用户登录计费方法为li方案
accounting login hwtacacs-scheme li local
配置super认证方法为li方案
authentication super hwtacacs-scheme li
配置命令授权方法为li方案
authorization command hwtacacs-scheme li
配置命令统计方法li方案
accounting command hwtacacs-scheme li

user-interface vty 0 4
#配置telnet登陆方式认证为AAA
authentication-mode scheme
配置用户使用VTY用户界面登录设备时，需要服务器授权才能执行命令
command authorization
配置用户使用VTY 用户界面登录设备时，执行的命令需要在HWTACACS服务器上做记录。

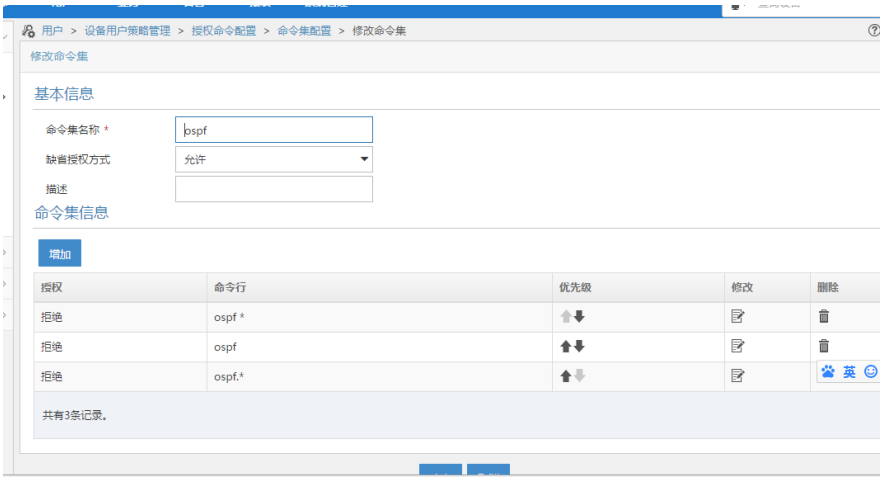
command accounting

2、iMC侧配置

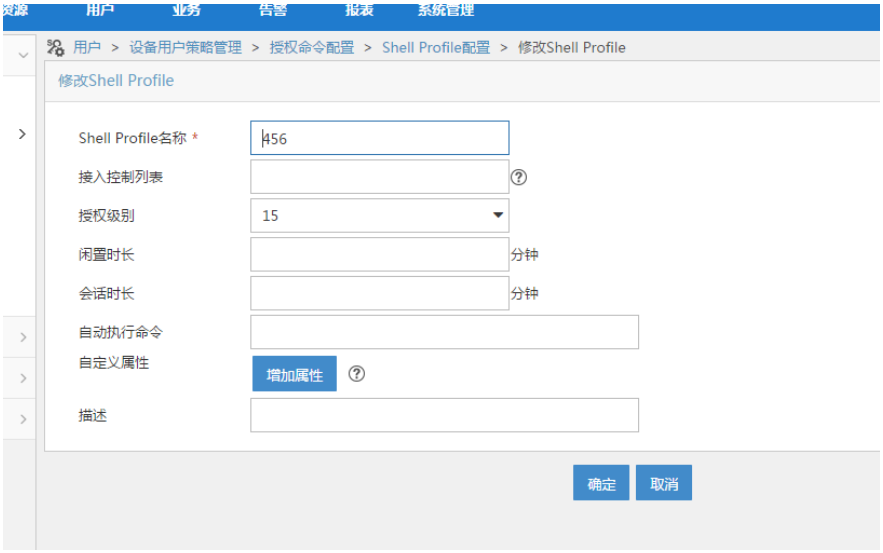
配置过程：

1.配置设备类型和设备管理

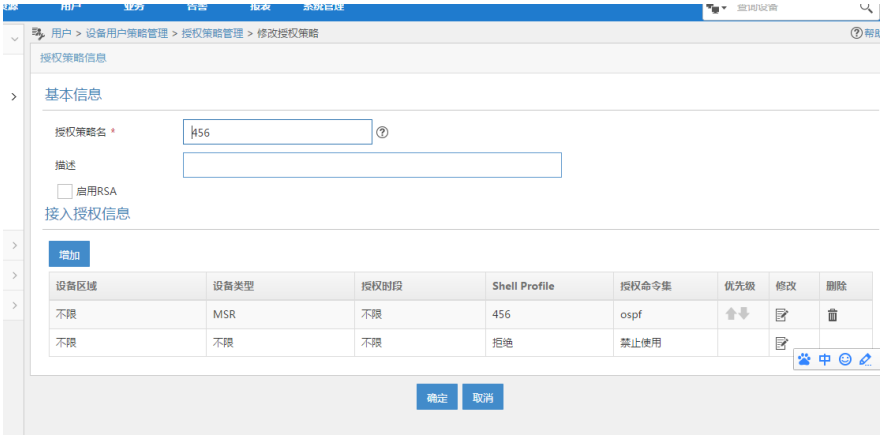
2.配置命令集不能使用ospf命令



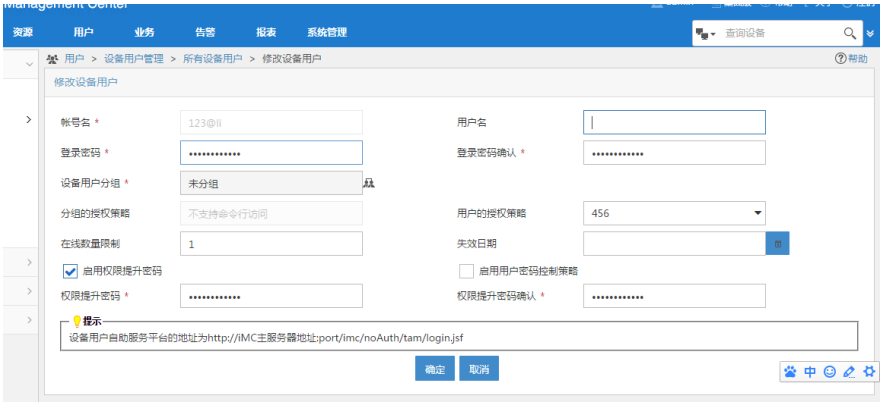
3.配置Shell profile “456”，设置等级为15（V7设备的最高权限级别为15）



4、配置授权策略，与之前配置的授权命令集”ospf”和shell profile”456”相关联。



5.配置设备用户



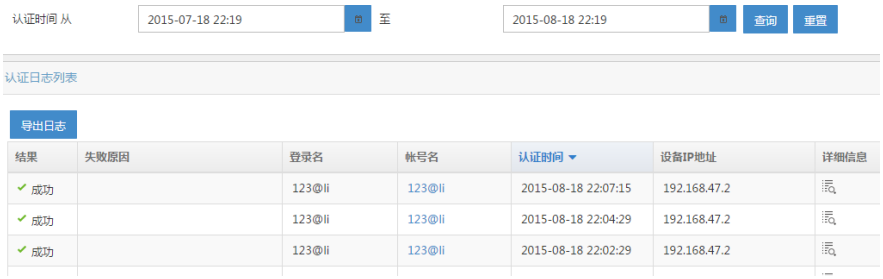
测试：

<H3C>sy
System View: return to User View with Ctrl+Z.
[H3C]ospf 1
[H3C-ospf-1]qu
[H3C]bgp 1
[H3C-bgp]
[H3C-bgp]
[H3C-bgp]qu
[H3C]ospf
System is busy or this command can& # 39;t be executed because of no such privilege!
[H3C]ospf
System is busy or this command can& # 39;t be executed because of no such privilege!
[H3C]
[H3C]ospf 1
System is busy or this command can& # 39;t be executed because of no such privilege!
[H3C]ospf 2
System is busy or this command can& # 39;t be executed because of no such privilege!
[H3C]ospf 4
System is busy or this command can& # 39;t be executed because of no such privilege!
[H3C]qu
<H3C>sy
System View: return to User View with Ctrl+Z.
[H3C]bgp 1
[H3C-bgp]qu
[H3C]ospf
System is busy or this command can& # 39;t be executed because of no such privilege!
[H3C]ospf 1 ?
  router-id   OSPF Private Router ID
  vpn-instance VPN instance
  <cr>

[H3C]ospf 1 rou
[H3C]ospf 1 router-id 1.1.1.1
System is busy or this command can& # 39;t be executed because of no such privilege!

查看日志记录：

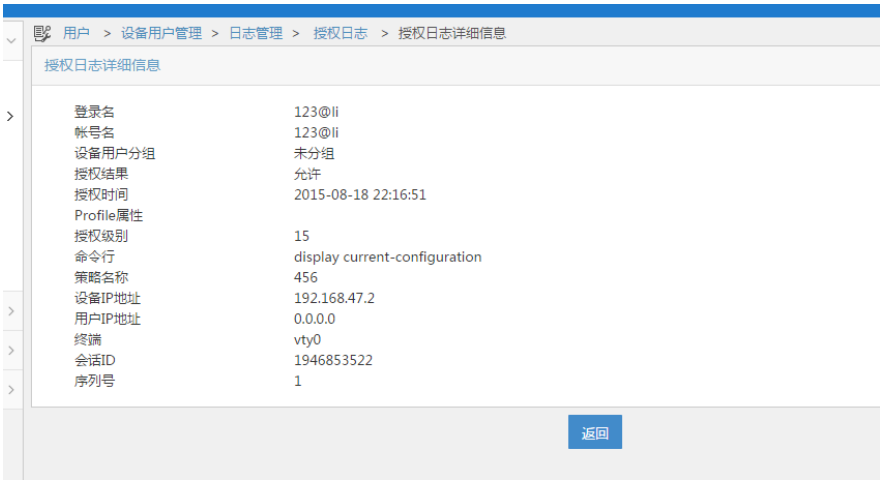
认证日志：



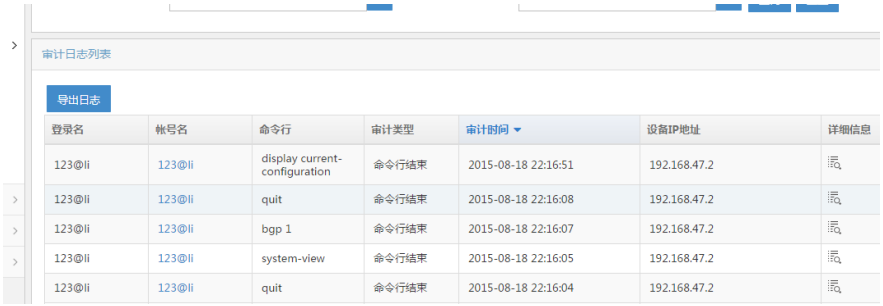
授权日志：

禁止使用ospf命令

可以使用其他的命令



审计日志：



登陆过程中在设备上debugging hwtacacs all

在设备上的操作如下：

<H3C>sy

System View: return to User View with Ctrl+Z.

[H3C]qu

<H3C>sy

System View: return to User View with Ctrl+Z.

[H3C]

设备上debug显示的信息：

<H3C>debugging hwtacacs all

<H3C>t m

The current terminal is enabled to display logs.

<H3C>t d

The current terminal is enabled to display debugging logs.

<H3C>*Aug 18 22:24:50:207 2015 H3C TACACS/7/EVENT: PAM_TACACS: Processing TACACS stop-accounting.

*Aug 18 22:24:50:207 2015 H3C TACACS/7/EVENT: PAM_TACACS: Dispatching request, Primitive: accounting-stop.

*Aug 18 22:24:50:207 2015 H3C TACACS/7/EVENT: PAM_TACACS: Creating request data, data type: START

*Aug 18 22:24:50:207 2015 H3C TACACS/7/EVENT: PAM_TACACS: Session successfully created.

*Aug 18 22:24:50:207 2015 H3C TACACS/7/EVENT: PAM_TACACS: Getting available server, server-ip=192.168.47.1, server-port=49, VPN instance=--(public).

*Aug 18 22:24:50:242 2015 H3C TACACS/7/EVENT: PAM_TACACS: Connecting to server...

*Aug 18 22:24:50:242 2015 H3C TACACS/7/EVENT: PAM_TACACS: Reply SocketFd received EPOLLOUT event.

*Aug 18 22:24:50:242 2015 H3C TACACS/7/EVENT: PAM_TACACS: Connection succeeded, server-ip=192.168.47.1, port=49, VPN instance=--(public).

*Aug 18 22:24:50:242 2015 H3C TACACS/7/EVENT: PAM_TACACS: Encapsulating accounting request packet.

*Aug 18 22:24:50:242 2015 H3C TACACS/7/send_packet:

version: 0xc0 type: ACCOUNT_REQUEST seq_no: 1 flag: ENCRYPTED_FLAG

session-id: 0xd4e0bfef

length of payload: 75

flags: STOP

authen_method: NONE authen_service: LOGIN

user_len: 6 port_len: 4 rem_len: 0 arg_cnt: 5

arg0_len: 9 arg1_len: 10 arg2_len: 13 arg3_len: 11

arg4_len: 8

user: 123@li //认证的用户是123@li

port: vty0 //通过vty0登陆

rem_addr:

arg0: task_id=0 arg1: timezOne=0

arg2: service=shell arg3: priv-lvl=15 //服务是shell命令行，等级为15

arg4: cmd=quit //下发的命令为 quit

*Aug 18 22:24:50:261 2015 H3C TACACS/7/EVENT: PAM_TACACS: Reply SocketFd received EPOLLIN event.

*Aug 18 22:24:50:261 2015 H3C TACACS/7/recv_packet:

version: 0xc0 type: ACCOUNT_REPLY seq_no: 2 flag: ENCRYPTED_FLAG

session-id: 0xd4e0bfef

length of payload: 5

server_msg len: 0 data len: 0 status: STATUS_SUCCESS

server_msg:
data:
*Aug 18 22:24:50:261 2015 H3C TACACS/7/EVENT: PAM_TACACS: Processing accounting reply packet.
*Aug 18 22:24:50:261 2015 H3C TACACS/7/EVENT: PAM_TACACS: Processed accounting-stop reply message, resultCode: 0.
*Aug 18 22:24:50:261 2015 H3C TACACS/7/EVENT: PAM_TACACS: TACACS stop-accounting succeeded.
*Aug 18 22:24:50:261 2015 H3C TACACS/7/EVENT: PAM_TACACS: Reply message successfully sent.
*Aug 18 22:24:52:881 2015 H3C TACACS/7/EVENT: PAM_TACACS: Processing TACACS authorization.
*Aug 18 22:24:52:881 2015 H3C TACACS/7/EVENT: PAM_TACACS: Dispatching request, Primitive: authorization.
*Aug 18 22:24:52:882 2015 H3C TACACS/7/EVENT: PAM_TACACS: Creating request data, data type: START
*Aug 18 22:24:52:882 2015 H3C TACACS/7/EVENT: PAM_TACACS: Session successfully created.
*Aug 18 22:24:52:882 2015 H3C TACACS/7/EVENT: PAM_TACACS: Getting available server, server-ip=192.168.47.1, server-port=49, VPN instance=--(public).
*Aug 18 22:24:52:882 2015 H3C TACACS/7/EVENT: PAM_TACACS: Connecting to server...
*Aug 18 22:24:52:883 2015 H3C TACACS/7/EVENT: PAM_TACACS: Reply SocketFd received EPOLLOUT event.
*Aug 18 22:24:52:883 2015 H3C TACACS/7/EVENT: PAM_TACACS: Connection succeeded, server-ip=192.168.47.1, port=49, VPN instance=--(public).
*Aug 18 22:24:52:883 2015 H3C TACACS/7/EVENT: PAM_TACACS: Encapsulating authorization request packet.
*Aug 18 22:24:52:883 2015 H3C TACACS/7/send_packet:
version: 0xc0 type: AUTHOR_REQUEST seq_no: 1 flag: ENCRYPTED_FLAG
session-id: 0xe9467887
length of payload: 61
authen_method: NONE priv_lvl: 15 authen_type: ASCII authen_service: LOGIN
user_len: 6   port_len: 4   rem_len: 0   arg_cnt: 3
arg0_len: 13   arg1_len: 15   arg2_len: 12
user: 123@li
port: vty0
rem_addr:
arg0: service=shell arg1: cmd=system-view
arg2: cmd-arg=<cr>
*Aug 18 22:24:53:010 2015 H3C TACACS/7/EVENT: PAM_TACACS: Reply SocketFd received EPOLLIN event.
*Aug 18 22:24:53:010 2015 H3C TACACS/7/recv_packet:
version: 0xc0 type: AUTHOR_REPLY seq_no: 2 flag: ENCRYPTED_FLAG
session-id: 0xe9467887
length of payload: 6
Status: STATUS_PASS_ADD arg_cnt: 0 server_msg len: 0 data len: 0
server_msg:
data:
*Aug 18 22:24:53:010 2015 H3C TACACS/7/EVENT: PAM_TACACS: Processing authorization reply packet.
*Aug 18 22:24:53:010 2015 H3C TACACS/7/EVENT: PAM_TACACS: Reply message successfully sent.
*Aug 18 22:24:53:010 2015 H3C TACACS/7/EVENT: PAM_TACACS: Processed authorization reply message, resultCode: 0.
*Aug 18 22:24:53:010 2015 H3C TACACS/7/EVENT: PAM_TACACS: TACACS authorization succeeded.
*Aug 18 22:24:53:010 2015 H3C TACACS/7/EVENT: PAM_TACACS: Processing TACACS stop-accounting.
*Aug 18 22:24:53:010 2015 H3C TACACS/7/EVENT: PAM_TACACS: Dispatching request, Primitive: accounting-stop.
*Aug 18 22:24:53:010 2015 H3C TACACS/7/EVENT: PAM_TACACS: Creating request data, data type: START
*Aug 18 22:24:53:011 2015 H3C TACACS/7/EVENT: PAM_TACACS: Session successfully c

reated.
*Aug 18 22:24:53:011 2015 H3C TACACS/7/EVENT: PAM_TACACS: Getting available serv
er, server-ip=192.168.47.1, server-port=49, VPN instance=--(public).
*Aug 18 22:24:53:083 2015 H3C TACACS/7/EVENT: PAM_TACACS: Connecting to server..
.
*Aug 18 22:24:53:083 2015 H3C TACACS/7/EVENT: PAM_TACACS: Reply SocketFd receive
d EPOLLOUT event.
*Aug 18 22:24:53:084 2015 H3C TACACS/7/EVENT: PAM_TACACS: Connection succeeded,
server-ip=192.168.47.1, port=49, VPN instance=--(public).
*Aug 18 22:24:53:084 2015 H3C TACACS/7/EVENT: PAM_TACACS: Encapsulating accounti
ng request packet.
*Aug 18 22:24:53:084 2015 H3C TACACS/7/send_packet:
version: 0xc0 type: ACCOUNT_REQUEST seq_no: 1 flag: ENCRYPTED_FLAG
session-id: 0xf8fdfd66
length of payload: 82
flags: STOP
authen_method: NONE authen_service: LOGIN
user_len: 6   port_len: 4   rem_len: 0   arg_cnt: 5
arg0_len: 9   arg1_len: 10   arg2_len: 13   arg3_len: 11
arg4_len: 15
user: 123@li
port: vty0
rem_addr:
arg0: task_id=0 arg1: timezOne=0
arg2: service=shell arg3: priv-lvl=15
arg4: cmd=system-view
*Aug 18 22:24:53:153 2015 H3C TACACS/7/EVENT: PAM_TACACS: Reply SocketFd receive
d EPOLLIN event.
*Aug 18 22:24:53:153 2015 H3C TACACS/7/recv_packet:
version: 0xc0 type: ACCOUNT_REPLY seq_no: 2 flag: ENCRYPTED_FLAG
session-id: 0xf8fdfd66
length of payload: 5
server_msg len: 0 data len: 0 status: STATUS_SUCCESS
server_msg:
data:
*Aug 18 22:24:53:153 2015 H3C TACACS/7/EVENT: PAM_TACACS: Processing accounting
reply packet.
*Aug 18 22:24:53:153 2015 H3C TACACS/7/EVENT: PAM_TACACS: Processed accounting-s
top reply message, resultCode: 0.
*Aug 18 22:24:53:153 2015 H3C TACACS/7/EVENT: PAM_TACACS: TACACS stop-accounting
 succeeded.
*Aug 18 22:24:53:153 2015 H3C TACACS/7/EVENT: PAM_TACACS: Reply message successf
ully sent.

1. 要特别注意正则表达式的使用，比如限制不能使用ospf的命令，一开始设置的只是
Ospf 和ospf *
但是其他命令，比如 ospf 1 或者 ospf 1 rou 1.1.1.1
类似的命令就不能限制了
这时需要配置 ospf.* 来限制ospf 1或者ospf 1 rou 1.1.1.1 等类似的命令
因为在正则表达式里面“.”代表的是 空格

2. 注意配置
  # 配置命令授权方法为li方案
 authorization command hwtacacs-scheme li
配置命令统计方法li方案
 accounting command hwtacacs-scheme li
这两个命令，否则会出现认证通过了，但是telnet之后提示服务拒绝，无法对设备进行配置。