ctys-uc-**VBOX**(7)
Use-**C**ases for **VBOX**

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1 General

This is an alpha version, where the post-install functionality is provided first. Thus the installation and configuration has to be performed by the provided means of the supplier for now.

2 Install and Configure a VBOX

For current version the standard facilities of VirtualBox(TM) has to be utilized.

3 CREATE a session

The following call starts a session:

```
ctys -t vbox -a create=l:vbox001,b:\$VMDIRPATH,console:vbox lab02
```

The filename option "b:" is used, which sets the root directory for the subtree to be scanned for the VM defined by the label parameter 'l:vbox001'. The evaluation could be processed from cacheDB and/or by scanning the filesystem on the execution target. The cacheDB is influenced by the option **'-c'**.

The console is of type VBOX, which is a tightly coupled synchronous console, where the execution states of client and server are correlated.

The directory VMDIRPATH could be any directory pointing to path containing the vdi-file and an optional ctys-file, either self or within the subtree..

4 CANCEL a session

The UnifiedSessionsManager implements the standard behaviour, to try a native call to the GuestOS first, if that fails or a timeout is hit, than the VMware hypervisor interface **vmrun** is called.

```
ctys -t vbox -a cancel=l:vbox001,poweroff:0 lab02
```

5 LIST sessions

The simple LIST call

```
ctys -a list lab02 ws2
```

produces the output:

```
TCP-container|TCP-guest         |label       |stype    |accel|c|user   |group
\sout{---------}+\sout{------------}+\sout{-------}+\sout{-----}+\sout{-}+-+\sout{--}+\sout{------}
ws2          |-                |vbox001     |RDP      |-    |C|acue   |ldapusers
ws2          |ws2.soho.        |-           |-        |HVM  |S|-      |-
ws2          |ws2              |-           |-        |HVM  |S|-      |-
ws2          |-                |vbox001     |SSH(VBOX)|-    |T|acue   |ldapusers
lab02.soho   |-                |LAB02       |VNC      |-    |C|root   |root
lab02.soho   |-                |tstCF       |VNC      |-    |S|acue   |ldapusers
lab02.soho   |-                |LAB02chkusr |VNC      |-    |S|chkusr |ldapusers
lab02.soho   |-                |LAB02       |VNC      |-    |S|root   |root
lab02.soho   |08:00:27:D2:9E:D9|vbox001     |VBOX     |HVM  |S|acue   |ldapusers
lab02.soho   |-                |vbox004     |VBOX     |-    |S|root   |root
lab02.soho   |lab02.soho.      |-           |-        |HVM  |S|-      |-
```

This is the default case for two VMs - vbox001 and vbox004 - running on lab02 with CONNECTIONFOR-WARDING to ws2, and local only on lab02. The CONNECTIONFORWARDING mode is currently supported for any asynchronous console type. The intermediate SSH tunnel - here SSH(VBOX) is established automatically by the **-L CF** option.

The same call with the suboption 'machine' and 'titleidx'. The 'machine' suboption forces all available fields to be displayed. The 'tittleidx' displays the human readable names of the fields, including the canonical field index for selection, e.g. within custom tables.

```
ctys -a list=machine,titleidx lab02 ws2
```

The output is simply formatted as a text-string to the screen width, thus without consideration of the content.

```
ContainingMachine(1);SessionType(2);Label(3);ID(4);UUID(5);MAC(6);TCP(7);DISPLA
Y(8);ClientAccessPort(9);ServerAccessPort(10);PID(11);UID(12);GUID(13);C/S-Type
(14);JobID(15);IFNAME(16);RESERVED1(17);CONTEXTSTRG(18);EXECPATH(19);HYPERRELRU
N(20);ACCELERATOR(21);ARCH(22)
ws2;RDP;vbox001;;;;;;5950;;901;acue;ldapusers;CLIENT;;;;;;/usr/bin/rdesktop;rdes
ktop-1.6.0.;;x86\_64
ws2;;;;/etc/ctys.d/vm.conf;;00:23:54:2e:eb:96;172.20.1.70;;;;1;;;SERVER;bond0;;;
;Linux-2.6.26-ws2-deb-005-ws2-deb-005;debian-5.0;HVM;x86\_64
ws2;;;;/etc/ctys.d/vm.conf;;00:23:54:2e:eb:96;;;;;1;;;SERVER;eth0;;;;Linux-2.6.2
6-ws2-deb-005-ws2-deb-005;debian-5.0;HVM;x86\_64
ws2;SSH(VBOX);vbox001;5950-5904;;;;;5950;5904;891;acue;ldapusers;TUNNEL;2010071
3081630:22795:0:1:1;;;;;;;;
lab02.soho;VNC;LAB02;1;;;;1;;;27430;root;root;CLIENT;;;;;;/usr/bin/vncviewer;Rea
lVNC-4.1.2;;x86\_64
lab02.soho;VNC;tstCF;3;;;;3;5903;;2213;acue;ldapusers;SERVER;20100712104607:190
37:0:1:1;;;;Xvnc;RealVNC-4.1.2;;x86\_64
lab02.soho;VNC;LAB02chkusr;2;;;;2;5902;;3267;chkusr;ldapusers;SERVER;2010071020
0016:31650:0:1:1;;;;Xvnc;RealVNC-4.1.2;;x86\_64
lab02.soho;VNC;LAB02;1;;;;1;5901;;6475;root;root;SERVER;;;;;Xvnc;RealVNC-4.1.2;
;x86\_64
lab02.soho;VBOX;vbox001;/mntn/vmpool/vmpool05/vbox/test/initial/vbox001/vbox001
.vdi;531f42f1-9c64-425e-bf88-319cbe592453;08:00:27:D2:9E:D9;;;5904;;5525;acue;l
dapusers;SERVER;;;;;;/usr/lib/virtualbox/VBoxHeadless;VirtualBox-3.1.2;HVM;x86\_6
4
lab02.soho;VBOX;vbox004;;;;;;;;9920;root;root;SERVER;;;;;;/usr/lib/virtualbox/VB
oxHeadless;VirtualBox-3.1.2;;
lab02.soho;;;;/etc/ctys.d/vm.conf;;00:0E:0C:CF:5C:12;172.20.1.75;;;;;1;;;SERVER;e
th0;;;;Linux-2.6.18-164.15.1.el5;CentOS-5.4;HVM;x86\_64
```

The formatted display of results could be arbitrarily varied by custom tables as shown in the following example. These could be either provided as a call parameter, or stored as MACROs persistently.

```
ctys -a list=machine,\
    tab\_gen:3\_label\_10\%\%2\_TYPE\_8\%\%1\_PM\_10\%\%5\_UUID\_12\%\%6\_MAC\_17\%\%7\_TCP\_13\
    lab02 localhost
```

The output results to:

```
label      |TYPE    |PM        |UUID        |MAC              |TCP
\sout{------}+\sout{----}+\sout{------}+\sout{-------}+\sout{------------}+\sout{--------}
vbox001    |RDP     |ws2       |            |                 |

\begin{center}\begin{tabular}{cc}
|ws2 & |00:23:54:2e:eb:96|172.20.1.70 \\
|ws2 & |00:23:54:2e:eb:96| \\
\end{tabular}\end{center}

vbox001    |SSH(VBOX|ws2       |            |                 |
LAB02      |VNC     |lab02.soho|            |                 |
tstCF      |VNC     |lab02.soho|            |                 |
LAB02chkus|VNC      |lab02.soho|            |                 |
LAB02      |VNC     |lab02.soho|            |                 |
vbox001    |VBOX    |lab02.soho|531f42f1-9c6|08:00:27:D2:9E:D9|
vbox004    |VBOX    |lab02.soho|            |                 |

\begin{center}\begin{tabular}{c}
|lab02.soho|            |00:0E:0C:CF:5C:12|172.20.1.75 \\
\end{tabular}\end{center}
```

6 ENUMERATE sessions

The following call displays the main identifier of the test-pool VMs. For additional information refer to User-Manual:"Display of Available Sessions".

```
ctys -a enumerate=macro:TAB\_ENUM\_LST,b:/mntn/vmpool/vmpool05/vbox/test/initial lab02
```

The resulting display is:

```
label  |stype|TCP    |MAC    |UUID                           |ID
\sout{---}+\sout{-}+\sout{---}+\sout{---}+\sout{--------------------------}+\sout{-------------------
vbox004|VBOX |       |       |                               |itial/vbox004/vbox004.vdi
vbox001|VBOX |       |       |531f42f1-9c64-425e-bf88-319cbe59|itial/vbox001/vbox001.vdi
vbox002|VBOX |       |       |                               |itial/vbox002/vbox002.vdi
```

The same executed on a machine **with valid VirtualBox(TM)** installation and set 'machine' parameters.

```
ctys -a enumerate=machine,b:/mntn/vmpool/vmpool05/vbox/test/initial lab02
```

The resulting display is:

```
lab02.soho;VBOX;vbox004;/mntn/vmpool/vmpool05/vbox/test/initial/vbox004/vbox004.vdi;;;;;
;;;;;;;;;;;DISABLED;;;;;;;;;;;VirtualBox-3.1.2;;;;;;;;;;;;;;VERSION:VirtualBox-3.1.2;
lab02.soho;VBOX;vbox001;/mntn/vmpool/vmpool05/vbox/test/initial/vbox001/vbox001.vdi;531f
42f1-9c64-425e-bf88-319cbe592453;;;;5904;;;;;OpenBSD;;;;;DISABLED;;;;;;;;;;;VirtualBox-3.
1.2;HVM;;;;;;;;x86\_64;;320;1;VERSION:VirtualBox-3.1.2;
lab02.soho;VBOX;vbox002;/mntn/vmpool/vmpool05/vbox/test/initial/vbox002/vbox002.vdi;;;;;
;;;;;;;;;;;DISABLED;;;;;;;;;;;VirtualBox-3.1.2;;;;;;;;;;;;;;VERSION:VirtualBox-3.1.2;
```

The same executed on a machine **without installed VirtualBox(TM)** and set 'machine' parameter.

```
ctys -a enumerate=machine,b:/mntn/vmpool/vmpool05/vbox/test/initial
```

The resulting display is:
The difference is the missing of any attribute where the usage of utilities contained within VirtualBox(TM) is required. This is basically the same case as the missing of access permissions.

```
ws2;VBOX;vbox004;/mntn/vmpool/vmpool05/vbox/test/initial/vbox004/vbox004.vdi;;;;;;;;;;;;;
;;;DISABLED;;;;;;;;;;;;;;;;;;;;;;;;
ws2;VBOX;vbox001;/mntn/vmpool/vmpool05/vbox/test/initial/vbox001/vbox001.vdi;;;;;;;;;;;;;
;;;DISABLED;;;;;;;;;;;;;;;;;;;;;;;;
ws2;VBOX;vbox002;/mntn/vmpool/vmpool05/vbox/test/initial/vbox002/vbox002.vdi;;;;;;;;;;;;;
;;;DISABLED;;;;;;;;;;;;;;;;;;;;;;;;
```

7 Display of Available Sessions

Once the basic installation and setup is accomplished, first a file-scan based start of a VM should be performed. Therefore the root directory for scanned subtree should be set in order to reduce the actual scan duration. The option **-c off** deactivates the use of the nameservice cache for an initially empty cacheDB, thus suppresses several warnings and error messages of internally called tools.
For further informatio refer to the CREATE action.

The next step - after successful installation and configuration of the UnifiedSesssionsManager is the creation of a populated cacheDB by usage of **ctys-vdbgen(1)** for storage of a list of actually available instances. This is by default applicable on distributed machines and is performed by default as parallel-tasks with minor dependency on the count on targets. The following call scans a test group with 4VMs, where one has no access permission at all, thus is hidden.

```
ctys-vdbgen \
   --replace ctys-vdbgen \
   --replace \
   --cacheDB=/homen/acue/.ctys/db/vbox01 \
   --base=/mntn/vmpool/vmpool05/vbox/test/initial \
   lab0

ctys-vhost -o pm,label,ids app2 vmw acue tst-ctys
```

The following call of **ctys-vhost** lists all available VMs with given constraints, in this case all instances of VBOX which could be started by the user "acue" on the host "app2". The set displayed has to be additionally of the set "tst-ctys", which is the testpool for the UnifiedSessionsManager.

```
ctys-vhost -p /homen/acue/.ctys/db/vbox01/ -o  pm,label,ids .
```

The **pm**, the **ids** and the **label** are displayed as a result.
The additional string '.' is used as a awk-regexpr for any.

```
lab02.soho;vbox001;/mntn/vmpool/vmpool05/vbox/test/initial/vbox001/vbox001.vdi
lab02.soho;vbox002;/mntn/vmpool/vmpool05/vbox/test/initial/vbox002/vbox002.vdi
lab02.soho;vbox004;/mntn/vmpool/vmpool05/vbox/test/initial/vbox004/vbox004.vdi
```

8   Change LIST Output by Custom Tables

The previous output, which is by default displayed in TERSE format could be formatted by a generic custom
table. The following call displays the required canonical field indexes.

```
ctys-vhost -p /homen/acue/.ctys/db/vbox01/ -o  pm,label,ids,titleidx .
```

The indexes in title line are prefixes as an extended table title by **TITLEIDX**. The values are the so calle
'Canonical Indexes' of the database records to be used for definition of custom tables.

```
ContainingMachine(1);Label(3);ID(4);SSHport(27)
lab02.soho;vbox001;/mntn/vmpool/vmpool05/vbox/test/initial/vbox001/vbox001.vdi
lab02.soho;vbox002;/mntn/vmpool/vmpool05/vbox/test/initial/vbox002/vbox002.vdi
lab02.soho;vbox004;/mntn/vmpool/vmpool05/vbox/test/initial/vbox004/vbox004.vdi
```

This values could be now used to define the output table as:

```
ctys-vhost \
    -o pm,label,ids,tab\_gen:1\_PM\_7\%\%3\_label\_4\%\%4\_ID\_30 \
    lab02
```

As could be seen in the following output, this table configuration is not really helpful. The field sizes are too
short, and the common leading part of the pathnames for the ID fields is quite long.

```
PM      |labe|ID
\sout{---}+\sout{--+---------------------------}
lab02.s|vbox|/mntn/vmpool/vmpool05/vbox/tes
lab02.s|vbox|/mntn/vmpool/vmpool05/vbox/tes
lab02.s|vbox|/mntn/vmpool/vmpool05/vbox/tes
```

The following changes might help in advance of usability:

```
ctys-vhost \
    -o pm,label,ids,tab\_gen:1\_PM\_11\%\%3\_label\_9\%\%4\_ID\_30\_L \
    lab02
```

Although this is much more helpful, the raise of the ID value should Ahelp some more.

```
PM          |label     |ID
\sout{-------}+\sout{-----}+\sout{--------------------------}
lab02.soho |vbox001  |st/initial/vbox001/vbox001.vdi
lab02.soho |vbox002  |st/initial/vbox002/vbox002.vdi
lab02.soho |vbox004  |st/initial/vbox004/vbox004.vdi
```

9   Use MACROs for Custom Tables

The previous examples could be stored as MACROs and called just by their macro name. Several preconfigured macros arre available and could be listed with the utility **ctys-macros**. Addtional Information on MACROs is available within the User-Manual.

10   SEE ALSO

ctys(1) , *ctys-CLI(1)* , *ctys-configuration-VBOX(7)* , *ctys-createConfVM(1)* , *ctys-groups(1)* , *ctys-macros(1)* ,
ctys-plugins(1) , *ctys-RDP(1)* , *ctys-uc-VBOX(7)* , *ctys-vdbgen(1)* , *ctys-vhost(1)* , *ctys-VNC(1)* , *ctys-X11(1)*
For System Tools:
rdesktop: [http://www.rdesktop.org]

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                          <https://github.com/unifiedsessionsmanager>

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