

HANA Express Document

CLOUDWRXS – Azure Marketplace – Hana Express

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Created by:	Cloudwrxs Inc.

Change history

Date	Version	Created by	Description of change
23-Oct-2021	1.0	Cloudwrxs Inc.	Initial version

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1. Purpose, scope, and users

The purpose of this document is to provide image information to cloudwrxs HANA Express Image on Azure.

2. Reference documents

- The review was performed using configuration information available on SAP best practices.

Hana Express Installation

File System Requirements for Hana Express: Below File system is required for installing the sap hana express database.

/hana/shared → Contains executable kernel programs (exe), globally shared data (global), instance profiles (profile), HDB executables (HDB<number>), and uninstallation script and instruntime (hdblcm).

/hana/shared/data → The default path to the data directory depends on the system ID of the SAP HANA host.

/hana/shared/log → The default path to the log directory depends on the system ID of the SAP HANA host

```

20.83.108.112 - PuTTY
hanaexpress:/hana/shared # df -kh /hana/shared
Filesystem      Size  Used Avail Use% Mounted on
/dev/sdc        98G   16G   77G  18% /hana
hanaexpress:/hana/shared # df -kh /hana/shared/data
Filesystem      Size  Used Avail Use% Mounted on
/dev/sdc        98G   16G   77G  18% /hana
hanaexpress:/hana/shared # df -kh /hana/shared/log
Filesystem      Size  Used Avail Use% Mounted on
/dev/sdc        98G   16G   77G  18% /hana
hanaexpress:/hana/shared #
  
```

- Download the Hana Express media and extract them

```

20.83.108.112 - PuTTY
hanaexpress:/hana/HANA_EXPRESS_20_Installation_Media # ls -lrt
total 3472
-rwxr-xr-x 1 3312651 10102 12 Jun 29 2017 LABELIDX.ASC
-rwxr-xr-x 1 3312651 10102 71 Jun 29 2017 LABEL.ASC
-rwxr-xr-x 1 3312651 10102 19229 Jun 3 15:23 install_hsa.sh
-rwxr-xr-x 1 3312651 10102 5404 Jun 3 15:27 install_eml.sh
-rwxr-xr-x 1 3312651 10102 9763 Jun 3 15:30 install_apl.sh
-rwxr-xr-x 1 3312651 10102 17726 Jun 14 18:15 MID.XML
-rwxr-xr-x 1 3312651 10102 15208 Jun 17 03:04 install_sdi.sh
-rwxr-xr-x 1 3312651 10102 1679039 Jul 21 15:34 HXEDownloadManager_linux.bin
-rwxr-xr-x 1 3312651 10102 1613829 Jul 21 15:34 HXECheckUpdate_linux.bin
-rwxr-xr-x 1 3312651 10102 9606 Aug 17 06:20 change_key.sh
-rwxr-xr-x 1 3312651 10102 5192 Aug 17 06:20 hxe_gc.sh
-rwxr-xr-x 1 3312651 10102 53705 Aug 17 06:20 hxe_optimize.sh
-rwxr-xr-x 1 3312651 10102 69570 Aug 17 06:20 hxe_upgrade.sh
-rwxr-xr-x 1 3312651 10102 397 Aug 17 06:20 hxe_info.txt
drwxr-xr-x 11 root root 4096 Oct 3 14:59 DATA_UNITS
hanaexpress:/hana/HANA_EXPRESS_20_Installation_Media #
    
```

- Start the SAP Hana Express Database Installation using hdblcm tool:

```

20.83.108.112 - PuTTY
hanaexpress:/hana/HANA_EXPRESS_20_Installation_Media/DATA_UNITS/HDB_SERVER_LINUX_X86_64 # ls -lrt
total 204
-rwxr-xr-x 1 3312651 10102 97 Jun 29 2017 LABEL.ASC
-rwxr-xr-x 1 3312651 10102 14496 Jan 29 2021 hdbupd
-rwxr-xr-x 1 3312651 10102 14496 Jan 29 2021 hdbuninst
-rwxr-xr-x 1 3312651 10102 14496 Jan 29 2021 hdbsetup
-rwxr-xr-x 1 3312651 10102 14496 Jan 29 2021 hdbcmweb
-rwxr-xr-x 1 3312651 10102 14496 Jan 29 2021 hdbcmgui
-rwxr-xr-x 1 3312651 10102 14496 Jan 29 2021 hdbcm
-rwxr-xr-x 1 3312651 10102 14496 Jan 29 2021 hdbinst
-rwxr-xr-x 1 3312651 10102 1728 Jan 29 2021 filelist.update
-rwxr-xr-x 1 3312651 10102 3266 Jan 29 2021 filelist.resident
-rwxr-xr-x 1 3312651 10102 1343 Jan 29 2021 filelist.install
-rwxr-xr-x 1 3312651 10102 671 Jan 29 2021 filelist.hdbcm_remote_check
-rwxr-xr-x 1 3312651 10102 672 Jan 29 2021 filelist.hdbinst_remote_check
drwxr-xr-x 3 3312651 10102 4096 Jun 14 17:44 configurations
drwxr-xr-x 2 3312651 10102 4096 Jun 14 17:44 operations.d
drwxr-xr-x 2 3312651 10102 4096 Jun 14 17:44 adapters.d
drwxr-xr-x 7 3312651 10102 4096 Jun 14 17:44 instruntime
drwxr-xr-x 2 3312651 10102 4096 Jun 14 17:45 descriptors.d
drwxr-xr-x 6 3312651 10102 4096 Jun 14 17:45 resources
-rwxr-xr-x 1 3312651 10102 40654 Jun 14 18:37 SIGNATURE.SMF
drwxr-xr-x 3 3312651 10102 4096 Aug 17 06:22 server
hanaexpress:/hana/HANA_EXPRESS_20_Installation_Media/DATA_UNITS/HDB_SERVER_LINUX_X86_64 # ./hdblcm
    
```

```

hanaexpress:/hana/HANA_EXPRESS_20_Installation_Media/DATA_UNITS/HDB_SERVER_LINUX_X86_64 # ./hdblcm

SAP HANA Lifecycle Management - SAP HANA Express Edition 2.00.054.00.1611906357
*****

Choose an action

Index | Action          | Description
-----|-----|-----
1     | install         | Install new system
2     | Exit (do nothing) |

Enter selected action index [2]: 1
    
```

- Enter the Index 1 for Install new system

```

Enter selected action index [2]: 1

SAP HANA Database version '2.00.054.00.1611906357' will be installed.

Select additional components for installation:

Index | Components      | Description
-----|-----|-----
1      | all              | All components
2      | server          | No additional components
3      | client          | Install SAP HANA Database Client version 2.7.21.1611351107
4      | streaming       | Install SAP HANA Streaming Analytics version 2.00.048.00.000000
5      | afl             | Install SAP HANA AFL (incl.PAL,BFL,OFL) version 2.00.054.00000.1611928859
6      | eml            | Install SAP HANA EML AFL version 2.00.054.00000.1611928859
7      | epmmnds        | Install SAP HANA EPM-MDS version 2.00.054.00000.1611928859
8      | sap_afl_sdk_apl | Install Automated Predictive Library version 4.200.1911.0.0

Enter comma-separated list of the selected indices [1]:
    
```

- **Enter the Index 1 for installing all the component**

```

SAP HANA Database version '2.00.054.00.1611906357' will be installed.

Select additional components for installation:

Index | Components      | Description
-----|-----|-----
1      | all              | All components
2      | server          | No additional components
3      | client          | Install SAP HANA Database Client version 2.7.21.1611351107
4      | streaming       | Install SAP HANA Streaming Analytics version 2.00.048.00.000000
5      | afl             | Install SAP HANA AFL (incl.PAL,BFL,OFL) version 2.00.054.00000.1611928859
6      | eml            | Install SAP HANA EML AFL version 2.00.054.00000.1611928859
7      | epmmnds        | Install SAP HANA EPM-MDS version 2.00.054.00000.1611928859
8      | sap_afl_sdk_apl | Install Automated Predictive Library version 4.200.1911.0.0

Enter comma-separated list of the selected indices [1]: 1
Enter Installation Path [/hana/shared]:
Enter Local Host Name [hanaexpress]:
Enter SAP HANA System ID [HXE]:
Enter Instance Number [90]:
Do you want to enable data and log volume encryption? [n]:
Enter Master Password:
Confirm Master Password:
Enter Location of Streaming logstores and runtime information [/hana/data_streaming/HXE]:
    
```

**Proceed with the Default Option:
Master Password: Hanaexpress@123**

Note: If you do not provide anything, default value will be considered.

```

20.83.108.112 - PuTTY
SAP HANA System ID: HXE
Instance Number: 90
Local Host Worker Group: default
System Usage: development
Location of Data Volumes: /hana/shared/data/HXE
Location of Log Volumes: /hana/shared/log/HXE
Directory containing custom configurations: /hana/HANA_EXPRESS_20_Installation_Media/DATA_UNITS/HDB_SERVER_LINUX_X86_64/configurations/custom
SAP HANA Database secure store: safs
Certificate Host Names: hanaexpress -> hanaexpress
System Administrator Home Directory: /usr/sap/HXE/home
System Administrator Login Shell: /bin/bash
System Administrator User ID: 1002
ID of User Group (sapsys): 79
Restart system after machine reboot?: Yes
Inter Service Communication Mode: ssl
SAP HANA Database Client Installation Path: /hana/shared/HXE/hdbclient
Location of Streaming logstores and runtime information: /hana/data_streaming/HXE
Software Components
SAP HANA Database
  Install version 2.00.054.00.1611906357
  Location: /hana/HANA_EXPRESS_20_Installation_Media/DATA_UNITS/HDB_SERVER_LINUX_X86_64/server
SAP HANA AFL (incl. PAL, SPL, OPL)
  Install version 2.00.054.0000.1611928859
  Location: /hana/HANA_EXPRESS_20_Installation_Media/DATA_UNITS/HDB_AFL_LINUX_X86_64/packages
SAP HANA EML AFL
  Install version 2.00.054.0000.1611928859
  Location: /hana/HANA_EXPRESS_20_Installation_Media/DATA_UNITS/HDB_EML_AFL_10_LINUX_X86_64/packages
SAP HANA EPM-MDS
  Install version 2.00.054.0000.1611928859
  Location: /hana/HANA_EXPRESS_20_Installation_Media/DATA_UNITS/SAP_HANA_EPM-MDS_10/packages
Automated Predictive Library
  Install version 4.200.1911.0.0
  Location: /hana/HANA_EXPRESS_20_Installation_Media/DATA_UNITS/PAAPLHANA2_LINUX_X86_64/packages
SAP HANA Database Client
  Install version 2.7.21.1611351107
  Location: /hana/HANA_EXPRESS_20_Installation_Media/DATA_UNITS/HDB_CLIENT_LINUX_X86_64/client
SAP HANA Streaming Analytics
  Install version 2.00.048.00.000000
  Location: /hana/HANA_EXPRESS_20_Installation_Media/DATA_UNITS/HANA_STREAMING_HXE/streaming
Log File Locations
  Log directory: /var/tmp/hdb HXE hdbclm install 2021-11-19 13.02.50
  Trace location: /var/tmp/hdbclm 2021-11-19 13.02.50_11686.trc
Do you want to continue? (y/n):
  
```

- **Summary of the Installation parameter**

```

Starting instances...
Starting 4 processes on host 'hanaexpress' (worker):
  Starting on 'hanaexpress' (worker): hdbdaemon, hdbcompileserver, hdbnameserver, hdbwebdispatcher
Starting 5 processes on host 'hanaexpress' (worker):
  Starting on 'hanaexpress' (worker): hdbdaemon, hdbcompileserver, hdbnameserver, hdbwebdispatcher, hdbindexserver (HXE)
  Starting on 'hanaexpress' (worker): hdbdaemon, hdbwebdispatcher, hdbindexserver (HXE)
  Starting on 'hanaexpress' (worker): hdbdaemon, hdbwebdispatcher
All server processes started on host 'hanaexpress' (worker).
Finalizing installation of SAP HANA Database...
Finalizing System Installation...
Starting SAP HANA Database system...
Finalizing installation of SAP HANA Streaming Analytics...
Installing content of SAP HANA Streaming Analytics...
Updating SAP HANA Express Edition Instance Integration on Local Host...
Deploying SAP Host Agent configurations...
Creating Component list...
SAP HANA Express Edition System installed
You can send feedback to SAP with this form: https://hanaexpress.doehavmppxlujofyjtreaafgaf.xx.internal.cloudapp.net:1129/lms1/HDBLCM/HXE/feedback/feedback.html
Log file written to '/var/tmp/hdb HXE hdbclm install 2021-11-19 13.02.50/hdbclm.log' on host 'hanaexpress'.
hanaexpress:/hana/HANA_EXPRESS_20_Installation_Media/DATA_UNITS/HDB_SERVER_LINUX_X86_64 #
  
```

- **Installation of SAP Hana Express is finished.**

```

20.83.108.112 - PuTTY
hxeadm@hanaexpress:/usr/sap/HXE/HDB90> HDB info
USER      PID      PPID     tCPU     VSZ      RSS      COMMAND
hxeadm    21655    21653    0.3      20392    7368     -bash
hxeadm    21900    21655    0.0      14272    3908     \_ /bin/sh /usr/sap/HXE/HDB90/HDB info
hxeadm    21831    21900    0.0      38060    3756     \_ \_ ps -k -D hxeadm -o user:8,pid:8,ppid:8,pcpu:5,vsz:10,rss:10,args
hxeadm    20008    1         0         23216    3088     sapstart pf=/hana/shared/HXE/profile/HXE_HDB90_hanaexpress
hxeadm    20015    20008    0.4      371000   75160    \_ /usr/sap/HXE/HDB90/hanaexpress/trace/hdb.saphXE_HDB90 -d -nw -f /usr/sap/HXE/HDB90/hanaexpress/daemon.ini pf=
hxeadm    20033    20015    87.4     4080116 2119616  \_ hdbnameserver
hxeadm    20292    20015    0.9      290692   109948   \_ hdbcompileserver
hxeadm    20394    20015    110     3735032 1777696  \_ hdbindexserver -port 39003
hxeadm    20627    20015    4.5      1225188 359292   \_ hdbwebdispatcher
hxeadm    19895    1         1.4      502264   36692    /usr/sap/HXE/HDB90/exe/sapstartsrv pf=/hana/shared/HXE/profile/HXE_HDB90_hanaexpress -D -u hxeadm
hxeadm@hanaexpress:/usr/sap/HXE/HDB90> sapcontrol -nr 90 -function GetProcessList
19.11.2021 13:17:52
GetProcessList
OK
name, description, dispstatus, textstatus, starttime, elapsedtime, pid
hdbdaemon, HDB Daemon, GREEN, Running, 2021 11 19 13:14:19, 0:03:33, 20015
hdbcompileserver, HDB Compileserver, GREEN, Running, 2021 11 19 13:15:00, 0:02:52, 20292
hdbnameserver, HDB Nameserver, GREEN, Running, 2021 11 19 13:14:19, 0:03:33, 20033
hdbwebdispatcher, HDB Web Dispatcher, GREEN, Running, 2021 11 19 13:16:13, 0:01:39, 20627
hdbindexserver, HDB Indexserver-HXE, GREEN, Running, 2021 11 19 13:15:00, 0:02:52, 20394
hxeadm@hanaexpress:/usr/sap/HXE/HDB90>
  
```

Check the SAP Hana Express Database status as below command “HDB info” & “sapcontrol -nr 90 -function GetProcessList”

Q/A

1.) What is SAP HANA Express?

SAP HANA, express edition is a **streamlined version of the SAP HANA platform** which enables developers to jumpstart application development in the cloud or from a personal computer to build and deploy modern applications that use up to 32GB memory - without incurring any license fees

2.) How do I install SAP HANA Express?

Use the Download Manager (GUI mode) to download a server-only virtual machine package, or a server + applications virtual machine package. 2 min. Import the downloaded Open Virtual Appliance (OVA) file into your hypervisor to begin using SAP HANA 2.0, express edition.

Reference Link: <https://developers.sap.com/group.hxe-install-vm-xsa.html>

3.) Why Cloudwrxs for Hana Express pre-build Hana express ?

Cloudwrxs has built the Virtual machine with all the required RPM packages and you are getting Ready to use pre-built Hana Express Edition installed.

4.) What will be the System Identification, Instance No and Default Password ?

Cloudwrxs has installed the Hana Express with all the default option and required details are below

SID: HXE

Instance No: 90 & Port 39003

OS User ID & Password: hxeadm & Hanaexpress@123

DB User ID & Password: System & Hanaexpress@123

5.) How will you login to hdbsql for executing commands ?

Syntax: hdbsql -n hostname -i 90 -u SYSTEM -p password
 hdbsql -n hanaexpress -i 90 -u SYSTEM -p Hanaexpress@123

6.) If you want to extend SAP Hana Express Edition following are the costs

- Below are the cost if you want to configure Above 32 GB RAM
- SAP HANA - express edition 64GB option 31,714.00/Month
 - SAP HANA - express edition 96GB option 63,428.00/Month
 - SAP HANA - express edition 128GB option 95,142.00/Month

Taxes calculated during checkout

Reference Link: <https://www.sapstore.com/solutions/99055/SAP-HANA---express-edition>

7.) Can we build customer System Identification, Instance Number and Password ?

Yes, Cloudwrxs has installed Hana express with required rpms and server settings. You may create a ssh key pair or password based authentication from Azure Portal.

8.) How to create a SSH key on Azure?

With a secure shell (SSH) key pair, you can create virtual machines (VMs) in Azure that use SSH keys for authentication. This article link shows you how to quickly generate and use an SSH public-private key file pair for cloudwrxs Images.

<https://docs.microsoft.com/en-us/azure/virtual-machines/linux/mac-create-ssh-keys>

9.) What is the minimum VM Size recommended to provision the cloudwrxs HANA Express?

The size of this VM can be configured as necessary for your use-case, but cloudwrxs recommends to use minimum 4vCPU and 32GB of memory from the huge Azure VM Size Family.