



JELINUX AS A VIRTUAL MACHINE

JED-0263

[www | jacques.com.au](http://www.jacques.com.au)

Disclaimer Notice

Every effort has been made to ensure that the information in this document is correct at the time of publication.

Jacques Technologies Pty Ltd shall not be liable for any errors contained in this document, nor for any incidental or consequential damages that may occur in direct connection with the provision of this material.

This document does not constitute a product warranty, express or implied (including but not limited to, the implied warranty of fitness for a particular purpose), or service guarantee.

Jacques Technology Pty Ltd does not warrant or make any representations regarding the use, or the results of the use, of the information provided within the publication in terms of its correctness, accuracy, reliability, or otherwise. No oral or written information or advice given by Jacques Technology Pty Ltd (or by its agents, contractors, distributors, or employees) shall create a warranty or in any way increase the scope of this warranty. Some jurisdictions do not allow the exclusion of implied warranties, so the above exclusion may not apply to you.

Jacques Technology Pty Ltd acknowledges that information in this publication may be unsuitable in various circumstances and disclaims liability for the use of the information in those circumstances.

Copyright Notice

Copyright © 2019 Jacques Technology Pty Ltd. All rights reserved.

The material in every part of this document, and in its entirety, is protected by copyright.

No part of this document may be used, transmitted, reproduced, translated into another format, or adapted by any means or form, in whole or in part, or for any purpose without express, written, permission from Jacques Technology Pty Ltd.

No exceptions to these conditions will be made, except as permitted according to Australian and International copyright law.

Jacques Technology Pty Ltd reserves the right to continually improve products and update the relevant equipment specifications and documentation without notifying clients.

Trademarks

Windows is a registered trademark of Microsoft Corporation. Pentium is a registered trademark of Intel Corporation. Other products mentioned in this document may be trademarks of their respective companies and are hereby acknowledged.

Document Feedback

We value your feedback. To give feedback on this document please email feedback@jacques.com.au

Publication Information

Document Number:	JED-0263
Revision:	1.7
Release Date:	2020-12-21

TABLE OF CONTENTS

- INTRODUCTION..... 4**
- REQUIREMENTS 5**
 - VIRTUAL SERVER PERFORMANCE..... 5**
 - VIRTUAL SERVER REQUIREMENTS..... 5**
 - JELINUX VIRTUAL IMAGE..... 5**
- CONSIDERATIONS..... 6**
 - HIGH AVAILABILITY SYSTEMS 6**
 - SCSI HARD DISK..... 6**
 - CONVERT VMDK TO VHD 6**
- INSTALLATION..... 8**
- CONTACT DETAILS 12**

INTRODUCTION

JELinux is the operating system at the core of the Jacques IP Integrated System. It allows users to monitor, view, filter and record events within the intercom systems. This operating system has been designed by Jacques around a LINUX base. JELinux Server contains a standard HTTP server, allowing access from remote workstations using generic web browsers.

JELinux software is made available to run within a virtual hosting environment offering full system functionality to the user, with increased flexibility and usability. JELinux virtual image is available in 32-bit version and a 64-bit version. The web interface for both the versions remains the same with the only difference being in functionality aspect. It is recommended to use 64-bit JELinux for better performance.

This document outlines the requirements for using JELinux as a virtual machine within a virtual hosting environment. It also includes a guide for installing JELinux on VMWare Player 5.0.x as an example.

REQUIREMENTS

VIRTUAL SERVER PERFORMANCE

	MINIMUM	RECOMMENDED	HIGH PERFORMANCE (Major Project)
CPU	Dual core, 2GHz	Four core, 3GHz, 8MB cache or similar	8 core, 3.5GHz, 10-20MB cache
RAM	2GB	4GB	8GB
Supports DAR/SIPPROXY software	No	Yes	Yes

VIRTUAL SERVER REQUIREMENTS

Operating systems	Linux 2.6.x (32-bit) or later for 32-bit JELinux system Linux 2.6.x (64-bit) or later for 64-bit JELinux system
Browsers for JELinux Web Interface	Mozilla Firefox Google chrome
Storage	6GB* *Minimum requirement, contact Jacques for recommendations
NIC ports	A minimum of 1 NIC port is required. Additional NIC port is required for audio recording server
Network bandwidth	For systems that only use jccpserver and event controller, network bandwidth requirements are low. However, a reasonable Quality of Service (QoS) is assumed. The DAR and/or SIPPROXY process audio on behalf of endpoints in the system. Each one-way audio connection between endpoint and DAR/SIPPROXY required 128Kbps.

JELINUX VIRTUAL IMAGE

Format	JELinux virtual image is provided in '.vmdk' format with a size of 512MB 32-bit: jelinux-prod.jrp.pentium_m.512.V7.XX 64-bit: x86-64.x86-64.512.V7.XX Note: Custom site specific image file will be provided with a filename that represents the site name. Note: vmdk can be converted to other formats, please see Consideration section
---------------	--

Software upgrades

Jacques 650 system server virtual machine is maintained using the same methodology as the Jacques hardware servers – a browser based configuration utility, and upgrades supplied from Jacques as 'jrp' files

CONSIDERATIONS

- JELinux virtual machine does not support sound cards. Hence, a physical server is required for background music and analog recording functionality. Please contact Jacques for more details.
- High availability on virtual host failure should be provided by the virtualization software.
- Allow expanding or adding hard disks to the virtual machine.
- Allow addition of USB controller to the virtual machine for configuring USB logging on a Jacques server.
- 64-bit JELinux software does not accept packages that are designed for 32-bit versions and vice versa.
- 64-bit JELinux requires at least 4GB of RAM.

HIGH AVAILABILITY SYSTEMS

When creating a high availability system on vsphere, it's important to change the security options of the vsphere network.

Promiscuous mode, MAC address changes and forged transmits all need to be Accepted. This is to allow for vrrp packets from the active server to be correctly sent to all servers in the cluster. Vrrp packets are not sent from the physical MAC address of the machine, but from a virtual MAC address generated by the Jacques ucarp service.

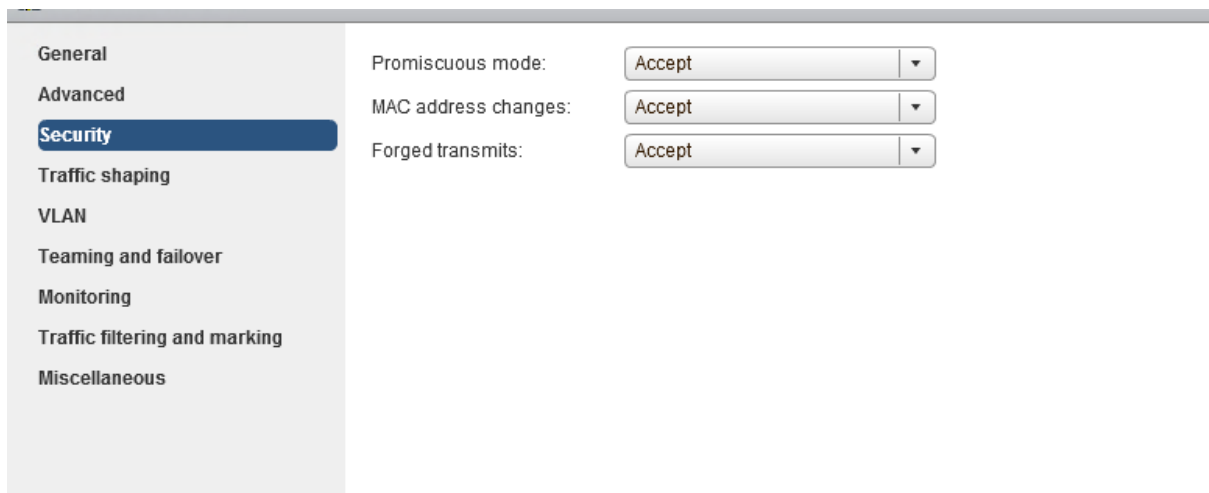


Figure 1: Vsphere Network with Updated Security Settings

SCSI HARD DISK

To use the vsphere fault tolerance feature, the hard disk must be on a SCSI bus. This requires JELinux to support SCSI hard disks. This support is included in the JELinux boot package versions V7.96 and greater. The busses that are supported are LSI Logical SAS, LSI Logical Parallel and VMWare Paravirtual.

CONVERT VMDK TO VHD

If you require a .vhd file for your virtualisation, it's possible to convert the provided .vmdk file to your preferred format.

1. Download qemu-img from <https://cloudbase.it/qemu-img-windows/>
2. Unzip qemu-img to it's own directory
3. Create a .bat file and add the following:

```
cd %~dp0
mkdir converted
FOR %%A IN (*) DO qemu-img convert -f vmdk -O vpc %%A
"converted/%%~nA.vhd"
Pause
```
4. Save the .bat file to the same directory as qemu-img.
5. Take the provided .vmdk file and drag it on top of the .bat file
6. A popup will appear, then a directory called "converted" will appear. This will contain the converted .vhd file

INSTALLATION

Instructions to install JELinux as a virtual machine under VMware Player are as follows:

NOTE: These instructions are intended as a guide only. Installing under other Virtual Hosting Environments is outside the scope of this document.

- a. Install VMware Player latest version from <http://www.vmware.com>.
- b. Customers will receive the virtual images as a 'vmdk' file.
- c. On successful installation, open the VMware Player.

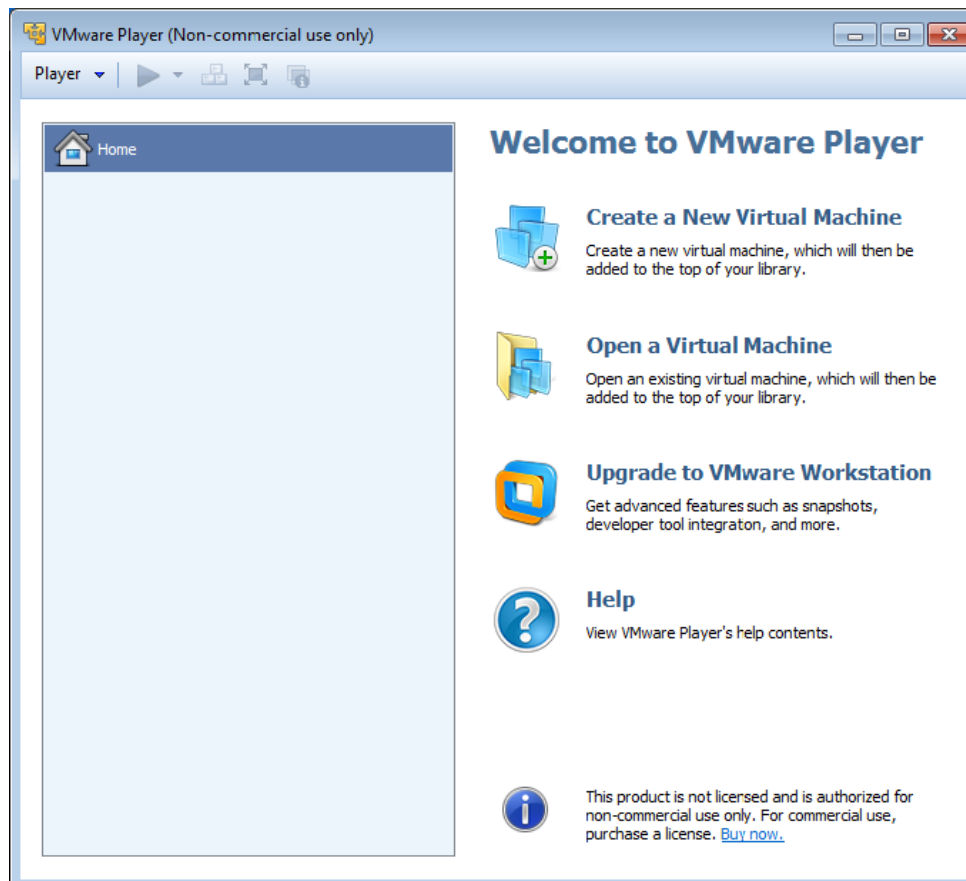


Figure 2: VMware Player Start up screen display

- d. Click on “Create a New Virtual Machine” option. The New Virtual Machine Wizard starts. For the first pop-up select “I will install the operating system later” option and click “Next”.
- e. On the next step select the type and version of guest operating system to be installed. Here, the type is Linux and the version is other Linux 2.6.x kernel.
- f. Choose desired name for your virtual machine and the location path on the host system.
- g. Specify disk capacity in accordance with your host operating system configuration, click on next and complete the installation of the virtual machine by clicking on finish.

- h. The newly created virtual machine can now be seen in the left column under the Home option. Select the newly created virtual machine and click on “Edit virtual machine settings” option located on the bottom right side.
- i. Now the settings of the virtual machine are displayed. Click on the Add button. Select “Hard Disk” option and click on next. On the next tab select the option stating “Use an existing virtual disk”. Browse for the ‘.vmdk’ image that has been supplied and click on finish. On the settings page it can be seen that the newly added hard disk is visible in the left hand corner with its details displayed on right when selected.
- j. Click on the hard disk that was installed initially and click on “Remove”. Click on “Ok”. Now run the virtual machine.
- k. On successful run of the virtual machine, the console screen displays the “Welcome to jelinix” message followed by a prompt asking for login details.

```

Windows 7 - VMware Player (Non-commercial use only)
Player | [Icons]
Starting Auto Installation daemon-autoinst ... Done.
STARTING /etc/init.d/lastrc
DUMPING machine data
Done.
=====
                        Welcome to jelinix

Credits to Linux, GNU and friends.

(c) Copyright, 2014 Jacques Technologies Pty Ltd. All rights reserved.
*****
                        Network
-----
eth0   Link encap:Ethernet  HWaddr 00:0C:29:F9:F1:30
       inet addr:10.7.0.1  Bcast:10.7.0.255  Mask:255.255.255.0
lo     Link encap:Local Loopback
       inet addr:127.0.0.1  Mask:255.0.0.0
*****
For help type "help" followed by the <enter> key
-----
EXIT - /etc/init.d/rc 2

Boot log is in /var/log/boot.log

jelinix login: _

```

Figure 3: Console screen on successful run of the virtual machine

To enter into the console screen press “Ctrl+g” and press “Enter”. Similarly to move back to the host system press “Ctrl + Alt” and the mouse cursor becomes visible indicating that the user is no longer in the console screen. The username for login is “root” and password is “jacques”.

```

Windows 7 - VMWare Player (Non-commercial use only)
Player
eth0    Link encap:Ethernet  HWaddr 00:0C:29:F9:F1:30
        inet addr:10.7.0.1  Bcast:10.7.0.255  Mask:255.255.255.0
lo      Link encap:Local Loopback
        inet addr:127.0.0.1  Mask:255.0.0.0
*****
For help type "help" followed by the <enter> key
=====
EXIT - /etc/init.d/rc 2

Boot log is in /var/log/boot.log

jelixux login:
jelixux login:
jelixux login: root
Password:
=====
                Welcome to jelixux

Credits to Linux, GNU and friends.

(c) Copyright, 2014 Jacques Technologies Pty Ltd. All rights reserved.

For help type "help" followed by the <enter> key
=====
root@jelixux /root# _

```

Figure 4: Console screen display on successful login

- l. Determine the IP address of your PC from the point of view of the JELinux virtual machine. Also inspect your IP configuration by using “ifconfig” command.
- m. Take particular notice of the “Ethernet adapter VMWare Network Adapter” settings.
For example:
Ethernet Virtual Machine Network Adapter VMNet8:

Connection- specific DNS suffix:ip
IP Address.....: 192.168.254.1
Subnet mask.....: 255.255.255.0
Default Gateway.....:

Ethernet Virtual Machine Network Adapter VMNet1:

Connection-specific DNS Suffix.:
IP Address.....: 192.168.159.1
Subnet Mask.....: 255.255.255.0
Default Gateway.....:
- n. By default, the JELinux Virtual Machine does not have any network interface configured. VMNet1 corresponds to the “Host-Only” vmware connection. So for the above IP configuration, the IP address of your PC from the point of the JELinux Virtual Machine is 192.168.159.1.

- O. Temporarily set JELinux Virtual Machine IP address (so you can connect via browser). For proper communication between the JELinux virtual machine and your PC, the JELinux Virtual Machine IP address must be configured to communicate with the PC's address determined above.

For example:

If the VMNet1 IP address is 192.168.159.1 then the JELinux virtual machine should be configured to use the static IP address 192.168.159.2, with a gateway of 192.168.159.1.

Note: If you are using a software firewall (Windows, ZoneAlarm etc) you will need to add the IP address of the JELinux to your trusted hosts.

To do so enter into the virtual machine console screen and at the JELinux root prompt input the following command:

```
root@jelinux /root# syscfg network -a 192.168.159.2 -i eth0
```

OR

To revert to DHCP:

```
root@jelinux /root# syscfg network -a dhcp -i eth0
```

For instructions to configure the server, please refer to **JED-0196 (JELinux Web Interface Manual).pdf**

CONTACT DETAILS

Ph: +61 7 3846 8400
Fax: +61 7 3844 1078
Email: info@jacques.com.au
Website: www.jacques.com.au

ABN: 48 074 448 712

DOCUMENT REVISION HISTORY

REVISION	DATE	AUTHOR	CHANGE DESCRIPTION
0.10	2013-01-10	UP	Document created
0.20	2013-01-23	UP	Requirements added, Installation and configuration sections detailed and figures added. TOF added
1.0	2013-01-24	UP	Document restructured based on additional information
1.1	2013-01-24	UP	Document formatted on feedback by PS, WM
1.2	2016-10-17	HK	Document restructured and updated.
1.3	2018-07-10	SQ	Updated contact details
1.4	2019-05-02	AM	Added consideration of HA systems on vsphere
1.5	2019-05-08	AM	Added consideration for vsphere fault tolerance
1.6	2019-09-02	AM	Added vmdk to vhd conversion
1.7	2020-12-21	AM	Changed storage requirements