

# LPIC3-304 (temario)

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## Virtualization

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- Virtualization Concepts and Theory
  - Key Knowledge Areas:
    - Terminology
    - Pros and Cons of Virtualization
    - Variations of Virtual Machine Monitors
    - Migration of Physical to Virtual Machines
    - Migration of Virtual Machines between Host systems
    - Cloud Computing
  - The following is a partial list of the used files, terms and utilities:
    - Hypervisor
    - Hardware Virtual Machine (HVM)
    - Paravirtualization (PV)
    - Container Virtualization
    - Emulation and Simulation
    - CPU flags
    - /proc/cpuinfo
    - Migration (P2V, V2V)
    - IaaS, PaaS, SaaS
- Xen
  - Key Knowledge Areas:
    - Xen architecture, networking and storage
    - Xen configuration
    - Xen utilities
    - Troubleshooting Xen installations

- Basic knowledge of XAPI
- Awareness of XenStore
- Awareness of Xen Boot Parameters
- Awareness of the xm utility
- Terms and Utilities:
  - Domain0 (Dom0), DomainU (DomU)
  - PV-DomU, HVM-DomU
  - /etc/xen/
  - xl
  - xl.cfg
  - xl.conf
  - xe
  - xentop
- KVM
  - Key Knowledge Areas:
    - KVM architecture, networking and storage
    - KVM configuration
    - KVM utilities
    - Troubleshooting KVM installations
  - Terms and Utilities:
    - Kernel modules: kvm, kvm-intel and kvm-amd
    - /etc/kvm/
    - /dev/kvm
    - kvm
    - KVM monitor
    - qemu
    - qemu-i
- Other Virtualization Solutions
  - Key Knowledge Areas:
    - Basic knowledge of OpenVZ and LXC
    - Awareness of other virtualization technologies
    - Basic knowledge of virtualization provisioning tools
  - Terms and Utilities:
    - OpenVZ
    - VirtualBox

- LXC
    - docker
    - packer
    - vagrant
  - Libvirt and Related Tools
    - Key Knowledge Areas:
      - libvirt architecture, networking and storage
      - Basic technical knowledge of libvirt and virsh
      - Awareness of oVirt
    - Terms and Utilities:
      - libvirtd
      - /etc/libvirt/
      - virsh
      - oVirt
  - Cloud Management Tools
    - Key Knowledge Areas:
      - Basic feature knowledge of OpenStack and CloudStack
      - Awareness of Eucalyptus and OpenNebula
    - Terms and Utilities:
      - OpenStack
      - CloudStack
      - Eucalyptus
      - OpenNebula
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# High Availability Cluster Management

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- High Availability Concepts and Theory
- Load Balanced Clusters

- Failover Clusters
  - High Availability in Enterprise Linux Distributions
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# High Availability Cluster Storage

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- DRBD / cLVM
- Clustered File Systems