

Linux virtualization and High Availability

A 5 day **Hands on** training course



Description

The LPIC-3 certification is the culmination of LPI's multi-level professional certification program. LPIC-3 is designed for the enterprise-level Linux professional and represents the highest level of professional, distribution neutral Linux certification within the industry.

LPIC-3 304 covers administering Linux enterprise-wide with an emphasis on virtualization and high availability.

At SNT we have enhanced the contents of the course by covering containers.



Key outcomes

By the end of the course delegates will be able to:

- ✓ Manage Virtual Machines.
- ✓ Manage containers.
- ✓ Manage HA clusters.
- ✓ Manage HA cluster storage.



Training Approach

This structured course uses Instructor Led Training to provide the best possible learning experience. Small class sizes ensure students benefit from our engaging and interactive style of teaching with delegates encouraged to ask questions throughout the course. Quizzes follow each major section allowing checking of learning. Hands on sessions are used throughout to allow delegates to consolidate their new skills.



Details

Who will benefit?

Linux professionals working with virtualization and/or High availability.

Prerequisites

Linux network administration 2 (LPIC-2)

Duration: 5 days

Overall rating:



Generic Training



Generic training compliments product specific courses covering the complete picture of all relevant devices including the protocols "on the wire".

"Friendly environment with expert teaching that teaches the why before the how."

G.C. Fasthosts

Small Class Sizes



We limit our maximum class size to 8 delegates; often we have less than this. This ensures optimal interactivity between delegates and instructor.

"Excellent course. The small class size was a great benefit..."

M.B. IBM

Hands On Training



The majority of our courses use hands on sessions to reinforce the theory.

"Not many courses have practice added to it. Normally just the theoretical stuff is covered."

J.W. Vodafone

Our Courseware



We write our own courses; courseware does not just consist of slides and our slides are diagrams not bullet point text.

"Comprehensive materials that made the course easy to follow and will be used as a reference point."

V.B. Rockwell Collins

Customise Your Course



Please contact us if you would like a course to be customised to meet your specific requirements. Have the course your way.

"I was very impressed by the combination of practical and theory. Very informative. Friendly approachable environment, lots of hands on."

S.R. Qinetiq

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Course Content

VIRTUALIZATION

Virtualization concepts and theory

Terminology, Pros and Cons of virtualization, variations of Virtual Machine monitors, migration of physical to VMs, migration of VMs between host systems, cloud computing.

Xen

Xen architecture, networking and storage, Xen configuration, Xen utilities, troubleshooting Xen installations, XAPI, XenStore, Xen Boot Parameters, the xm utility.

KVM

KVM architecture, networking and storage, KVM configuration, KVM utilities, troubleshooting KVM installations.

Other virtualization solutions

OpenVZ and LXC, other virtualization technologies, virtualization provisioning tools.

Libvirt and related tools

libvirt architecture, networking and storage, basic technical knowledge of libvirt and virsh, oVirt.

Cloud Management Tools

Basic feature knowledge of OpenStack and CloudStack, awareness of Eucalyptus and OpenNebula.

Containers

Containers versus VMs, Docker, Kubernetes.

HIGH AVAILABILITY CLUSTER MANAGEMENT

High Availability Concepts and Theory

The most important cluster architectures, recovery and cluster reorganization mechanisms, design an appropriate cluster architecture for a given purpose, application aspects of high availability, operational considerations of high availability.

Load balanced clusters

of LVS/IPVS, VRRP, configuration of keepalived, configuration of ldirectord, backend server network configuration. HAProxy, configuration of HAProxy.

Failover clusters

Pacemaker architecture and components (CIB, CRMd, PEngine, LRMd, DC, STONITHd), Pacemaker cluster configuration, Resource classes (OCF, LSB, Systemd, Upstart, Service, STONITH, Nagios), Resource rules and constraints (location, order, colocation), Advanced resource features (templates, groups, clone resources, multi-state resources), Pacemaker management using pcs, Pacemaker management using crmsh, configuration and management of corosync in conjunction with Pacemaker, other cluster engines (OpenAIS, Heartbeat, CMAN).

High Availability in Enterprise Linux Distributions

Red Hat Enterprise Linux High Availability Add-On, SUSE Linux Enterprise High Availability Extension.

HIGH AVAILABILITY CLUSTER STORAGE

DRBD/cLVM

DRBD resources, states and replication modes, configuration of DRBD resources, networking, disks and devices, configuration of DRBD automatic recovery and error handling, management of DRBD using drbdadm. drbdsetup and drbdmeta, Integration of DRBD with Pacemaker, cLVM, integration of cLVM with Pacemaker.

Clustered File Systems

Principles of cluster file systems. Create, maintain and troubleshoot GFS2 file systems in a cluster, create, maintain and troubleshoot OCFS2 file systems in a cluster, Integration of GFS2 and OCFS2 with Pacemaker, the O2CB cluster stack, other commonly used clustered file systems.

