Publication date : 02/06/2024

Course : Linux cluster, high availability and load balancing

Practical course - 3d - 21h00 - Ref. CLX
Price : 2110 CHF E.T.

★★★★★ 5 / 5

This course will enable you to understand the different types of Linux clusters and implement a load balancing and high availability architecture.

Teaching objectives

At the end of the training, the participant will be able to:

- Implement high availability with Cluster Manager
- Load balancing with Piranha
- Understanding the different types of Linux clusters
- Implement high-availability clustering solutions in production environments
- Implement load balancing solutions

Intended audience

Experienced Unix/Linux network and systems administrators.

Prerequisites

Good knowledge of Linux/Unix administration.

Practical details

Hands-on work

Set up high-availability systems and load balancing with tools similar to those used in production environments.

Course schedule

1 Clusters and service quality

- Cluster types and objectives.
- Issues and " trade off ".
- The " Service Level Agreement ", at the heart of the Cluster.

PARTICIPANTS

Experienced Unix/Linux network and systems administrators.

PREREQUISITES

Good knowledge of Linux/Unix administration.

TRAINER QUALIFICATIONS

The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

ASSESSMENT TERMS

The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more.
Participants also complete a placement test before and after the course to measure the skills they've developed.

2 Data management

- Types of data storage.
- iSCSI and GNBD.
- Logical volume manager.
- The GFS concurrent-access file system.

Hands-on work

Data export with GNBD.

3 Virtualization with Xen

- Introduction to virtualization.
- Xen features.
- Network and storage management with Xen.
- Live migration of virtual machines and clustering of Xen hypervisors.

Hands-on work

Creation and deployment of Xen virtual machines with virt-manager and Kickstart as high availability and load balancing cluster nodes.

4 High availability with Cluster Manager

- Cluster node configuration.
- Cluster management with Conga.
- The implementation of " fencing " and agents.

Hands-on work

Install and configure Cluster Manager on cluster nodes with Conga.
Configure cluster node fencing with the fencing agent for virtual machines.

5 Cluster resource management

- Network, data and processes.
- The resource manager: rgmanager.
- Tipping mechanisms and criteria.
- Cluster administration reflexes and procedures.
- Resource monitoring.

Hands-on work

Implementation of a high-availability Web server with Cluster Manager's resource manager and failover tests.

6 Load sharing with LVS

- Introduction to the concept of load sharing.
- How LVS works: Linux Virtual Server.
- Load balancing algorithms.

Hands-on work

Modification of hypervisors and virtual machines to adapt to the network topology required for load balancing.

TEACHING AIDS AND TECHNICAL RESOURCES

• The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
• At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
• A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at psh-accueil@orsys.fr to review your request and its feasibility.

7 Implementing distribution with Piranha

- LVS redundancy.
- Create virtual services.

Hands-on work
Implement a load-balanced Web service. Load balancing and LVS failover tests.

Dates and locations

REMOTE CLASS
2026 : 24 June