# Course : Windows 2022, implementing high availability (Cluster)

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

★★★★★  **5 / 5**

Understanding the principles of clustering for the main roles in Windows 2022 is the aim of this course. You'll learn how to set up application clusters, Hyper-V clusters and Network Load Balancing, as well as how to maintain and troubleshoot clusters.

## 🎯 Teaching objectives

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

- ✓ Implementing clustering mechanisms in Windows Server 2022
- ✓ Setting up application clusters
- ✓ Setting up Hyper-V clusters
- ✓ Implementing the NLB

## Intended audience

Systems and network technicians, administrators and engineers.

## Prerequisites

Good knowledge of Windows server management.

## Course schedule

**①  Presentation and concept**

- Failover Cluster and Network Load Balancing.
- Principles and role of clusters.
- Quorum definitions.
- Introducing multi-site geo-clusters.

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**PARTICIPANTS**
Systems and network technicians, administrators and engineers.

**PREREQUISITES**
Good knowledge of Windows server management.

**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) Storage and networking in a cluster environment

- Storage: JBOD disk arrays, SAN, NAS, iSCSI.
- Deploy storage pools.
- Deploy ISCSI storage.
- Cluster disk and quorum management.
- Presentation of the shared cluster volume.
- Understand the network in a cluster environment: public, private or storage network.
- Manage DNS addressing and naming.

### Hands-on work
Prepare storage and network plans. Deploy storage pools. Install and set up connections to iSCSI volumes.

## 3) Hardware and software configuration

- Hardware requirements. Initial checks.
- Network validation for clustering.
- Check system requirements.

### Hands-on work
Setting up system prerequisites.

## 4) Setting up application clusters

- Concept of system and application clusters.
- Cluster installation and post-installation testing.
- Configure cluster resources.
- Implement clusters for Windows roles.
- SOFS clusters.

### Hands-on work
Deploy Windows Server roles in a highly available environment (file server, etc.). Perform hot failover tests. Implement SOFS

## 5) Hyper-V cluster implementation

- The benefits of Hyper-V clusters.
- How Hyper-V works in a cluster.
- Prerequisites for Hyper-V clusters.
- Deploy a Hyper-V cluster.
- Implement highly available Hyper-V virtual machines.
- Hot migration.

### Hands-on work
Deploy a Hyper-V cluster. Implement VM clusters and hot VM migration.

## 6) Setting up Network Load Balancing

- Introducing Network Load Balancing.
- NLB uses and applications.
- Installation and configuration of the NLB.

### Hands-on work
Installation of a highly available IIS server via NLB.

## ( 7 ) Cluster maintenance and troubleshooting

- Deploy updates on a cluster, Cluster Aware Updating.
- Windows cluster monitoring tools.
- Troubleshooting procedures. Emergency recovery.
- Backup and restore HA clusters.
- Migrate a cluster to a later version of Windows.

**Hands-on work**
Integrate CAU. Backing up, destroying and restoring a cluster.

## Dates and locations

**REMOTE CLASS**
2026 : 23 Mar., 15 June, 30 Sep., 18 Nov.