

# IPv6 integration Workshop

The **IPv6 Workshop** provides a detailed view into this new advanced Network protocol. The attendees will be able to use the new features and advantages of the IPv6 protocol stack so that they can design new Networks as well as implement migration concepts to transform existing IPv4 into IPv6 networks .

## At the end of this course the student will be able to:

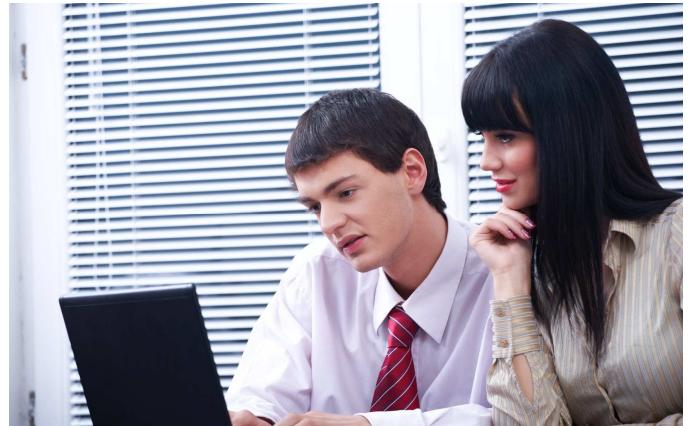
- Design and implement IPv6 Networks
- Use the new Features and Applications of IPv6

## The course is designed for:

- Network Administrators responsible for implementing and managing small to large business networks
- Network support staff who act as network device installers and first-line support for any size business environment

## Key Topics:

- **Why IPv6?**
- **Comparison of IPv6 vs. IPv4.**
  - Reasons for the IPv6 implementation
- **The IPv6 Header**
  - Structure of the IPv6-Protocol.
  - The New Header-Format
  - Typs of the Extension Headers
- **IPv6-Adressing**
  - The New Adressformat and Adresstyps.
  - International Registration Services and Rules.
- **ICMPv6**
  - Comparision of ICMPv6 vs ICMPv4
- **ICMPv6-based Functions**
  - Neighbor Discovery,
  - Autoconfiguration,
  - Path MTU Discovery
  - Multicast Listener Discovery (MLD)
- **IP Interface for Layer 2 (Mac-Layer)**
- **Routing-Protokoll extentions for Ipv6**
  - RIPng
  - OSPFv3
  - IS-IS
  - EIGRPv6
  - BGP
- **Mobile IPv6**



- **Upper Layer Protocol**
  - TCP
  - UDP
  - DHCPv6
  - DNS-extensions for IPv6
  - SLIPv2
  - FTP, Telnet und Webserver
- **Integration of IPv6**
  - Mechanisms like Tunneling, Dual-Stacking.
- **Security**
  - Fundamental Security concepts and Security Requirements
- **Quality of Service**
  - Fundamental requirements and Typ of QoS.