

# 16 GE + 4 GE SFP Web Smart Switch



GES-1650

H/W Version: 1

## Product Overview

LevelOne GES-1650 is a powerful, high-performance Gigabit Ethernet switch with 16 10/100/1000Mbps ports and 4 SFP(mini GBIC) ports, providing you a cost-effective, space-saving solution for expanding your network. The gigabit ports can lead you to a real gigabit connection, making you be able to transfer high bandwidth-needed files larger and faster in an easy way. And the four mini gigabit ports allow you to add fiber-optic connectivity for connecting to other network switches to obtain long-distance communication.

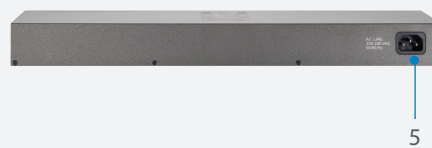
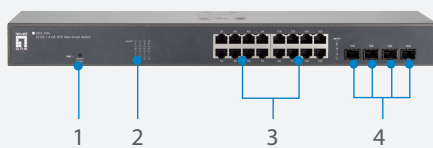
This GES-1650 device provides the easy management function through the Ethernet Web. The network administrator can configure the status and the port function setting of the device through the Web-Based UI. When installing the auto-discovery management tool helps network managers to search and access those switches on LAN easily. Therefore, network managers can access switches that support auto-discovery on LAN without memorizing IP address.

## Smart Features

GES-1650 device provides rich features including Link Aggregation, VLANs, IGMP Snooping, Port Trunking, Spanning Tree, Security (Port Security and 802.1x authentication) and other network management to meet the requirements evolving medium and small-sized enterprises. QoS secures the bandwidth for some bandwidth-demanded applications including VoIP or video conference. Additionally, IEEE 802.3az Energy Efficient Ethernet ability is supported to promise operation in Low Power Idle Mode and save power consumption.

## Easy installation and maintenance

The GES-1650 switch is plug & play and hassle-free in installation. Auto-MDI/MDI-X crossover on all ports eliminates the need for crossover cables for connection to another switch or hub. Auto-Negotiation on each port senses the link speed of a network device and intelligently adjusts for compatibility and optimal performance. This switch also features diagnostic LEDs, which display the status and activities of the ports, allowing you to quickly detect and correct problems on the network.



1. Reset Button
2. LED Indicators
3. 10/100/1000Mbps Ports
4. SFP Slot
5. Internal Power Socket

## Key Features

- Complies with IEEE 802.3, 802.3u, 802.3ab and 802.3az
- Support QoS for better communication quality
- 16 x 10/100/1000 Mbps RJ-45 ports
- 4 x SFP for optional fiber optical communication
- Supports 16K absolute MAC addresses entries
- Supports 448K Bytes RAM for data buffering
- Supports 9K bytes Jumbo frame
- Supports IEEE 802.3az Energy Efficient Ethernet
- 19-inch rack-mountable with included mounts

## Related Products



**GES-2450**  
24 GE + 4 GE SFP Web Smart Switch



**GES-2452**  
24 GE + 2 GE SFP Web Smart Switch

## Technical Specifications

### Standard Compliance

#### IEEE Standards Compatibility

- IEEE 802.3/802.3u/802.3ab
- IEEE 802.3x flow control
- IEEE 802.3az Energy Efficient Ethernet
- IEEE 802.1D spanning tree protocol
- IEEE 802.1s spanning tree protocol (MSTP)
- IEEE 802.1p class of service, priority protocols
- IEEE 802.1Q VLAN tagging
- IEEE 802.1x port authentication
- IEEE 802.3ad VLAN stacking
- IEEE 802.3ad LACP aggregation

### Hardware Specification

#### Network Interface

- 16 x 10/100/1000 Mbps RJ-45 Ports
- 4 x SFP Ports

#### LED Indicators

- 1x Power LED(Power: Green),
- 16 x 10/100/1000Mbps (Link/Act :Green)

#### Performance Specifications

- Mac Address Table Size : 16K
- Buffer memory: 448K Bytes
- Jumbo Frame : 9K Bytes

#### Electrical Specifications

- Voltage: 100 ~ 240 VAC, 50-60 Hz

#### Physical Specifications

- Dimensions: (w x d x h) 441 x 130 x 44 mm
- Weight: 2.0kg

#### Environmental Specifications

- Temperature Operating: 0°C ~ 40°C (32°~104°F);  
Storage: -40°C ~ 70°C (-40°~158°F)
- Humidity Operating: 10% ~ 90% RH, non-condensing;  
Storage: 5%~90% RH, non-condensing

#### EMI and Safety

- CE, FCC, VCCI Class A

### Software Specification

#### Traffic Management and QoS

- Rate limiting: policy-based/port-based bandwidth control, 16 kbps steps up to 1Gbps maximum
- Port-based egress traffic shaping
- Broadcast storm control
- IEEE 802.1p with 8 priority queues per port for different traffic types
- WRR (Weighted Round Robin)/SP/WFQ scheduling algorithm
- Congestion control on all ports

#### Link Aggregation

- IEEE 802.3ad LACP link aggregation compliant
- Up to 8 aggregation groups, 8 ports/per group randomly selected

#### Resilient Network

- Supports up to 16 spanning tree instances for MSTP, RSTP, and STP

#### User Security and Authentication

- MAC filtering per port secures access to each port
- IEEE 802.1Q tag-based and port-based VLAN
- 802.1x port-based authentication, compensated assignment over VLAN and bandwidth for valid access
- Access Control List(ACL) Function

#### Network Administration Security

- User name/password required for Web

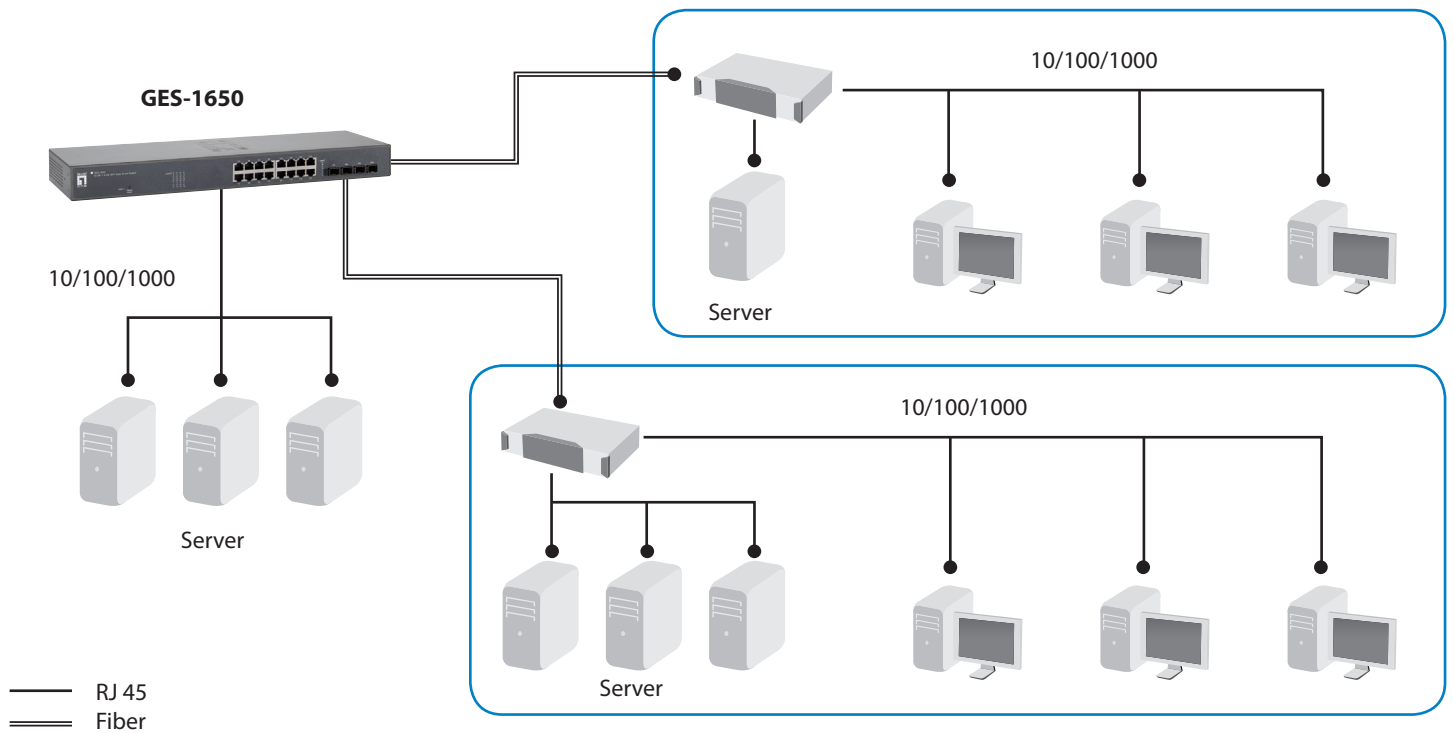
#### Network Management

- Web-based management
- RMON four RMON groups 1, 2, 3, 9 (history, statistics, alarms, and events) for enhanced traffic management, monitoring, and analysis
- Port mirroring
- SNMPv1/v2/v3
- Automatic loop detection and isolation
- MIB count
- IGMPv1/v2 snooping

#### MTBF

- System MTBF: 79,526

## Product Diagram



## Order Information

### Package Contents

### GES-1650: 16 GE + 4 GE SFP Web Smart Switch

GES-1650  
CD Manual  
Power Cord  
Quick Installation Guide  
Rack Mount Kit  
Rubber Feet x 4