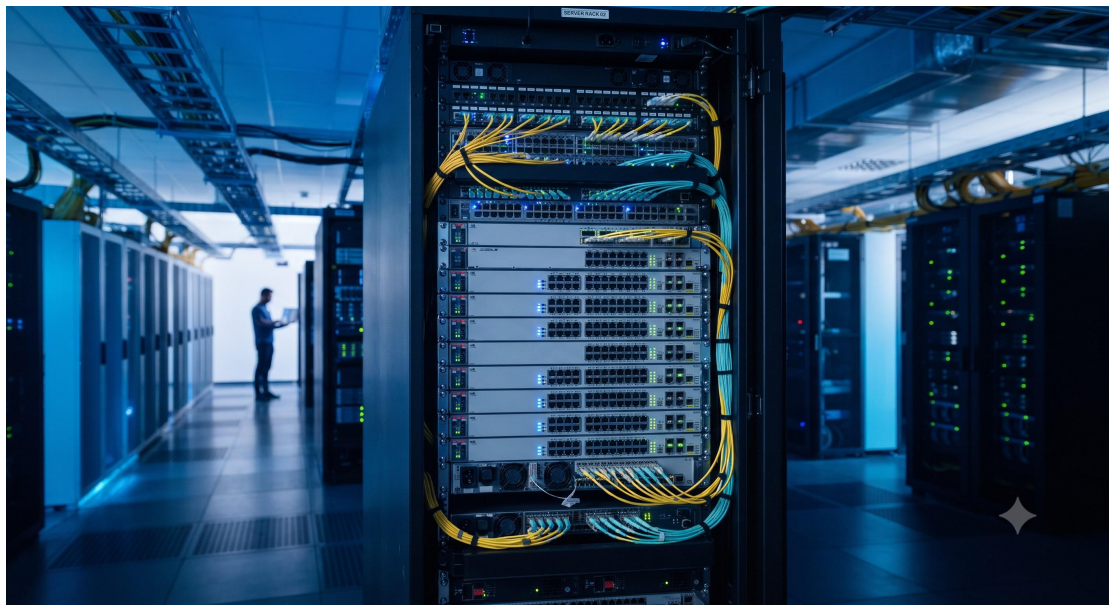


H3C Intelligent Resilient Framework (IRF) Setup - Official Technical Overview & Hardware Datasheet

PRODUCT IDENTIFICATION

H3C Intelligent Resilient Framework (IRF) is a proprietary software virtualization technology designed to combine multiple physical network devices into a single, logical virtual device. This architecture enhances network scalability, resilience, and operational efficiency, positioning it as a cornerstone for modern enterprise and data center infrastructures. This document serves as the definitive technical reference for deploying and configuring an IRF fabric, with an emphasis on a two-member setup as a foundational deployment model.



SYSTEM HARDWARE TOPOLOGY

The IRF architecture transforms a physical network topology into a simplified, virtualized logical topology. In a standard configuration, IRF member devices are interconnected using a star topology through a Layer 2 network, which can be a direct connection or via an intermediate switch . This setup does not require dedicated physical links for control plane traffic, as service and IRF protocol packets share the same physical infrastructure. For a two-member fabric, direct connection is supported, providing a streamlined and high-bandwidth interconnect.

DATA & CONTROL PLANE CAPABILITIES

IRF employs a distributed architecture where one member device is elected as the Master, responsible for managing and controlling the entire IRF fabric. All other members operate as Standby devices, actively processing data traffic while providing 1:N redundancy for the master. This dual role ensures high availability; upon master failure, a new master is automatically elected from the standby pool without service interruption .

COMPONENT BREAKDOWN

- ****IRF Member Role:**** Each participating device is a member, uniquely identified by a member ID (e.g., 1, 2).

- ****IRF Port:**** A logical interface (e.g., `irf-port 1/2`) that forwards data and control packets between members. Each device has dedicated IRF ports.
- ****IRF Physical Interfaces:**** The physical ports (e.g., Ten-GigabitEthernet, QSFP+) on a switch that are bound to an IRF port to form the physical link.
- ****Member Priority:**** A configurable value (1-32) that influences master election; a higher value increases the likelihood of becoming the master. The default is 1.

OPERATIONAL SPECS MATRIX

The setup of an IRF fabric involves a systematic process to ensure stability and correct operation. The key steps are predicated on a two-member scenario.

****Prerequisites:****

All member devices must operate on the same software version. The `irf auto-update enable` command ensures software synchronization .

****Connection Topology:****

- For a two-member fabric, `IRF-port 1/2` on Member 1 connects to `IRF-port 2/1` on Member 2 .
- IRF physical interfaces support QSFP+ and QSFP28 connections; specific models may have compatibility restrictions. For example, the S9850-4C uses

QSFP+ ports for 40G IRF links .

****Master Election:****

- The master is elected based on priority, system uptime, and CPU MAC address .
- A switch with a higher priority (e.g., Device A with priority 32) is favored over one with a lower priority (Device B with priority 1) .

Parameter	Specification
IRF Member ID	Unique numeric identifier (e.g., 1, 2) assigned per device
IRF Member Priority	1 to 32; higher values increase chance of becoming Master (Default: 1)
IRF Port Configuration	Logical port (e.g., irf-port 1/2) bound to physical interfaces
Physical Interface	Typically 10GE, SFP+, QSFP+, or QSFP28 ports; model-dependent
IRF Link	Can be configured as Control, Data, or Hybrid channel
MAD Mechanism	LACP, ARP, or ND for multi-active detection

REGULATORY COMPLIANCE

All H3C equipment complies with international safety, electromagnetic compatibility, and environmental standards. Specific certifications, such as CE, FCC, and RoHS, are applicable to the respective switch series and are detailed within the Hardware Information and Installation Guides. IRF itself is a software-defined architecture that adheres to these hardware certifications, ensuring the virtualized system operates within the same compliant parameters.

