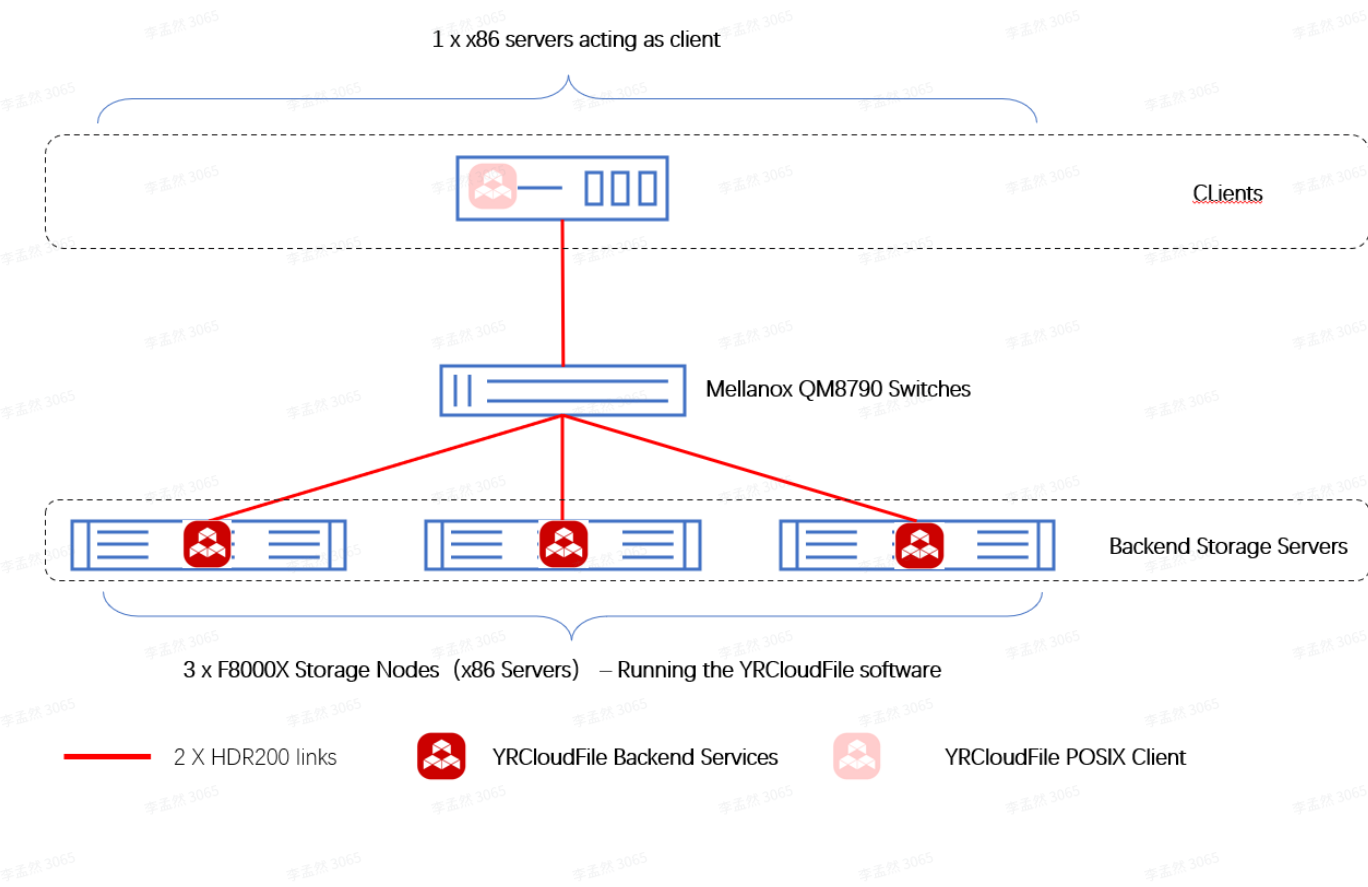


# F8000X\_8x7000GiB\_nvme\_2xHDR200\_Nclients1

## 1. Hardware

The hardware is composed of one client and three servers connected to the same switch.

Hardware Diagram



### 1.1 Client

The client is a commercial x86 architecture server node with 2 CPU socket and 256GiB of RAM based on AMD motherboard. The configuration is the default one. The client communicates with the server through IB using the two links dedicated for storage.

The detailed configuration of the client is shown in the following table:

Client Node components	Configuration Description	Client Node Count
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Client CPU	<ul style="list-style-type: none"><li>• AMD EPYC 7642 48-Core Processor x 2</li></ul>	1
Client Memory	<ul style="list-style-type: none"><li>• 256GB DDR4 3200</li></ul>	
Client OS Boot Drive	<ul style="list-style-type: none"><li>• 7000 GiB nvme SSD x 1</li></ul>	
Client network_type	<ul style="list-style-type: none"><li>• Mellanox CX6 Single-port HDR200 InfiniBand HCAs x 2</li></ul>	

## 1.2 Server

The server is a commercial YanRongTech F8000X appliance (storage), based on the x86 server architecture, using the YRCloudFile distributed file storage system. For this testing environment, the F8000X storage system consists of 3 storage server nodes. The configuration of each storage node includes: 1 x 446GiB SATA SSD as the system OS drives, 2 x Memblaze 7940 7000 GiB NVMe SSDs as metadata drives, 8 x Memblaze 7940 7000 GiB NVMe SSDs as data drives, and 2x single-port CX6 200Gbps HDR InfiniBand Host Channel Adapters (HCAs).

The server communicate with the client through IB:

- 2x single-port HDR200 adapters for a total of 2x HDR200 links

The detailed configuration of the servers is shown in the following table:

Server Node components	Configuration Description	Server Node Count
Server CPU	<ul style="list-style-type: none"><li>• AMD EPYC 7543 32-Core Processor x 2</li></ul>	3
Server Memory	<ul style="list-style-type: none"><li>• 256GB DDR4 3200</li></ul>	
Server OS Boot Drive	<ul style="list-style-type: none"><li>• 446GiB SATA SSD x 1</li></ul>	
Metadata drives	<ul style="list-style-type: none"><li>• Memblaze 7940 7000 GiB nvme SSD x 2</li></ul>	
Data drives	<ul style="list-style-type: none"><li>• Memblaze 7940 7000 GiB nvme SSD x 8</li></ul>	
Server network_type	<ul style="list-style-type: none"><li>• Mellanox CX6 Single-port HDR200 InfiniBand HCAs x 2</li></ul>	

## 1.3 Switch

The switch is a commercial NVIDIA （Mellanox） QM8790. The client and server are connected to it.

## 2. Software

## 2.1 Client

The configuration of the client-side software is shown in the table below:

Software Type	Software Version
Client OS	Ubuntu 22.04
Client Kernel	5.5.0-104-generic
yrfc-client	YRCloudFile 6.10.5
Mellanox OFED version	MLNX_OFED_LINUX-23.10-2.1.3.1

## 2.2 Server

The configuration of the Server-side software is shown in the table below:

Software Type	Software Version
YRCloudFile OS	YRCloudFile 6.10.5
Storage Servers OS	CentOS Linux release 7.9.2009 (Core)
Storage Servers Kernel	5.3.18.20211010 x86_64 GNU/Linux
Mellanox OFED version	OFED-internal-5.4-3.4.0

# 3. Settings

## 3.1 Client

The standard yrfc-client (Version: YRCloudFile 6.10.5) is installed on the client using the default installation procedure. yrfc-client is used for the client to access the remote YRCloudFile filesystem.

## 3.2 Server

For detailed configuration information about storage servers, see the table below:

storage_system	Description

vendor_name	YanRongTech
solution_name	YRCloudFile
model_name	F8000X
version	6.10.5
usable_capacity_GiB	81920
raw_capacity_GiB	163840

### 3.3 Switch

No tuning applied.

## 4. Configuration

### 4.1 Configure Direct IO

#### 4.1.1 Client Configuration

Edit the configuration file `/etc/yrfs/yrfs-client.conf`

```
1 cluster_addr = 100.10.10.30,100.10.10.31,100.10.10.32
2 enable_cache = false
3 enable_multi_channel = true
4 timeout_sock_conn_ms = 100
5 nr_conn_socks_pernode = 512
6 rdma_mode=0
7 mnt_wait_timeout_ms = 1600
```

#### 4.1.2 Storage Backend Configuration

Configure storage through the yrcli command line:

```
1 yrcli --config --type=oss --key=enable_read_cache --op=set --value=false
2 yrcli --config --type=oss --key=enable_dio_read --op=set --value=true
```