

# NUUO Crystal™ 3.4.x Server Replacing Procedure

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## Revision History

Date	Modified
2017 / Nov / 21	➤ Remove topics about File Transformation, which is obsolete after Crystal version 3.4 and later
2015 / Jan / 22	<ul style="list-style-type: none"> <li>➤ Topic 2.7: notice that enabling devices after activating license is required</li> <li>➤ Topic 3.8: enhance figure 3.8.2</li> <li>➤ Topic 4.8: initialize this topic</li> </ul>
2014 / Sep / 25	Initial version

# 1 The Usual Maintenance

## 1.1 System Installation

When installing NUUO Crystal™, it is recommended that the deployment of drives is recorded. For example, a CT-8000R(P) server attaching 8 hard drives, 1 e-SATA storage and 2 iSCSI storages may have deployment as followed, and a deployment table can be kept for maintenance:

Server IP: xx.xxx.xxx.xxx ( CT-8000R(P) )			
Disk1	RAID-0	Volume1	Management Server
Disk2	RAID-0	Volume2	Metadata Server
Disk3	RAID-5	Volume3	Recording Server
Disk4	RAID-5		
Disk5	RAID-5		
Disk6	RAID-5	Volume4	Recording Server
Disk7	RAID-5		
Disk8	RAID-5		
Disk9	e-SATA	Volume 5	Recording Server
Disk11	iSCSI	Volume 6	Recording Server
Disk12	iSCSI		

This deployment information can be retrieved from server’s web page and the Config tab of NUUO Crystal™ NuClient.

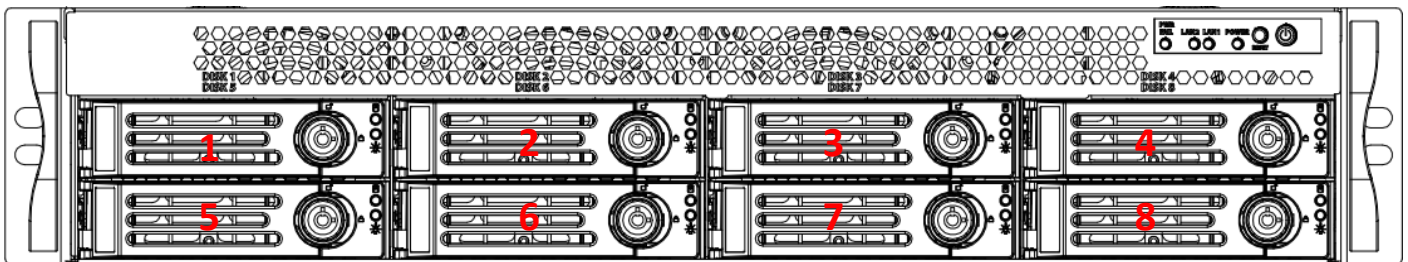


Figure 1.1.1: Positions of Disk1 to Disk8

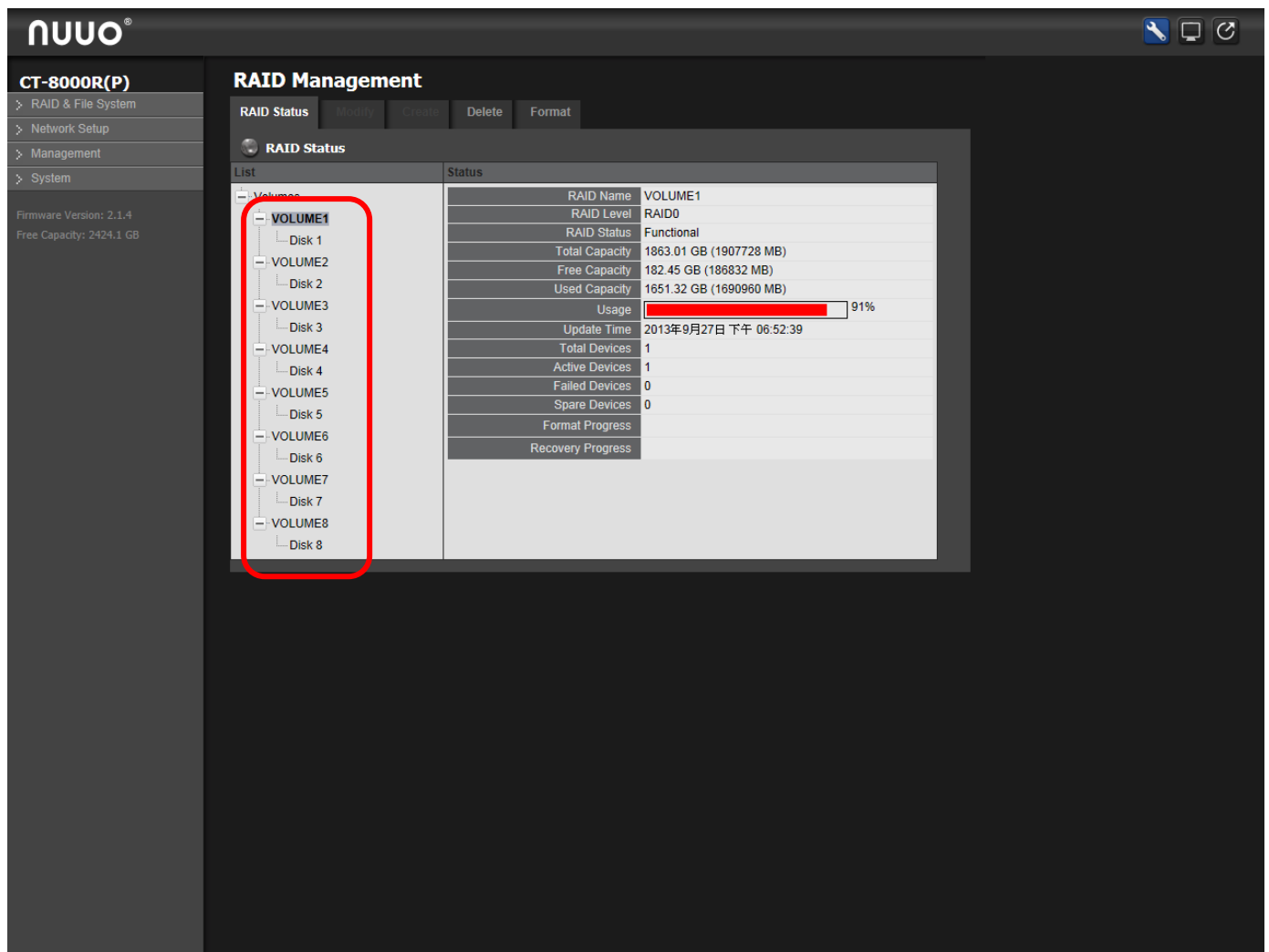


Figure 1.1.2: Web page showing mapping between physical disks and logical volumes

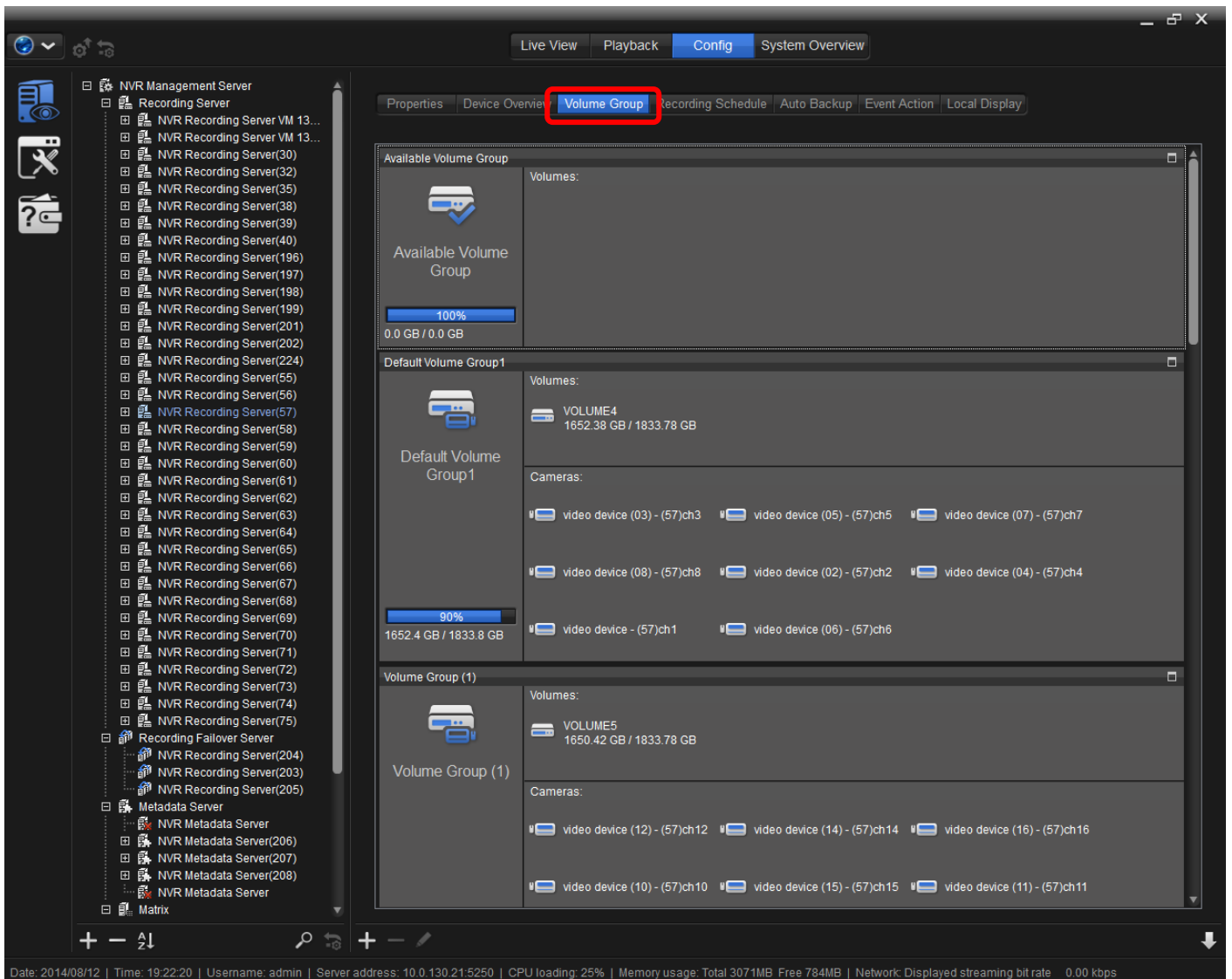


Figure 1.1.3: Listings of how volumes are occupied by recording servers

## 1.2 System Configuration

Before and after altering system configuration, it is recommended that total system configuration is exported and saved. It would be more convenient to recover system by importing a previous backup configuration.

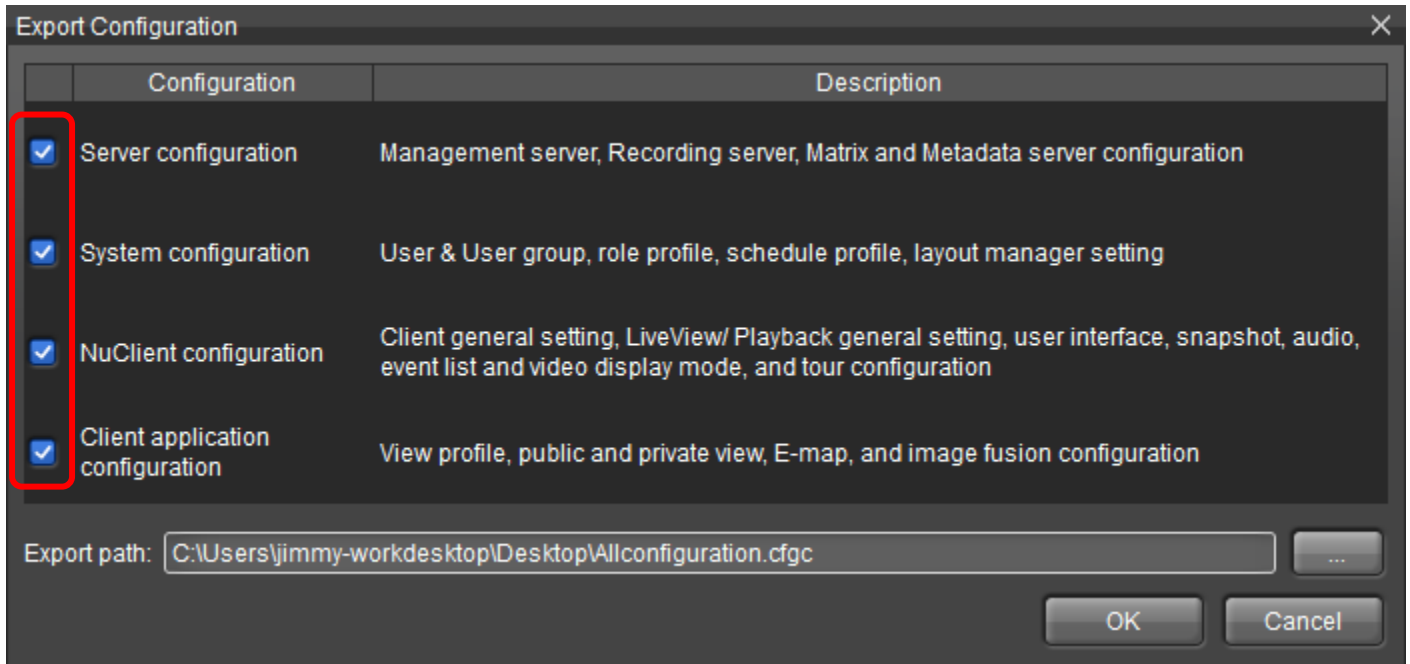


Figure 1.2.1: Exporting all configurations

## 2 Replacing a Management Server

In the following procedure, an out-of-order management server is represented by **Server A**, and **Server B** is a new one to replace **Server A**.

### 2.1 Save Configuration

If **Server A** is still operational, export and save its total configuration.

If **Server A** is not operational, please prepare previous backup configuration. This configuration file will be applied in step 2.6.

### 2.2 Transfer License

If **Server A** is still operational, manually transfer its license.

If **Server A** is not operational, please contact NUUO Support Team for service about license.

([www.nuuo.com/eHelpdesk.php](http://www.nuuo.com/eHelpdesk.php))

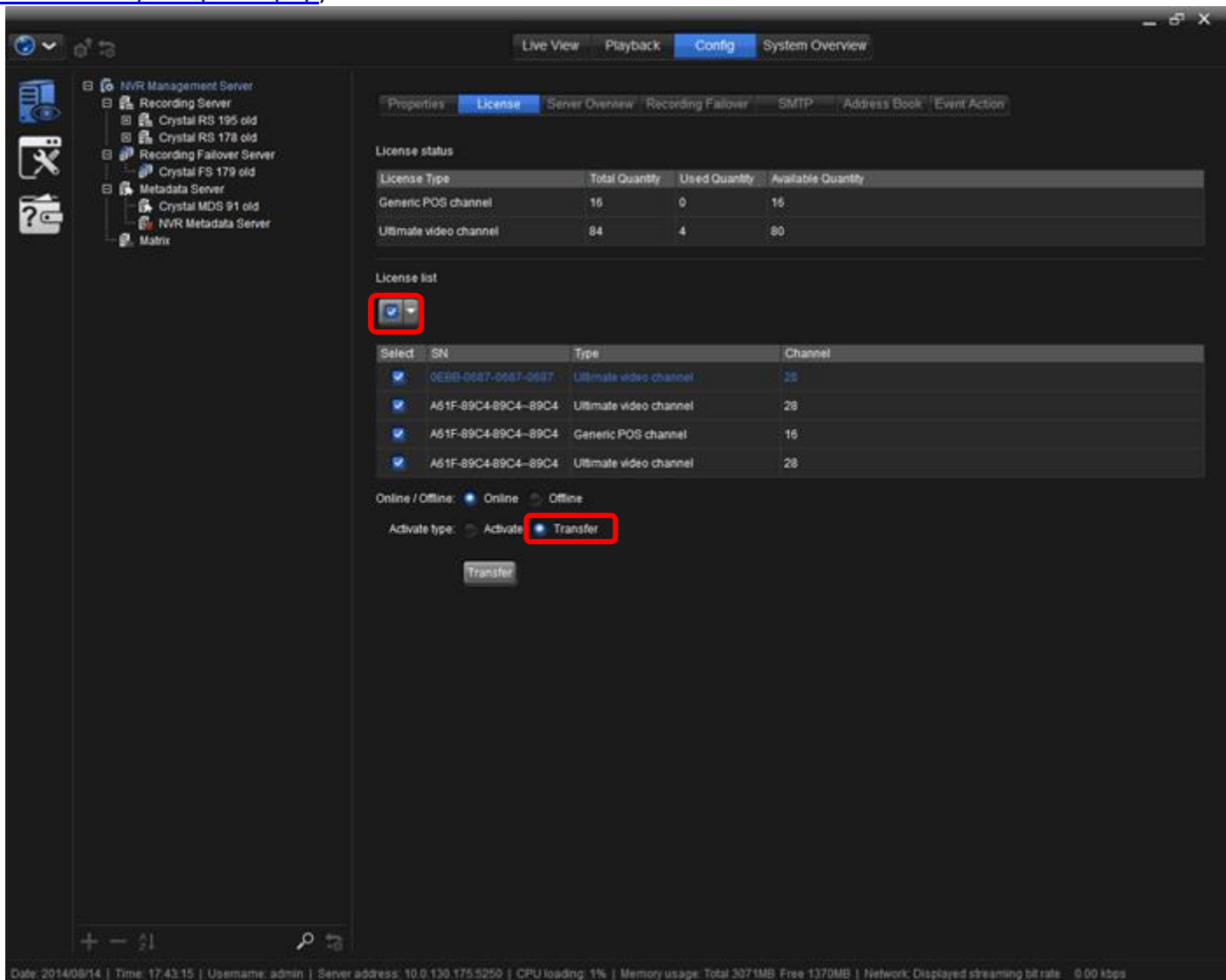


Figure 2.2.1: How to transfer license

## 2.3 Shut Down Server

If **Server A** is still operational, shut down its power.

If **Server A** is not operational, please go to step 2.4 directly.

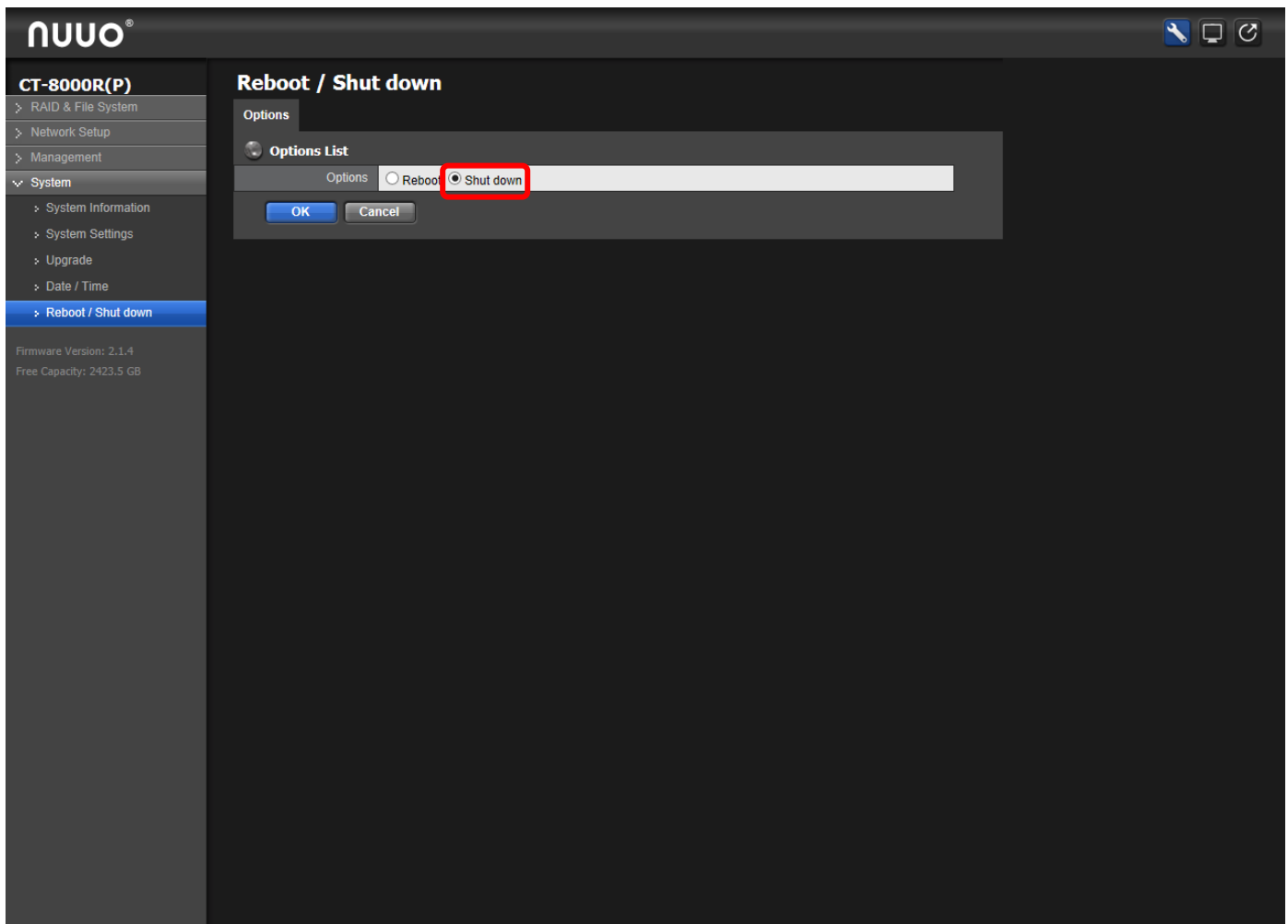


Figure 2.3.1: How to shut down a server

## 2.4 Move Volumes

Move all volumes from **Server A** to **Server B**.



## 2.5 Enable Management Server Service

Power-on **Server B** first. Enable Management Service via **Server B**'s web page or Install Wizard. It is strongly recommended that **Server B** is assigned with identical IP address of **Server A**.

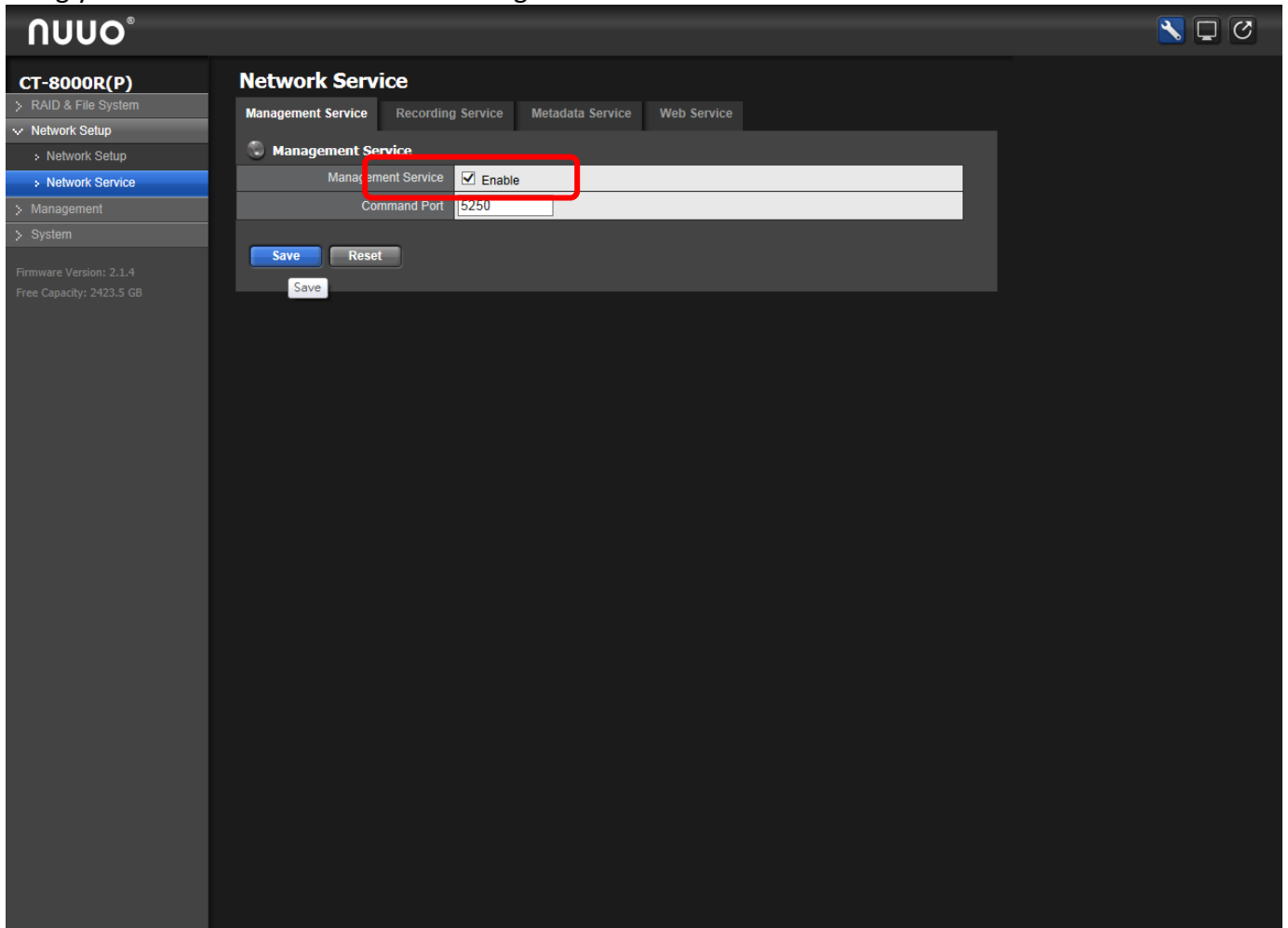


Figure 2.5.1: How to enable management service in web page

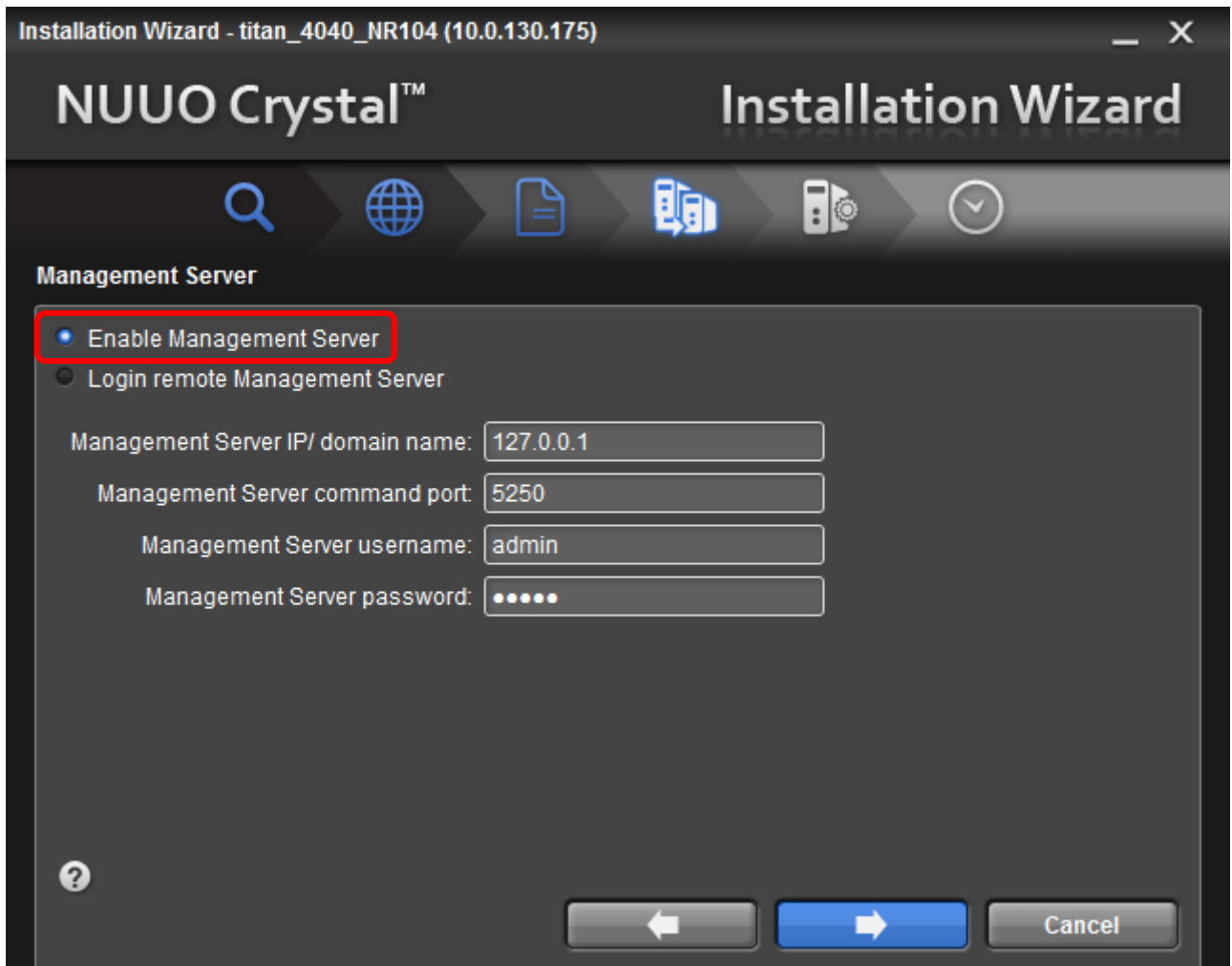


Figure 2.5.2: How to enable management server in Install Wizard

## 2.6 Restore Configuration

By assigning volume of Management Server, one may encounter conditions described as followed:

(1) In most cases, a dialog showing message “Apply Target Volume Configuration” will appear, and the system is restored without problem.

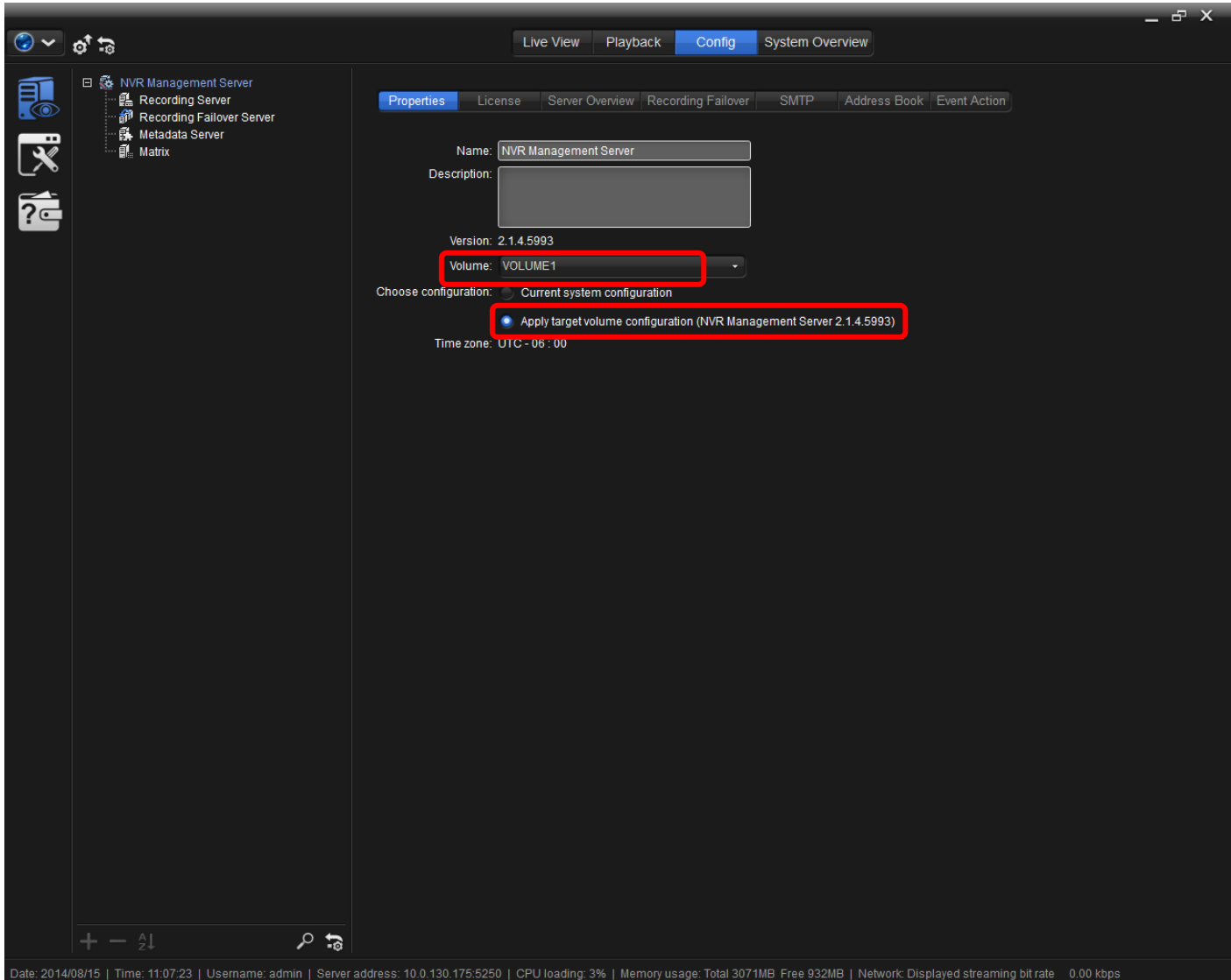


Figure 2.6.1: Assigning previous volume to management server and applying its configuration

(2) If the configuration cannot be recovered from the volume assigned, please import configuration file previously prepared in step 2.1 to restore the system.

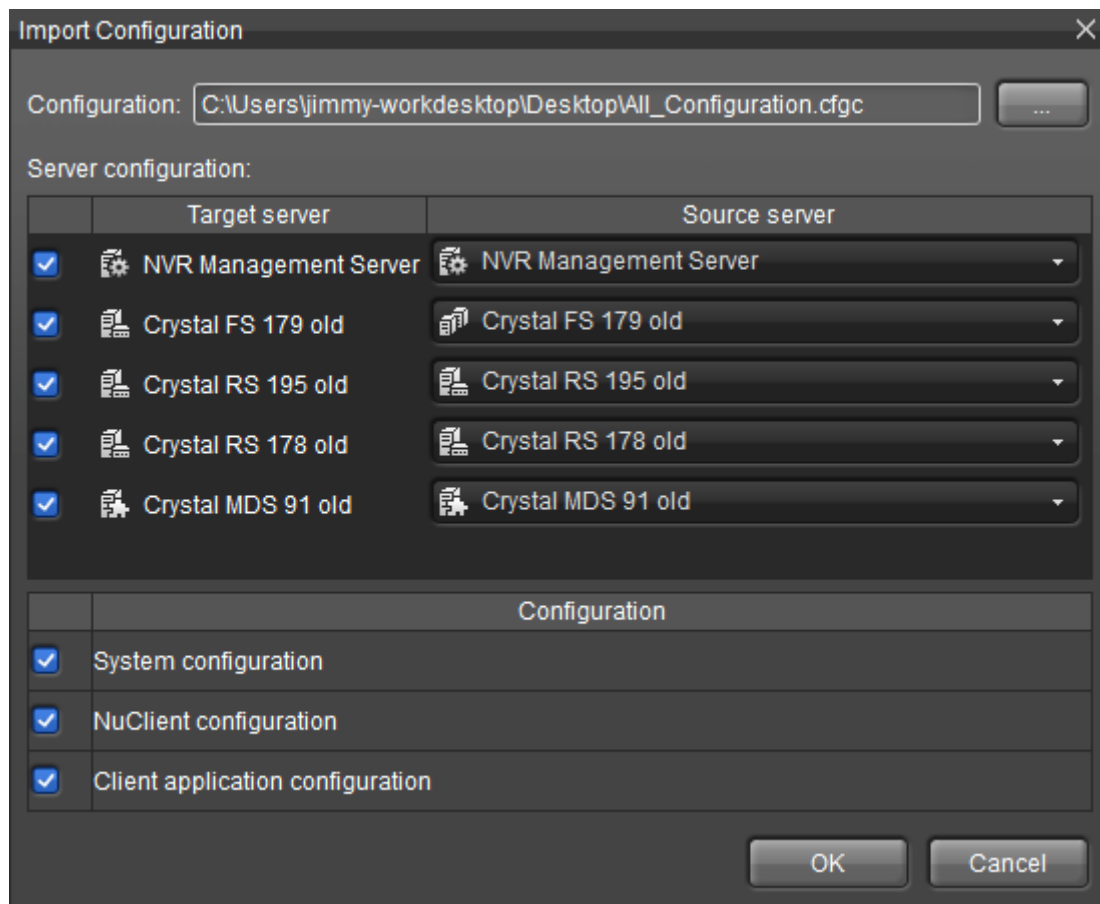


Figure 2.6.2: Importing previous saved configuration

(3) If configuration is not available, please setup the system manually.

## 2.7 Activate License

Login **Server B** via NuClient by default username and password (admin / admin). Activate license which was already transferred out in step 2.2. If the original license of **Server A** could not be transferred in step 2.2, please contact NUUO Support Team for service about license. ([www.nuuo.com/eHelpdesk.php](http://www.nuuo.com/eHelpdesk.php))

After license is activated, all devices should be enabled manually.

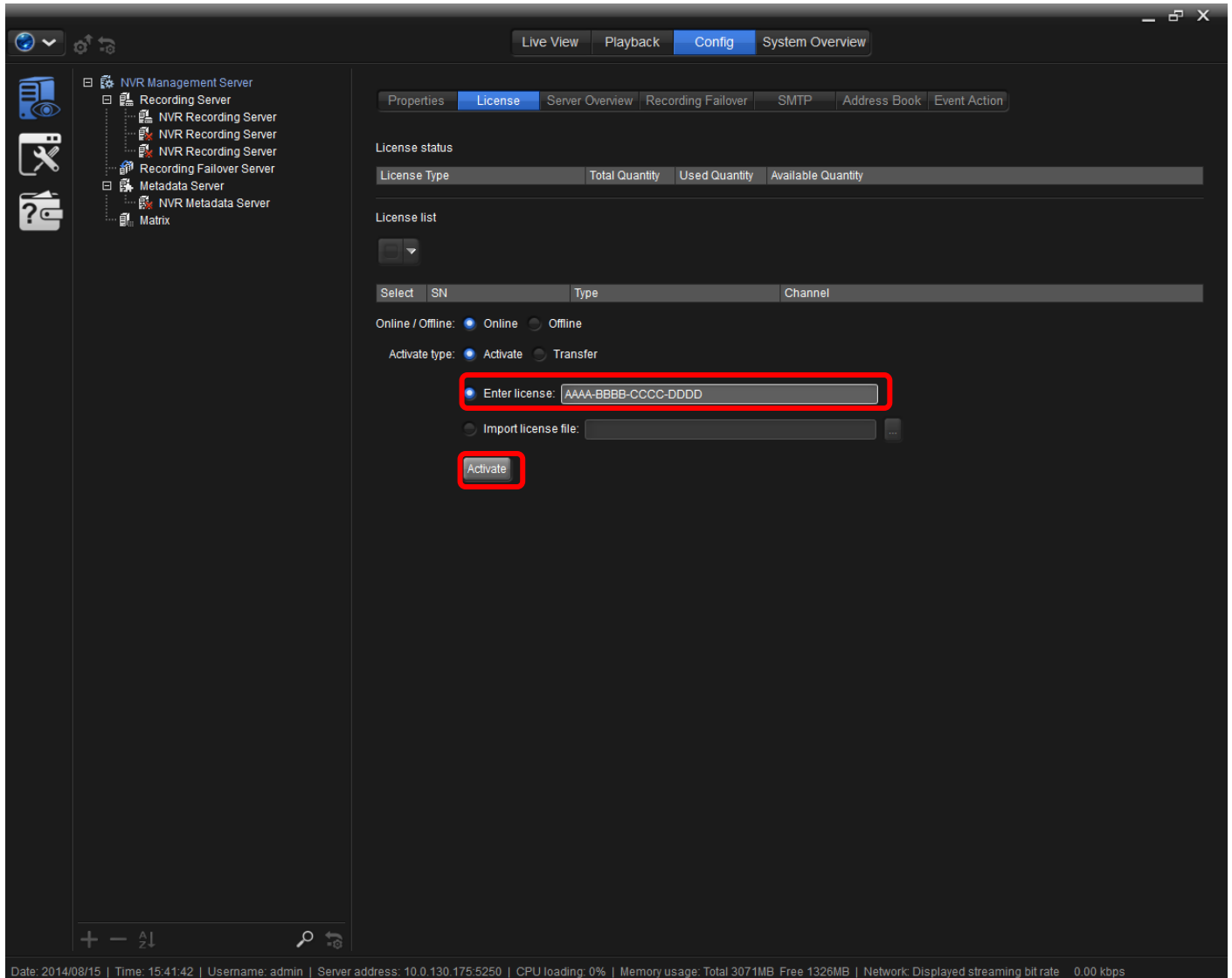


Figure 2.7.1: How to activate license

### 3 Replacing a Recording Server

In the following procedure, an out-of-order recording server is represented by **Server A**, and **Server B** is a new one to replace **Server A**. If a Failover **Server F** is presented, **Server F** is doing recording failover for **Server A**.

#### 3.1 Save Configuration

Login Management Server via NuClient and export configuration file of **Server A**. This configuration file will be used in step 3.4 and step 3.7.

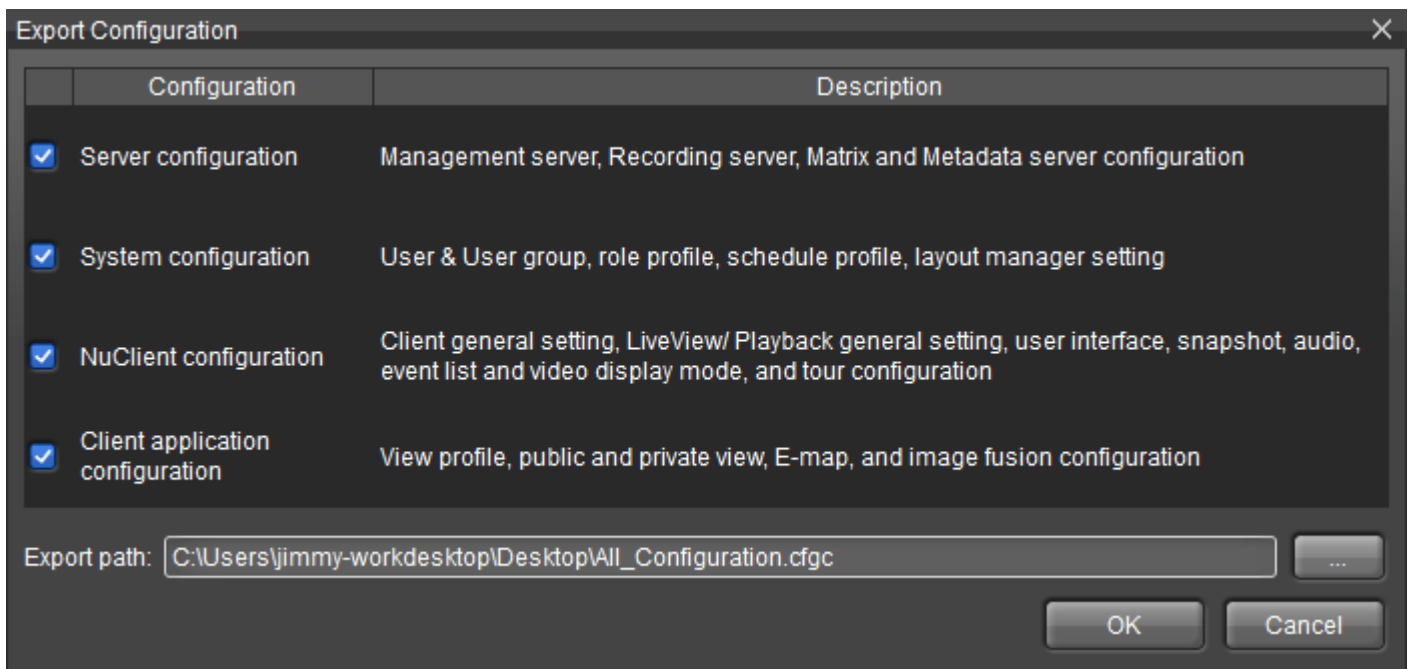


Figure 3.1.1: Exporting all configuration of recording server

#### 3.2 Move Volumes

Power off **Server A** and **Server B**. Move all volumes from **Server A** to **Server B**.

### 3.3 Enable Recording Server Service

Enable Recording Service via **Server B's** web page or Install Wizard. Login **Server B** to its Management Server.

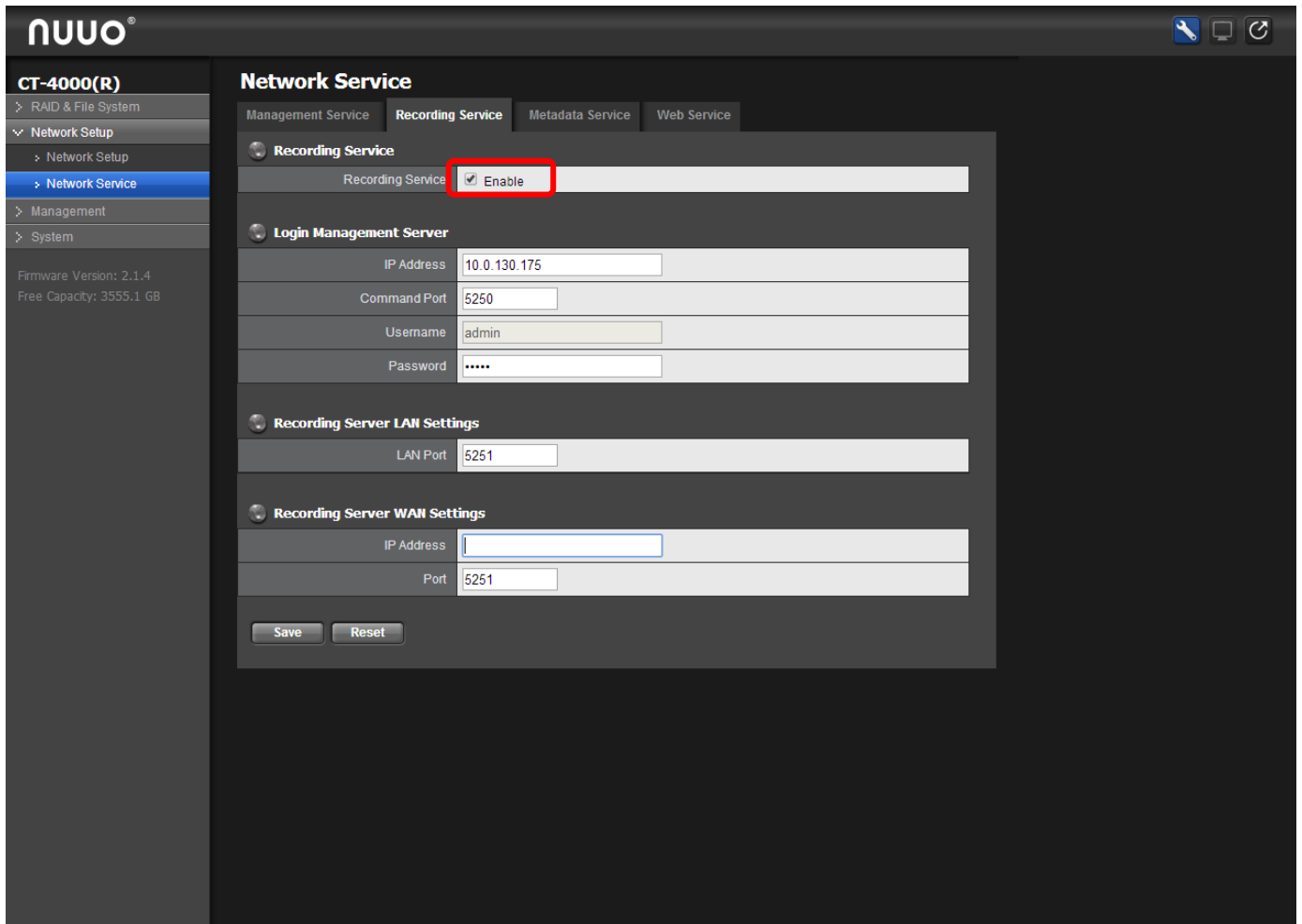


Figure 3.3.1: How to enable recording service in web page

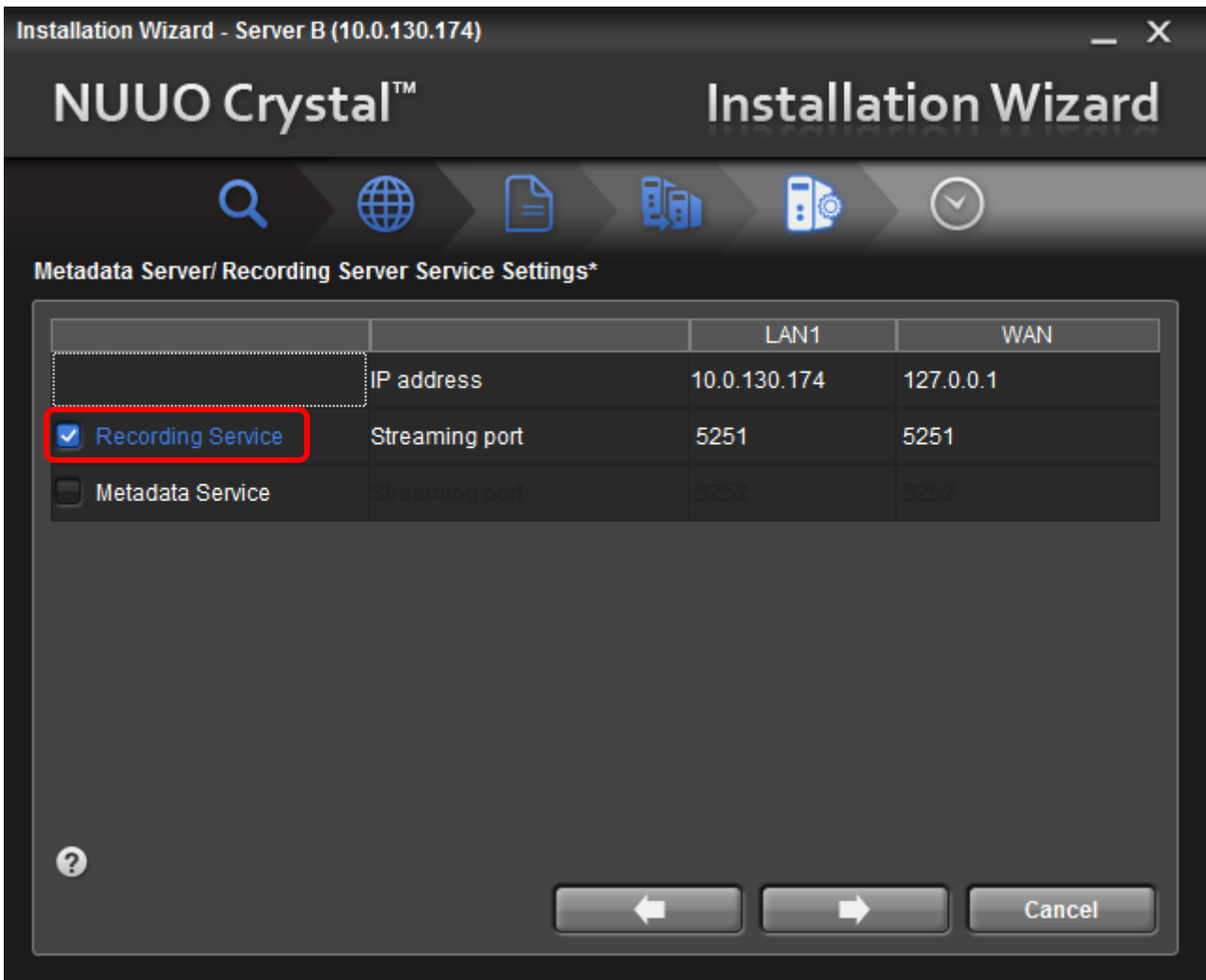


Figure 3.3.2: How to enable recording server in Install Wizard



### 3.4 Restore Configuration

Login Management Server via NuClient. Import configuration of **Server A** to **Server B**.

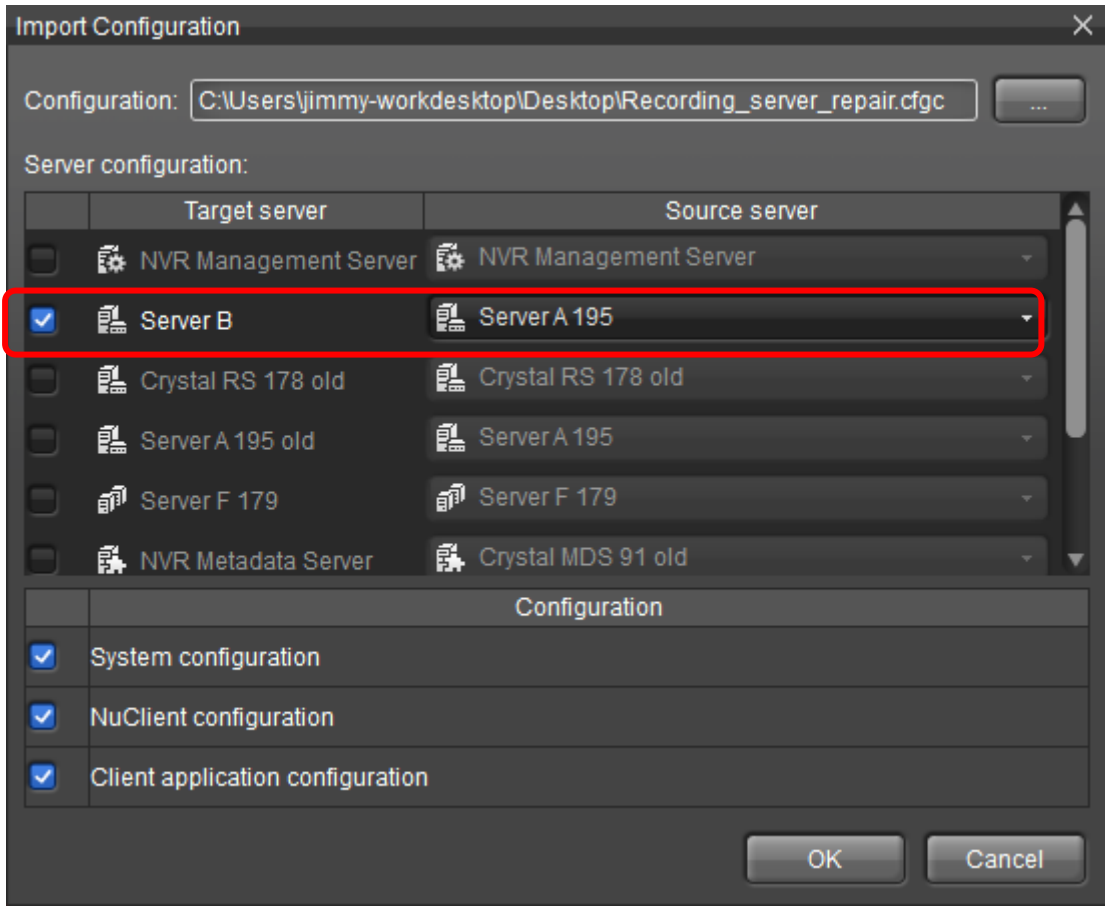


Figure 3.4.1: How to import configuration file to a recording server

## 3.5 Remove Out-of-order Recording Server

Remove **Server A** permanently via NuClient.

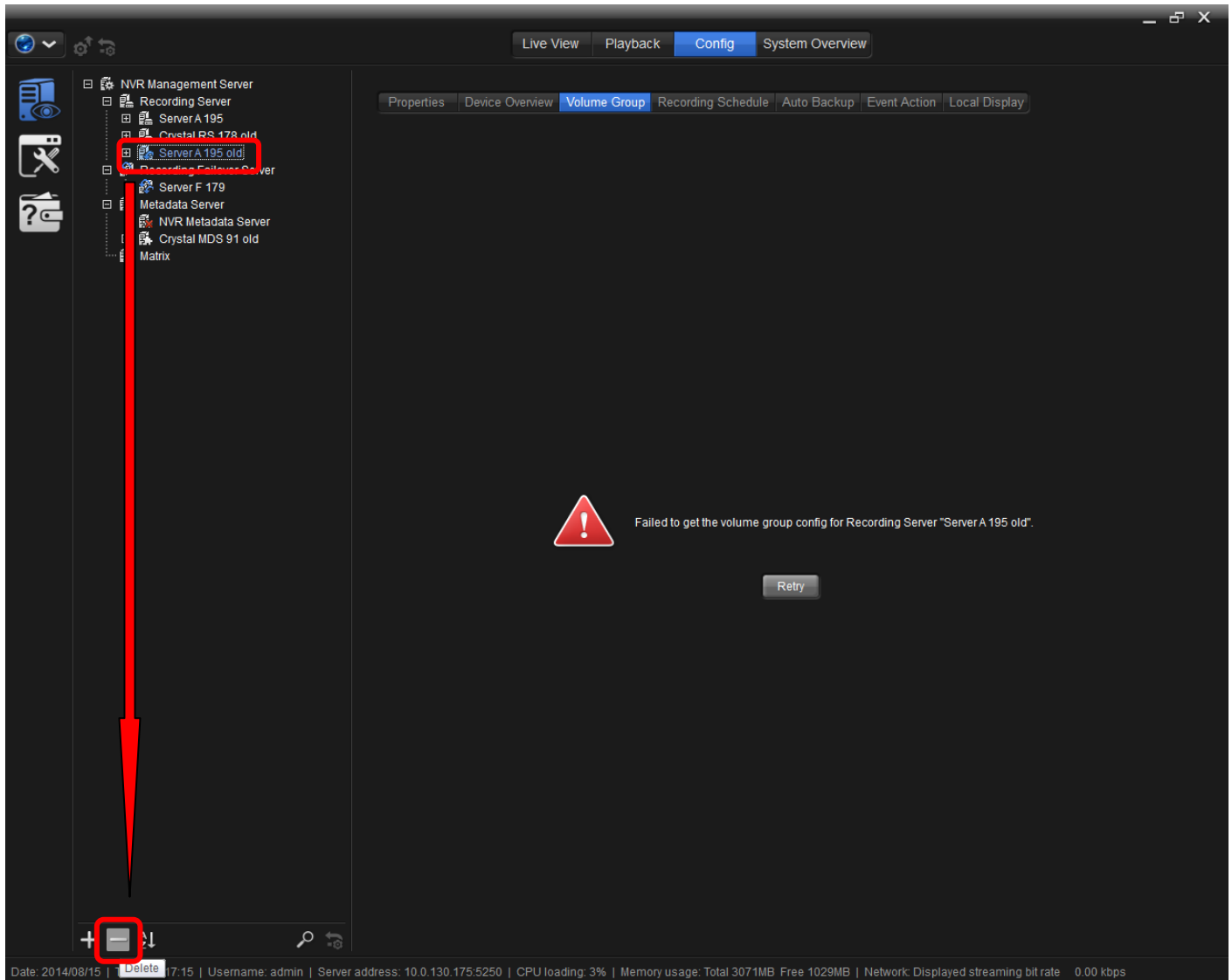


Figure 3.5.1: Removing a disconnected recording server

### 3.6 Verify Volume Group Setting and Recording

Verify volume group setting of **Server B** is identical to that of **Server A**. Manually adjust volume group setting of **Server B** when it is necessary. After volume group setting is verified, video recording should be functioning.

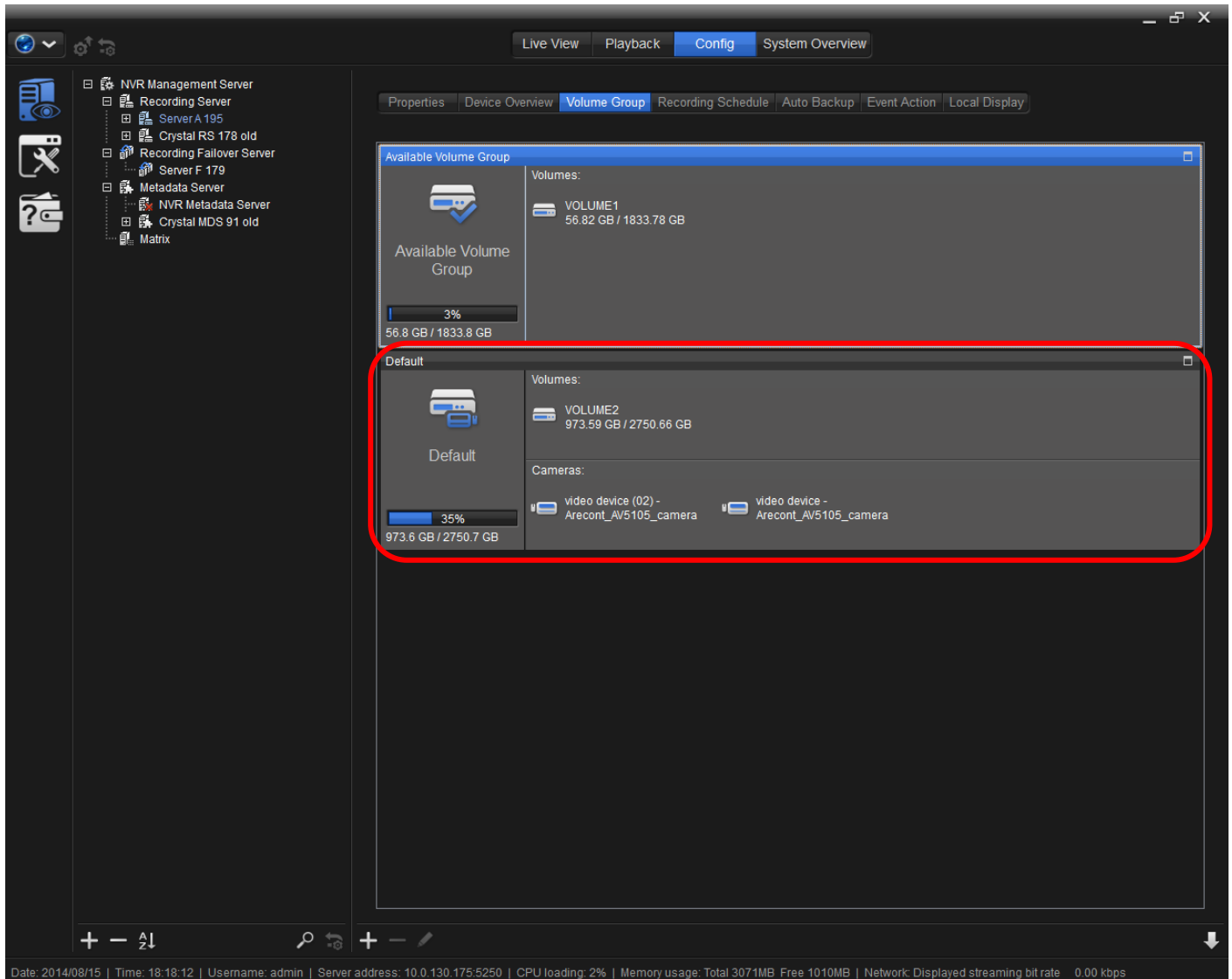


Figure 3.6.1: Verifying volume group settings

### 3.7 File Migration

If a Failover **Server F** is presented, it should have done recording failover for **Server A**. **Server A**'s video files stored in **Server F** should be converted to be **Server B**'s. Select from NuClient's menu item "Migrate Failover Files", and select configuration file of **Server A** exported in step 3.1. Choose **Server A** as source server and **Server B** as target server. Complete File Migration process without interception. Restart all NuClient when File Migration process is done.

If there is no Failover Server, it is not necessary to execute this step.

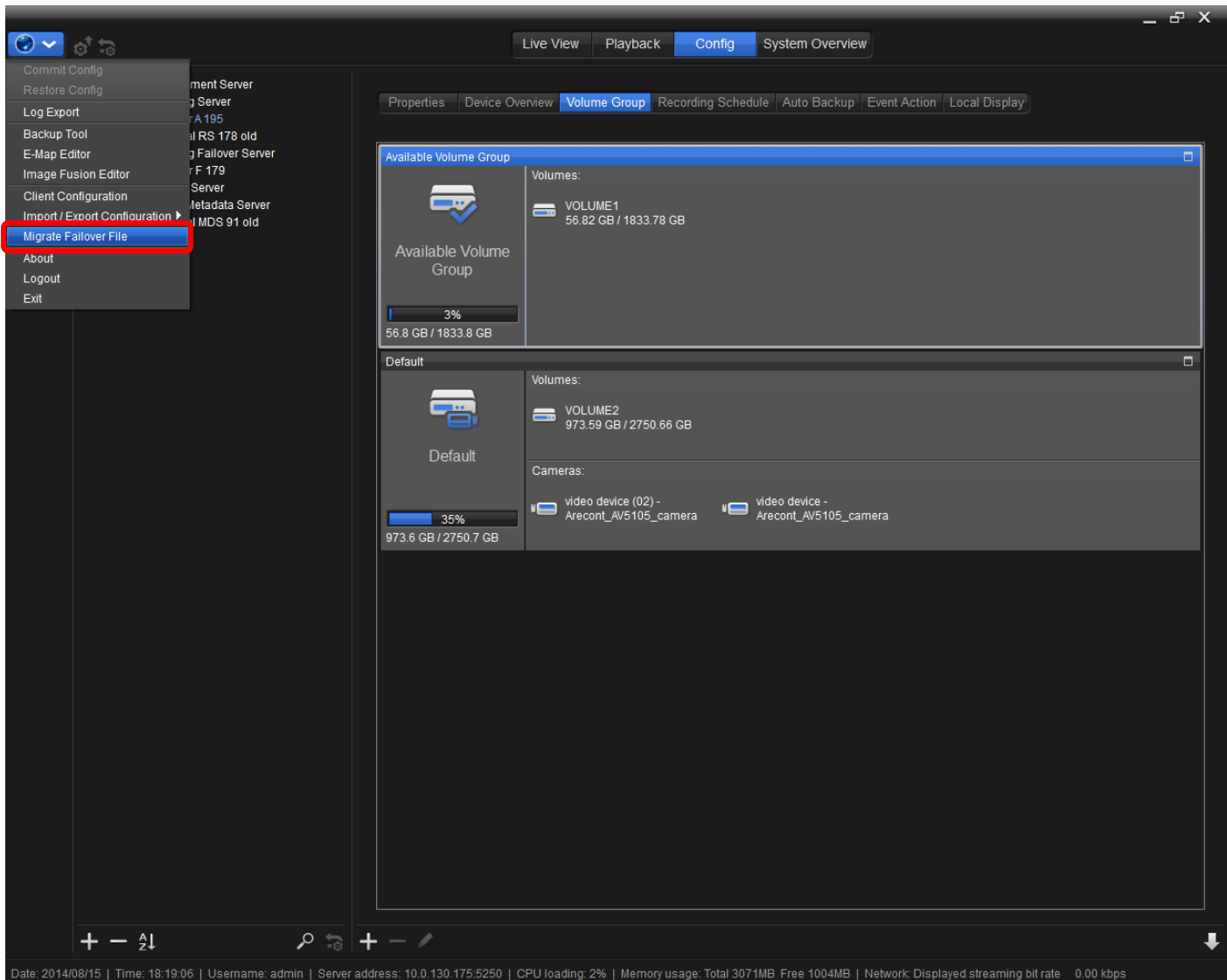


Figure 3.7.1: How to execute file migration

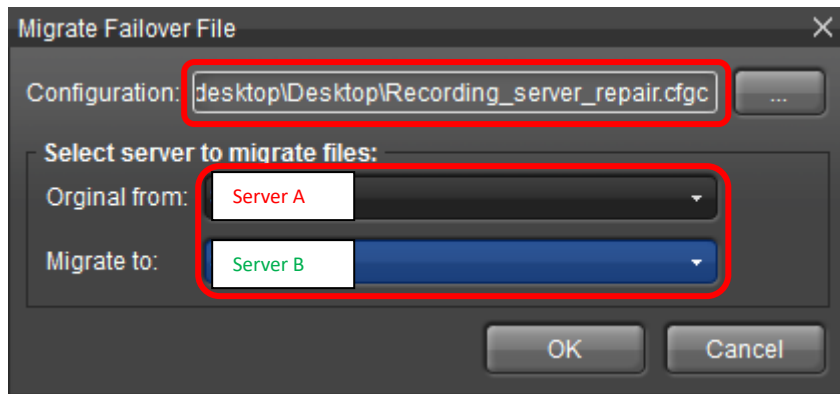


Figure 3.7.2: How to setup file migration

## 4 Replacing a Failover Server

In the following procedure, an out-of-order failover server is represented by **Server A**, and **Server B** is a new one to replace **Server A**.

### 4.1 Save Configuration

Login Management Server via NuClient and export configuration file of **Server A**. This configuration file will be used in step 4.4.

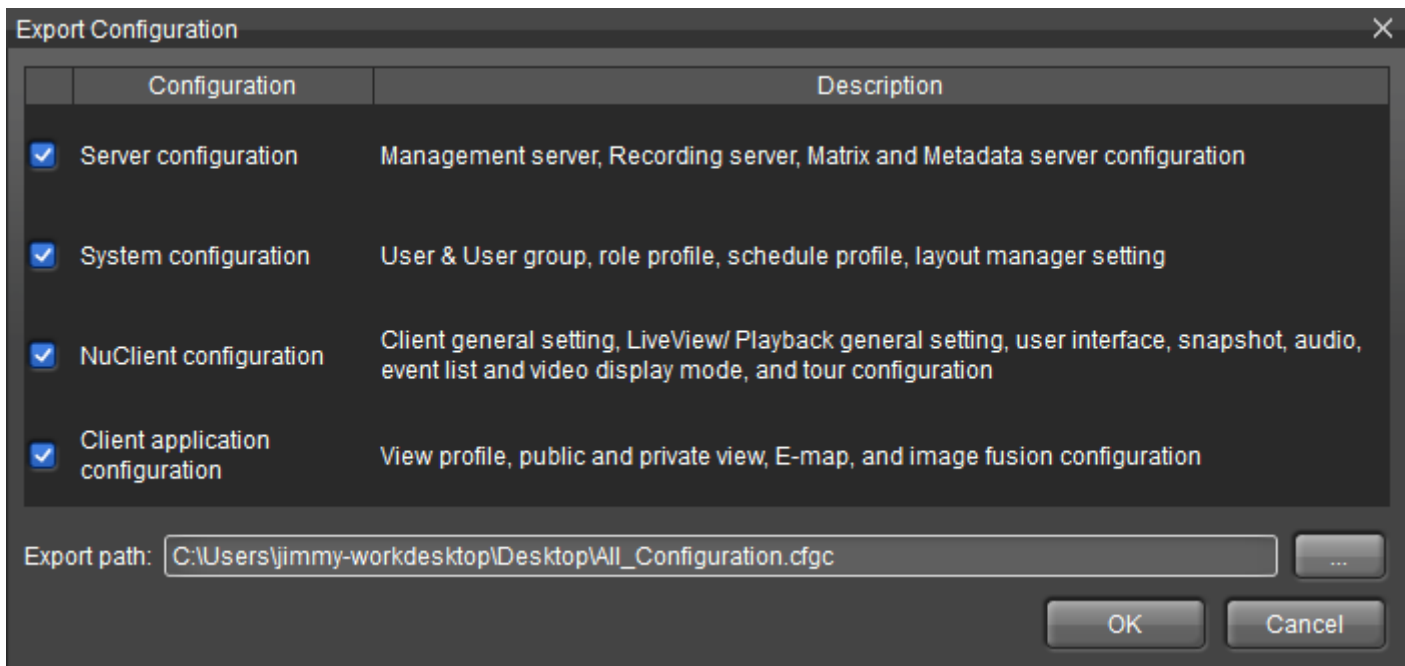


Figure 4.1.1: Exporting all configuration of failover server

### 4.2 Move Volumes

Power off **Server A** and **Server B**. Move all volumes from **Server A** to **Server B**.

### 4.3 Enable Recording Server Service

Enable Recording Service via **Server B's** web page or Install Wizard. Login **Server B** to its Management Server. Please be noted that a Failover Server also requires Recording Server Service to be enabled.

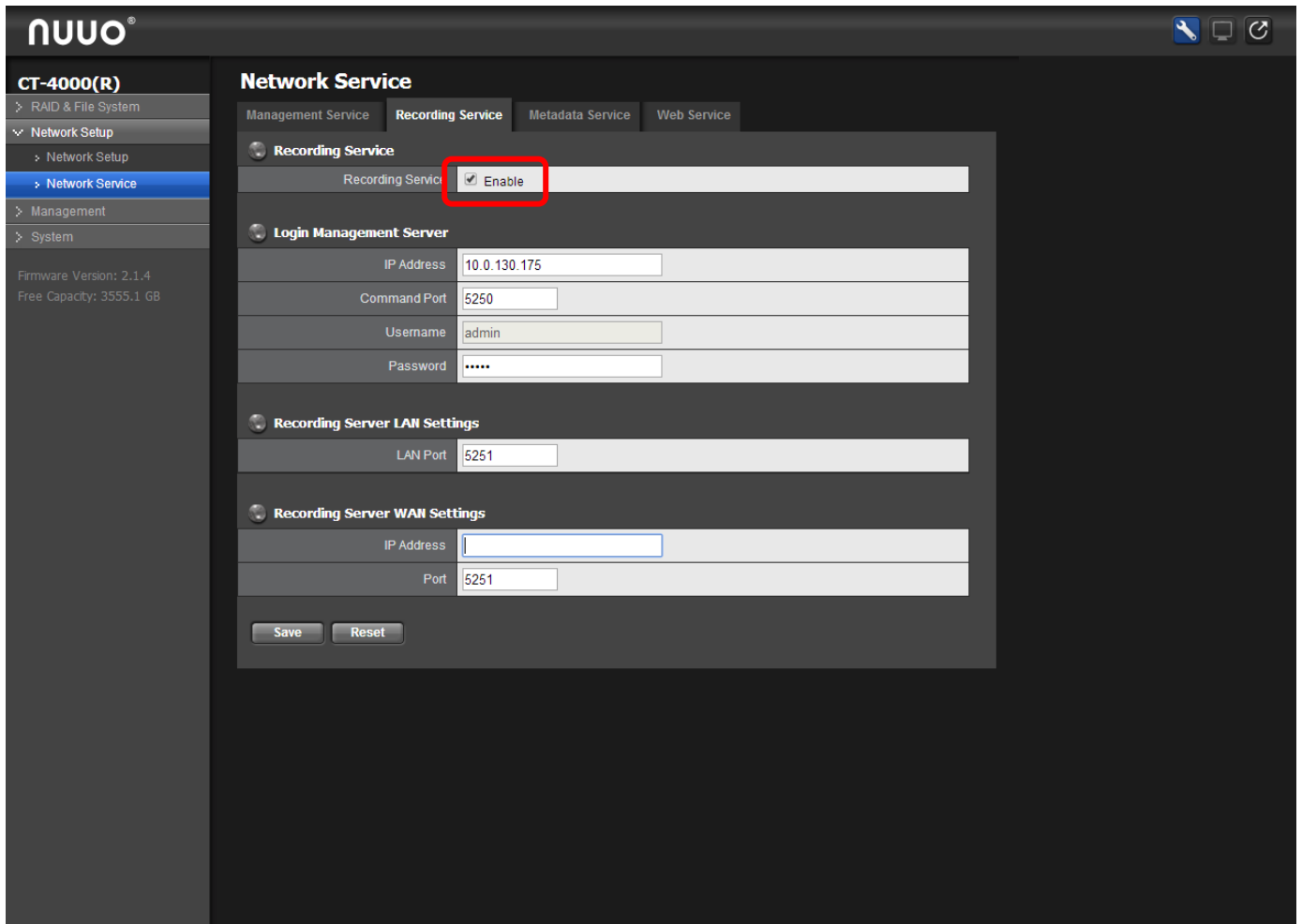


Figure 4.3.1: How to enable recording service in web page

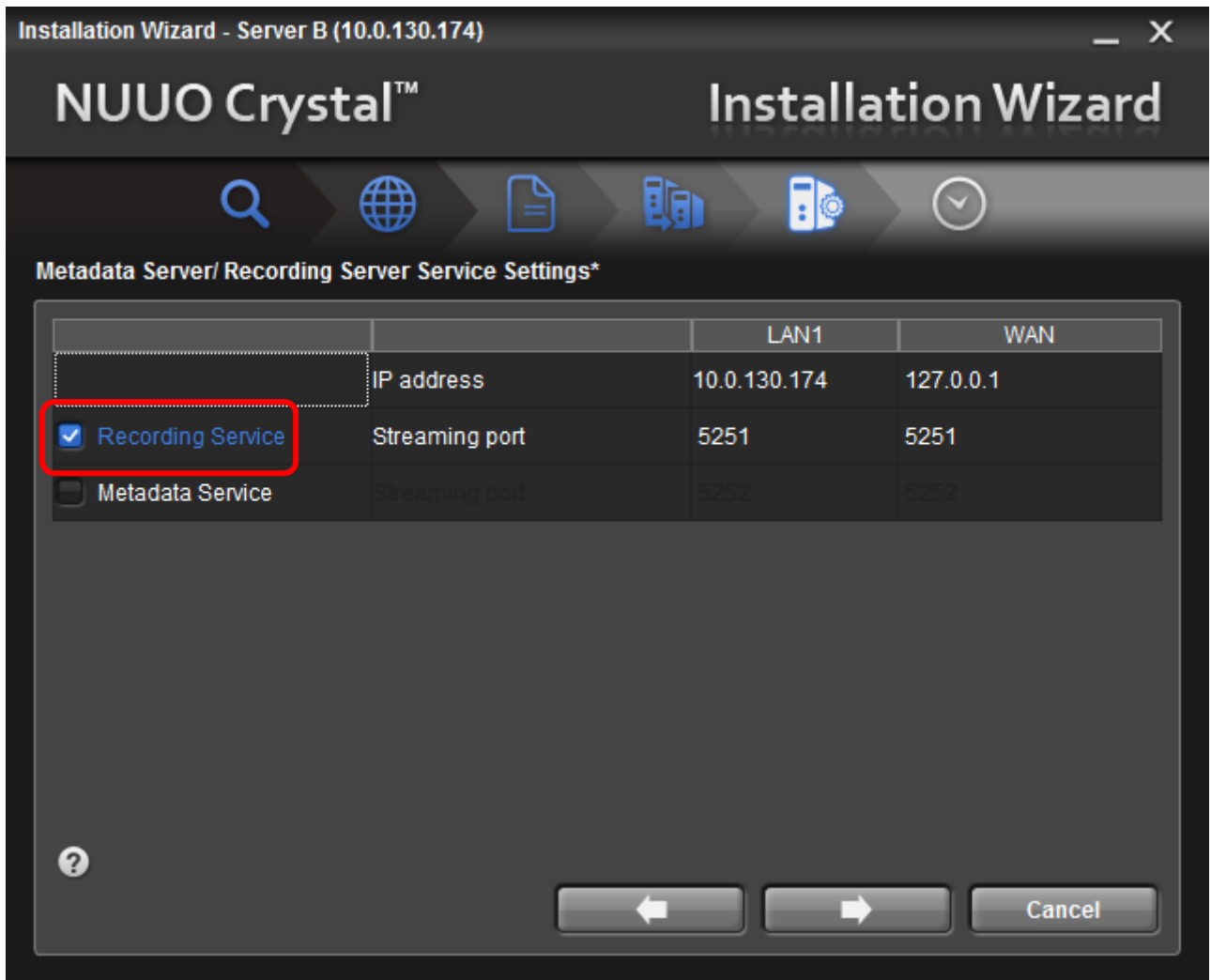


Figure 4.3.2: How to enable recording server in Install Wizard



## 4.4 Restore Configuration

Login Management Server via NuClient. Import configuration of **Server A** to **Server B**.

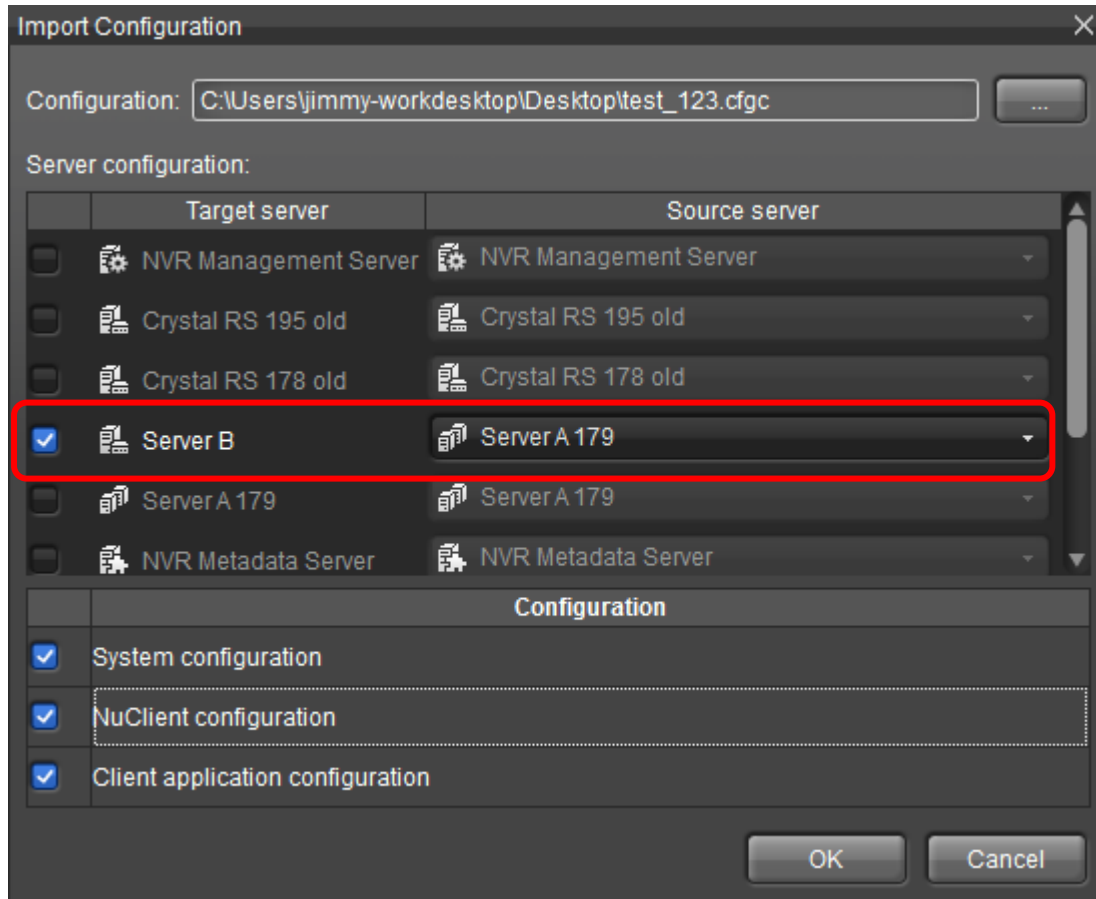


Figure 4.4.1: How to import configuration file to a failover server

## 4.5 Remove Out-of-order Failover Server

Remove **Server A** permanently via NuClient.

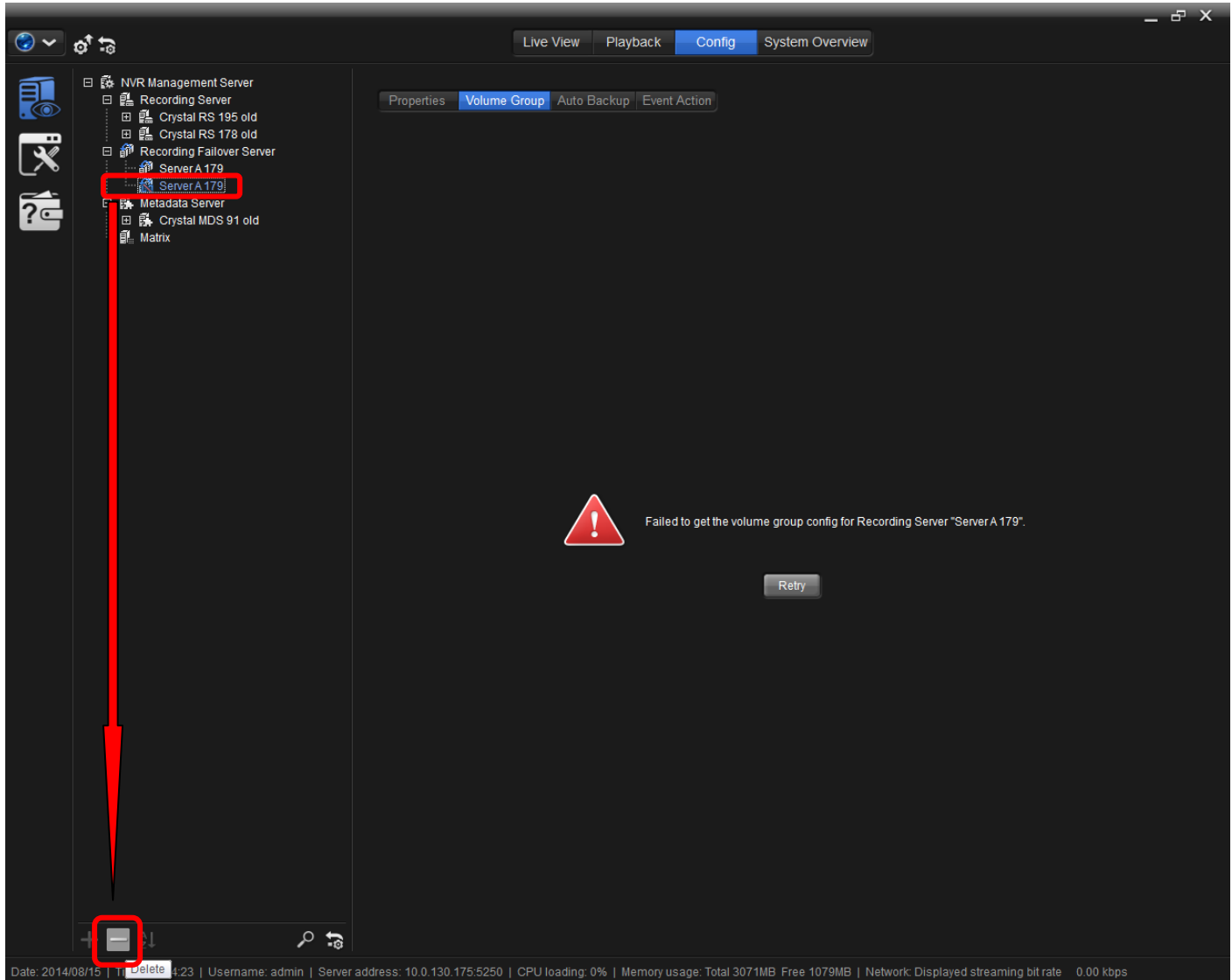


Figure 4.5.1: Removing a disconnected failover server

## 4.6 Verify Volume Group Setting

Verify volume group setting of **Server B** is identical to that of **Server A**. Manually adjust volume group setting of **Server B** when it is necessary. After volume group setting is verified, video failover is ready and standing by.

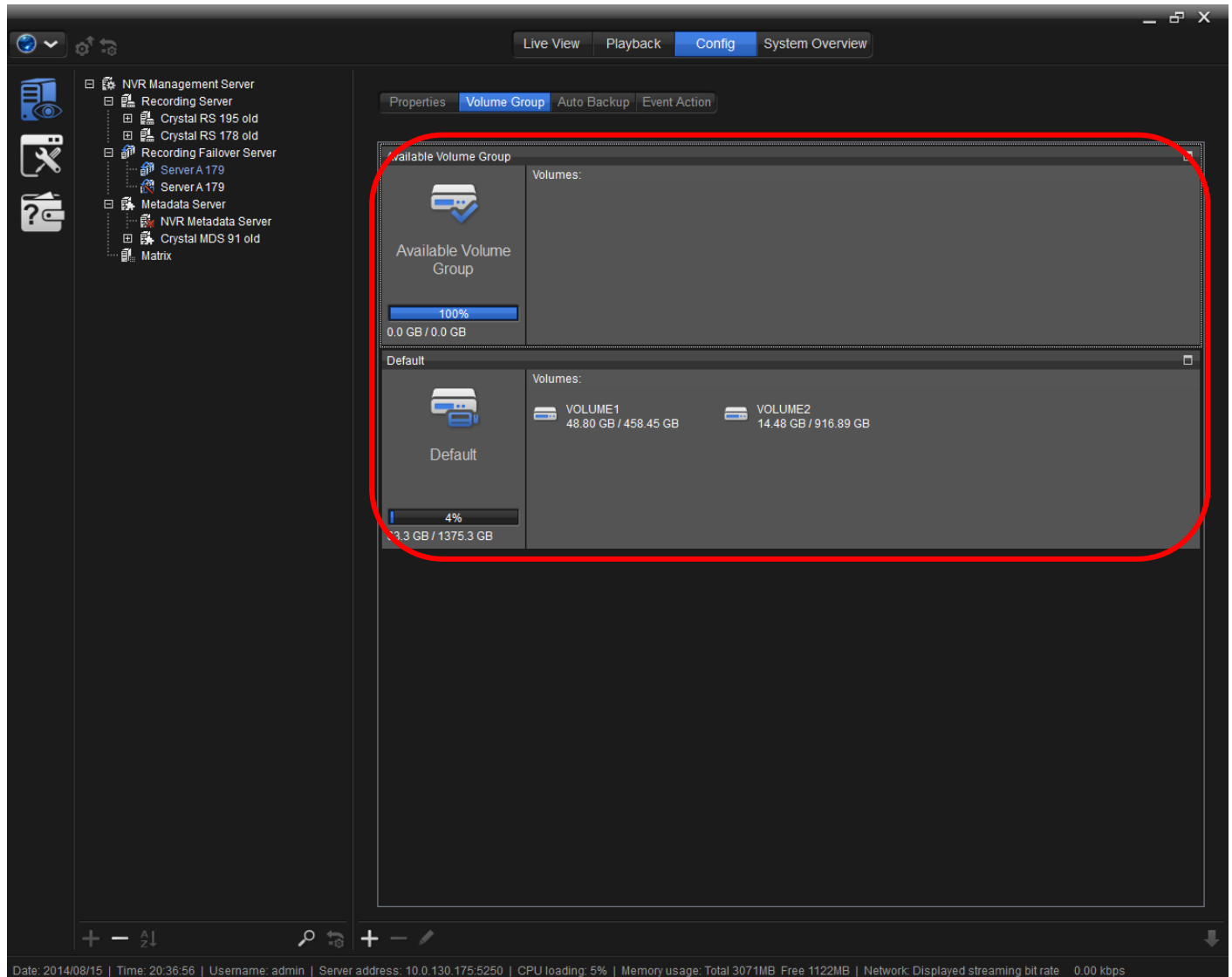


Figure 4.6.1: Verifying volume group settings

## 4.7 File Migration

Select from NuClient’s menu item “Migrate Failover Files”, and select configuration file of **Server A** exported in step 4.1. Choose **Server A** as source server and **Server B** as target server. Complete File Migration process without interception. Restart all NuClient when File Migration process is done.

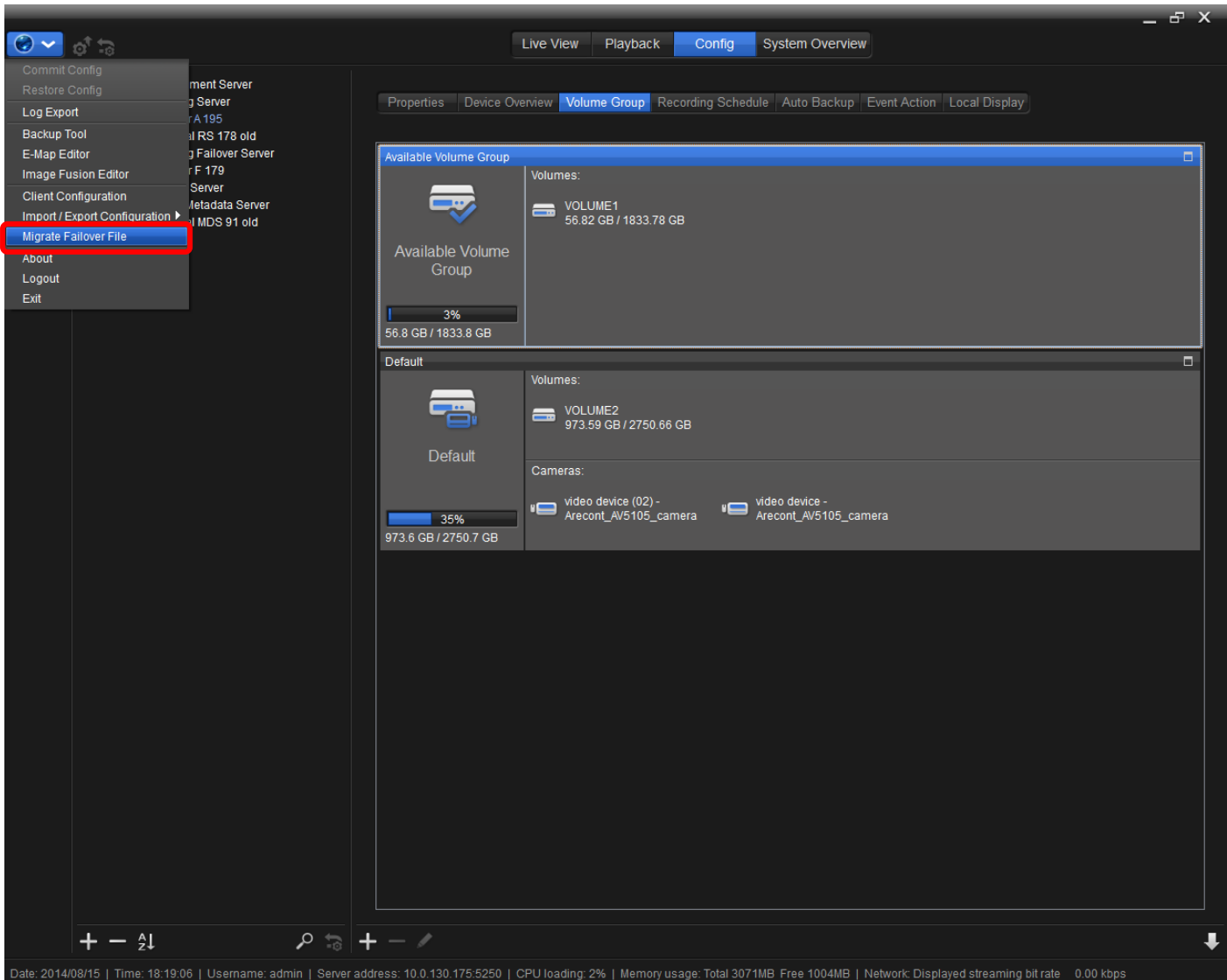


Figure 4.7.1: How to execute file migration

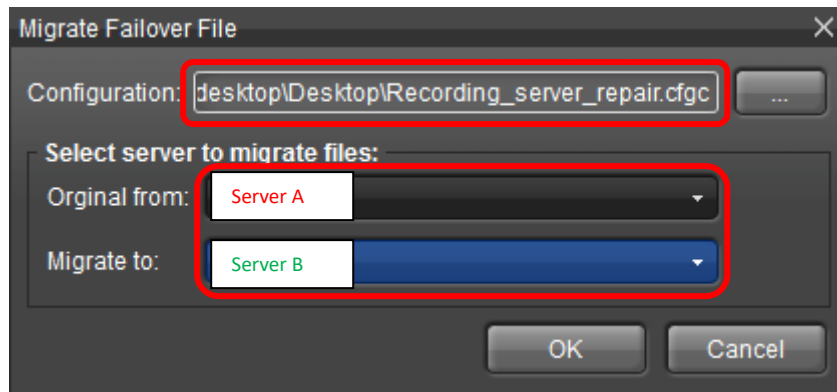


Figure 4.7.2: How to setup file migration

## 5 Replacing a Metadata Server

In the following procedure, an out-of-order metadata server is represented by **Server A**, and **Server B** is a new one to replace **Server A**.

### 5.1 Save Configuration

Login Management Server via NuClient and export configuration file of **Server A**.

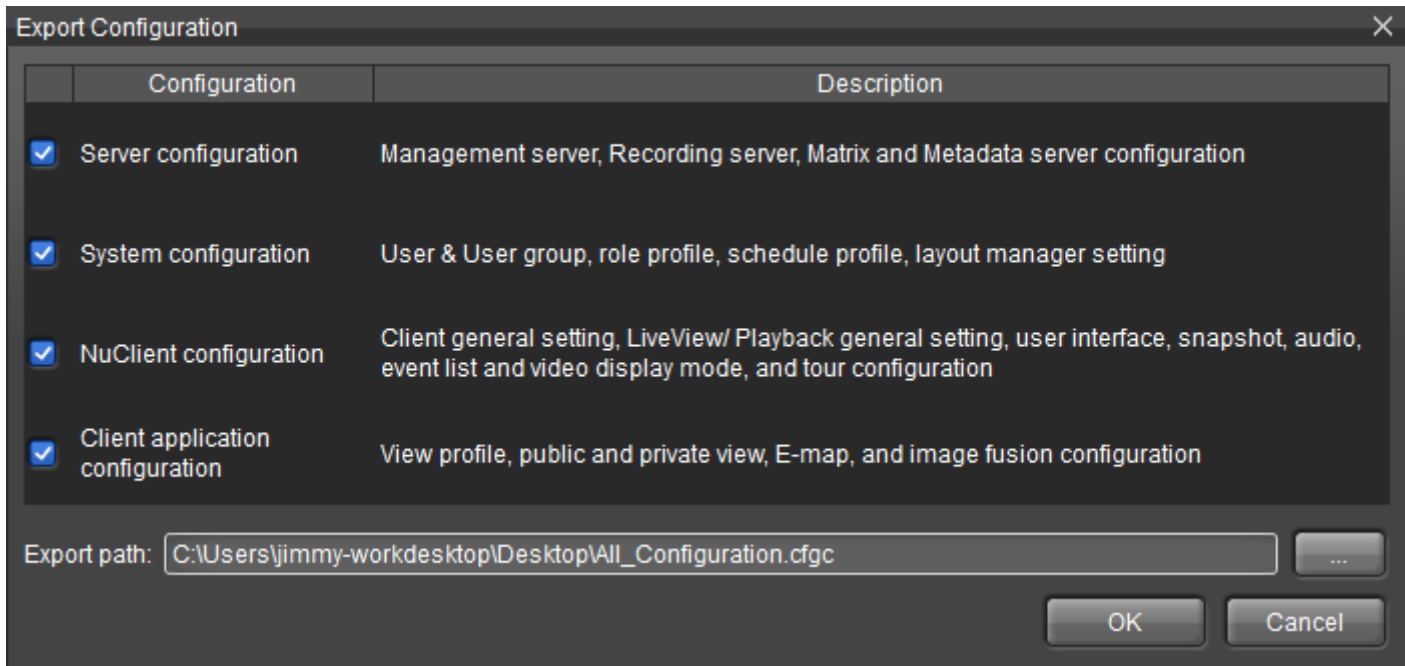


Figure 5.1.1: Exporting all configuration of metadata server

### 5.2 Move Volumes

Power off **Server A** and **Server B**. Move all volumes from **Server A** to **Server B**.

## 5.3 Enable Metadata Server Service

Enable Metadata Service via **Server B's** web page or Install Wizard. Login **Server B** to its Management Server.

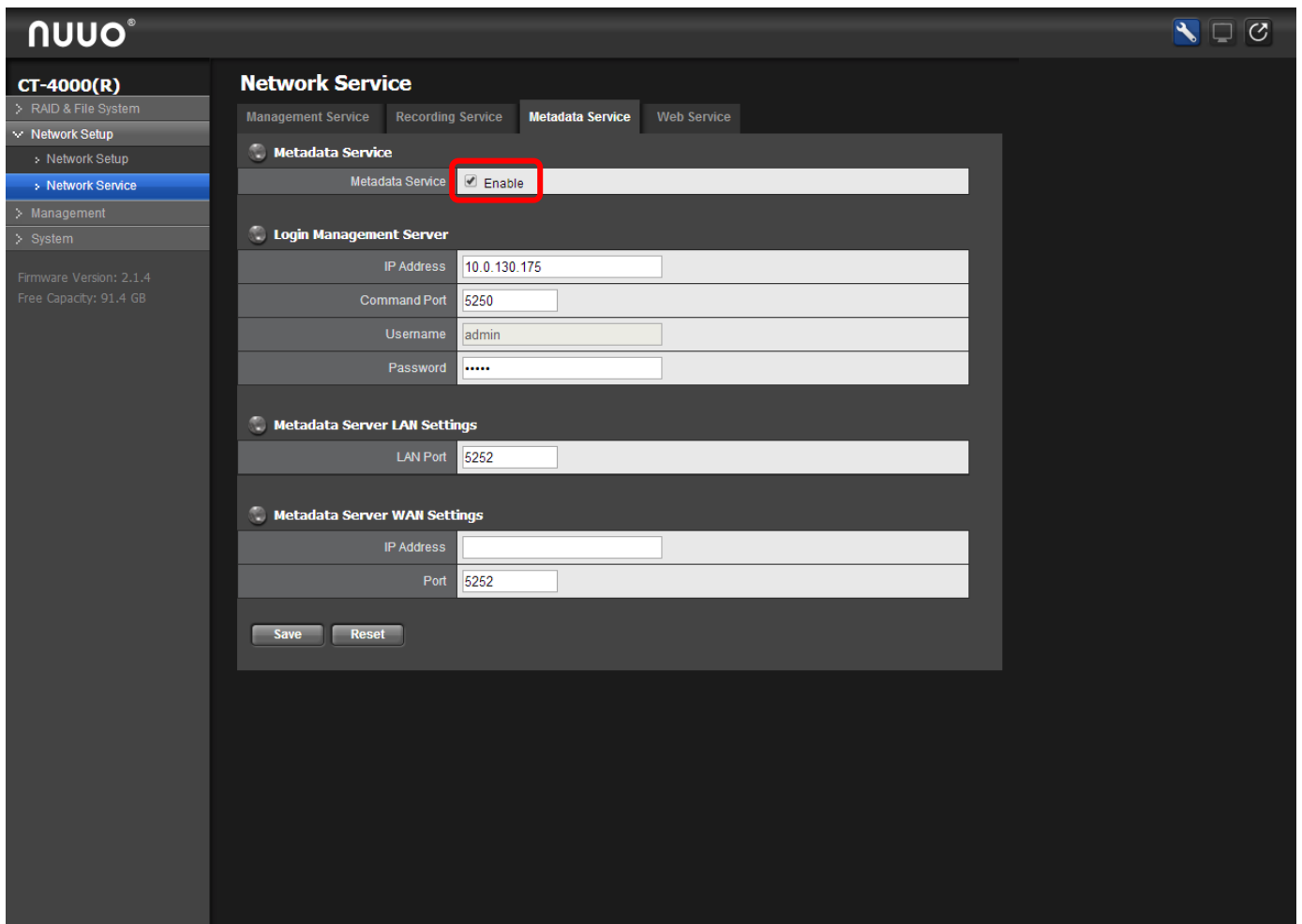


Figure 5.3.1: How to enable metadata service in web page

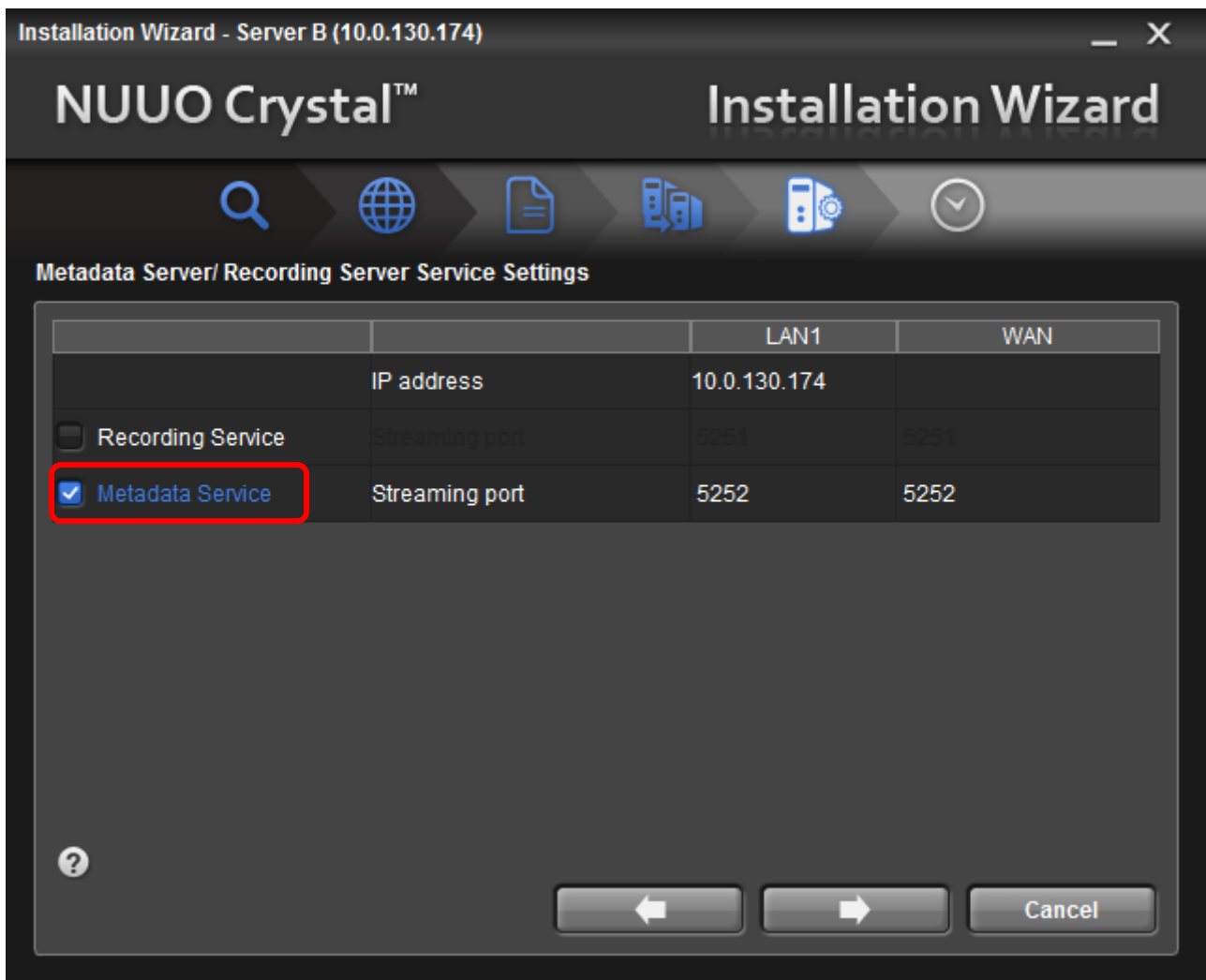


Figure 5.3.2: How to enable metadata server in Install Wizard



## 5.4 Remove Out-of-order Metadata Server

Remove **Server A** permanently via NuClient.

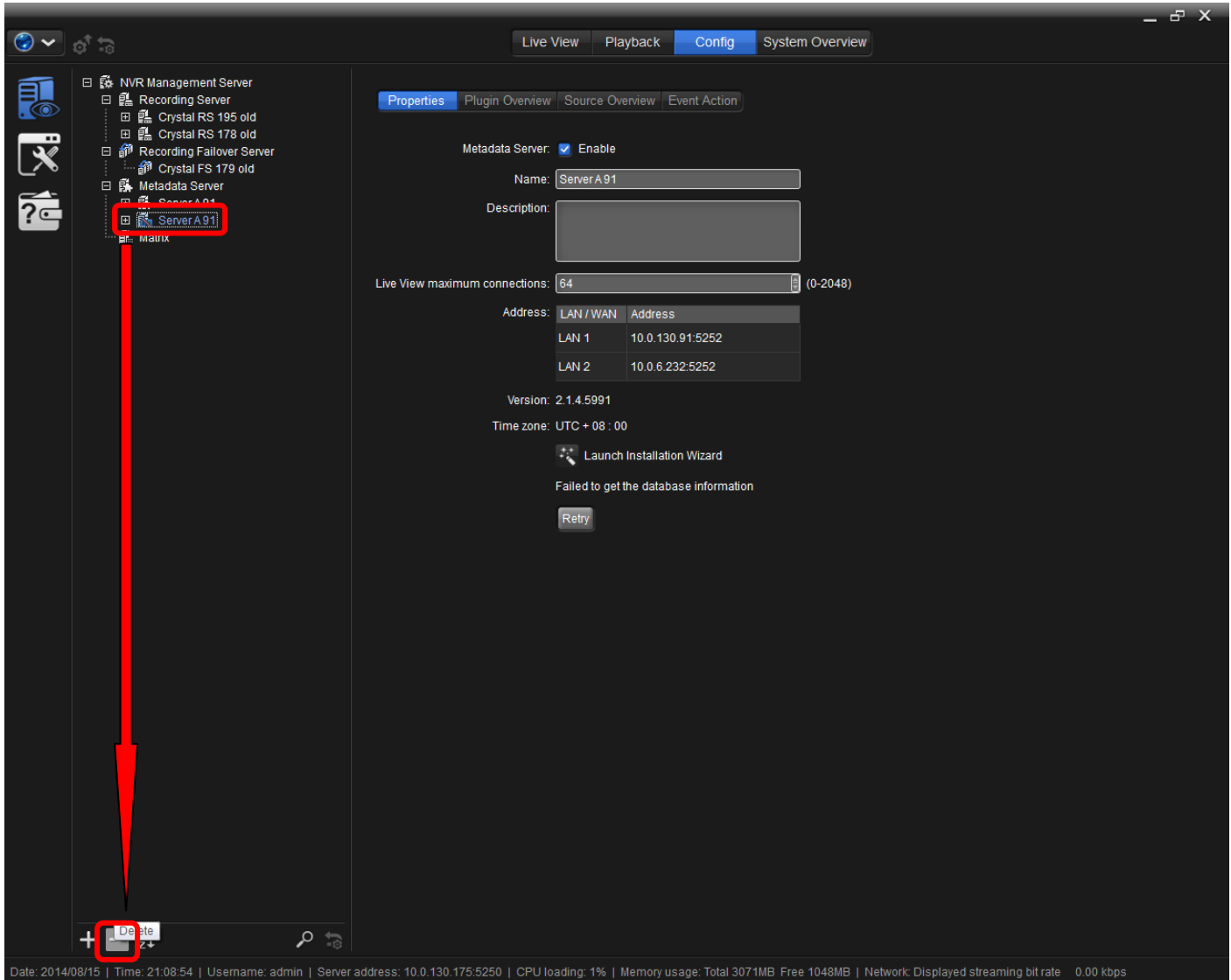


Figure 5.4.1: Removing a disconnected metadata server

## 5.5 Install Metadata Server Plug-ins

Login **Server B** to its Management Server. Install all needed metadata plug-ins.

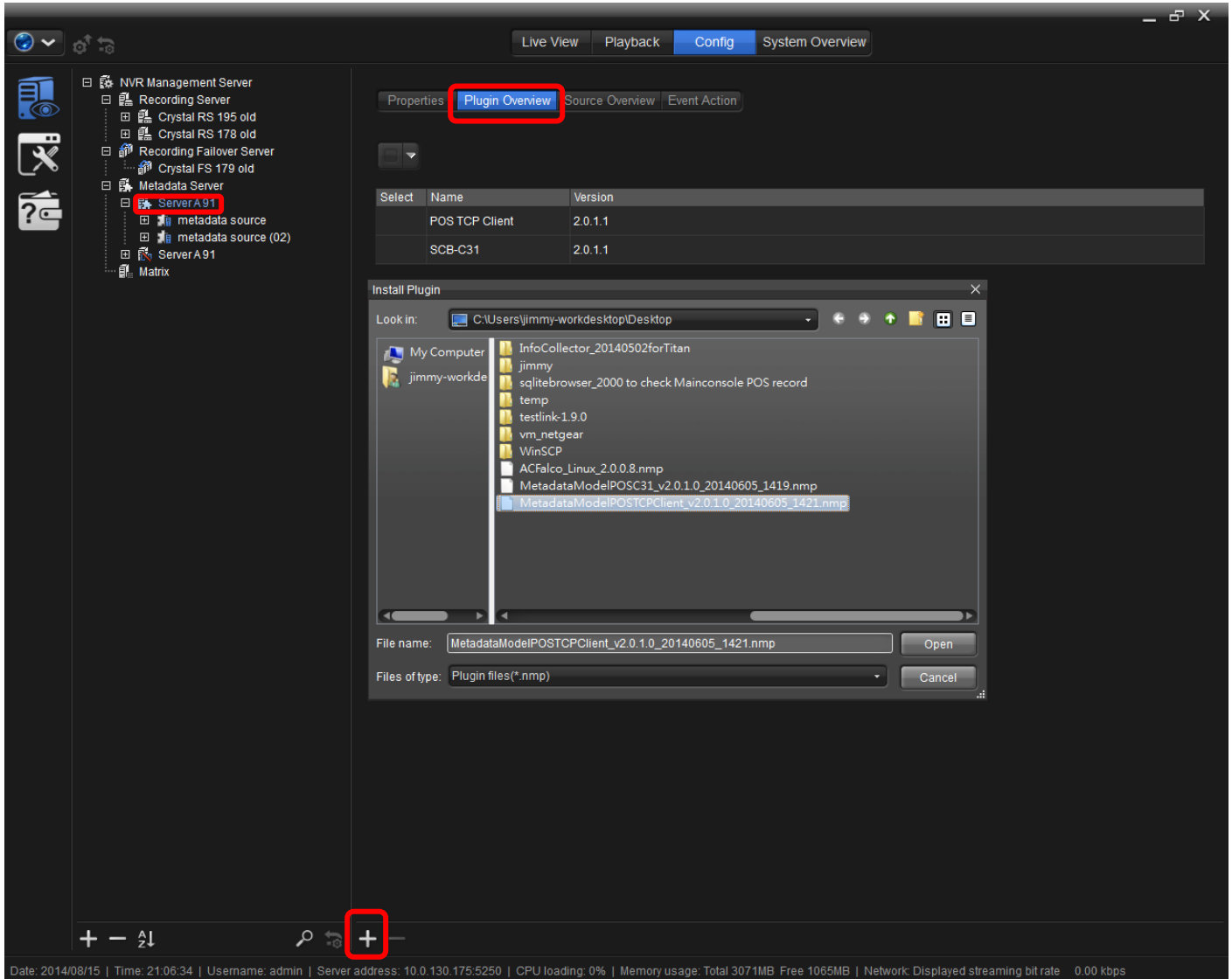


Figure 5.5.1: How to install metadata server plugins

## 5.6 Restore Configuration

Login Management Server via NuClient. Import configuration of **Server A** to **Server B**.

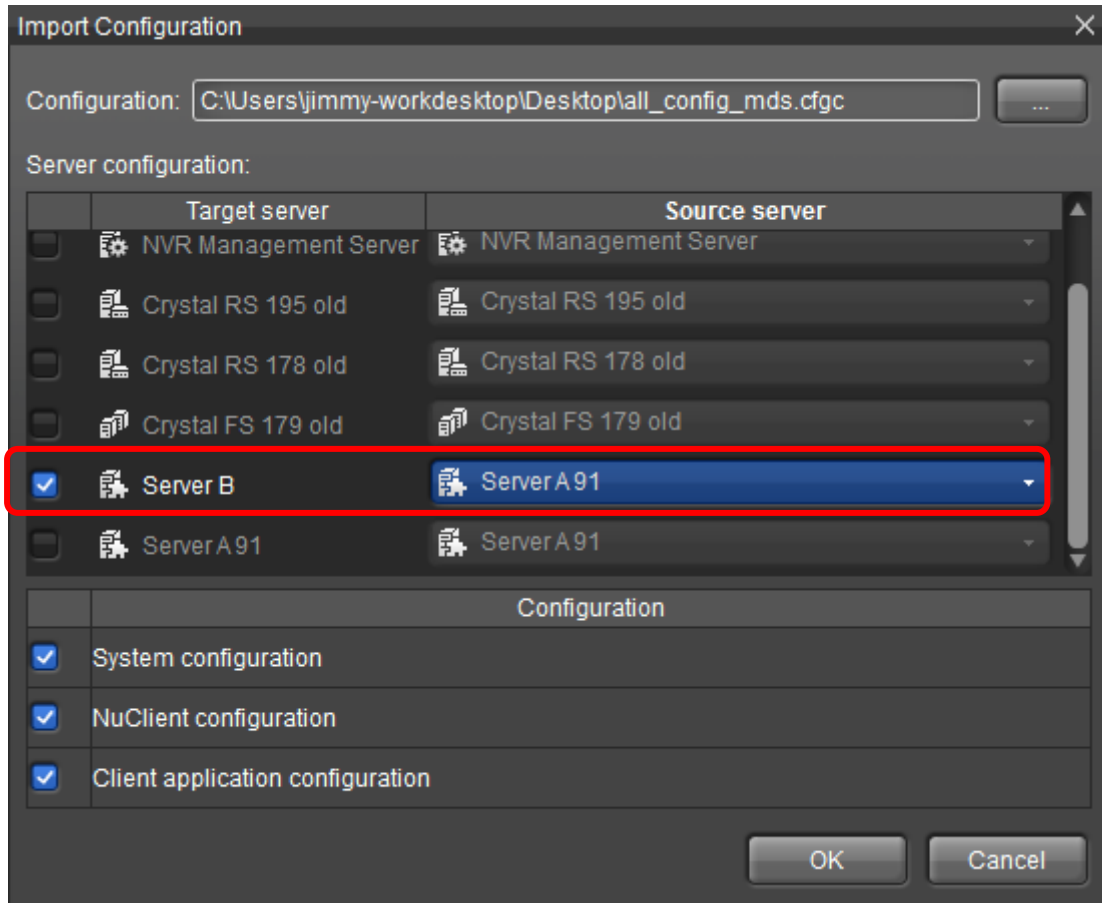


Figure 5.6.1: How to import configuration file to a metadata server

## 5.7 Setup Metadata Volume

Assign one available volume for metadata **Server B**

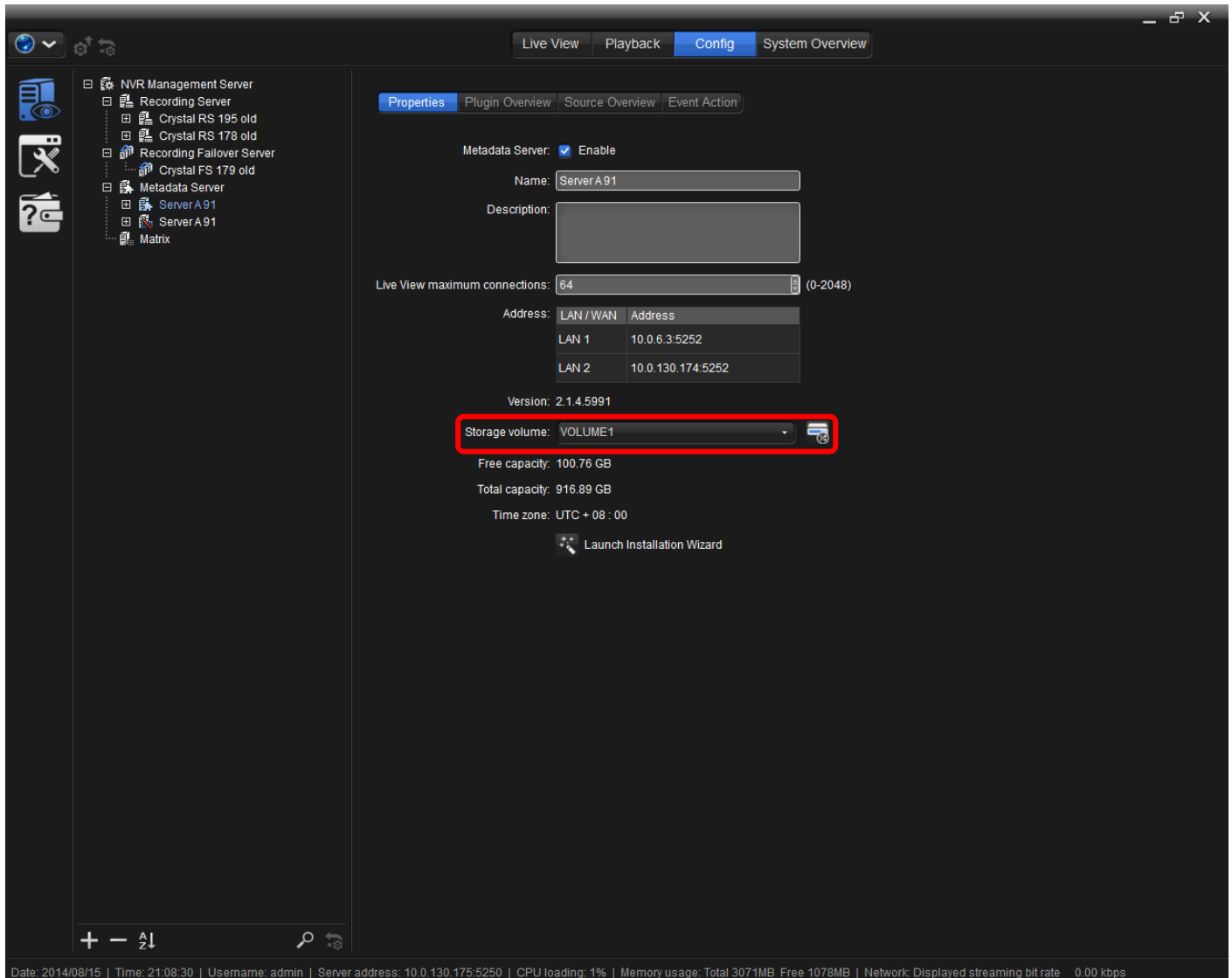


Figure 5.7.1: Assigning a volume for metadata server

## 6 Emergency: Enable Management Server on-site

When a Management **Server A** is out-of-order and a replacement cannot be available immediately, one **Server C** can be chosen from current existing servers.

### 6.1 Priority for Candidate

A server with least significance has highest priority. An idle Failover Server is the first candidate. Otherwise, choose one Metadata Server or one Recording Server with least significant channels. The chosen server is **Server C**.

### 6.2 Enable the Management Server

**Server C** is a replacement Management Server for **Server A**. Services previous running by **Server C** are no longer running. Services previous running by **Server A** are now running by **Server C**.

Please apply following steps:

1	Step 2.2	Prepare license of <b>Server A</b>
2		Shut down <b>Server C</b>
3		Remove all volumes of <b>Server C</b> . Keep these volumes in order. These volumes will be used in step 6.3
4		Power on <b>Server C</b>
5	Step 2.5	Enable Management Server Service of <b>Server C</b> . As recommended, the IP address of <b>Server C</b> is assigned with identical IP address of <b>Server A</b>
6		If there was a Recording Server running on <b>Server A</b> , enable Recording Server Service of <b>Server C</b> ; otherwise disable Recording Server Service of <b>Server C</b>
7		If there was a Failover Server running on <b>Server A</b> , enable Recording Server Service of <b>Server C</b> ; otherwise disable Recording Server Service of <b>Server C</b>
8		If there was a Metadata Server running on <b>Server A</b> , enable Metadata Server Service of <b>Server C</b> ; otherwise disable Metadata Server Service of <b>Server C</b>
9		Shut down <b>Server C</b>
10	Step 2.4	Move all volumes from <b>Server A</b> to <b>Server C</b>
11		Power on <b>Server C</b>
12	Step 2.6	Activate license on <b>Server C</b>
13	Step 2.7.(1)	Apply configuration of Management Server onto <b>Server C</b>
14		If there was a Recording Server running on <b>Server A</b> , apply all steps from step 3.4 to 3.7 on <b>Server C</b>
15		If there was a Failover Server running on <b>Server A</b> , apply all steps from step 4.4 to 4.6. <b>Server C</b>
16		If there was a Metadata Server running on <b>Server A</b> , apply all steps from 5.4 to 5.7 on <b>Server C</b>

## 6.3 Restart the stopped server

Once the replacement **Server B** is arrived, services of **Server C** can be restarted on **Server B**.

Please apply following steps:

1		Install all volumes of <b>Server C</b> onto <b>Server B</b>
2		Power on <b>Server B</b>
3		If there was a Recording Server running on <b>Server C</b> , apply all steps from step 3.3 to 3.7 on <b>Server B</b>
4		If there was a Failover Server running on <b>Server C</b> , apply all steps from step 4.3 to 4.6. <b>Server B</b>
5		If there was a Metadata Server running on <b>Server C</b> , apply all steps from 5.3 to 5.7 on <b>Server B</b>