DETEXI NVR Domain Controller

CORE COMPONENT FOR MULTI-SITE CONNECTIVITY

DETEXI NVR Domain Controller allows to control remotely NVR domain — a network of NVRs that are logically attached to the main NVR — NVR Domain Controller.

DETEXI NVR Domain Controller




DETEXI NVR Domain Model

The DETEXI Network Video Management system gives users the ability to monitor and record video and audio over an IP (Internet Protocol based) computer network. DETEXI security installation can scale from small business use to enterprise level security operations. To address scalability and reliability and taking a cue from existing computer network topologies, a NEW, exciting approach to digital video surveillance management and control has been developed — **NVR Domain Model**.

With a number of cameras sending information over a long period of time, the only way to deal adequately with the shear volume of files is to share the load over a distributed NVR network (domain) consisting of several NVRs that are logically attached to the main NVR — **DETEXI NVR Domain Controller** that allows to control several NVRs remotely considering them as one powerful NVR.

NVR Domain Controller learns everything about the NVR's in the NVR network and their group of cameras, whereas each particular NVR is responsible for its group of cameras and carries the task of recording, touring and alarming functions. Without this, managing larger numbers of NVRs would be cumbersome.
Whether you have several sites or a single site with hundreds of cameras, you can now plan a security management strategy. You can create a set of NVRs by dividing cameras by groups, and assigning each group to a corresponding NVR.

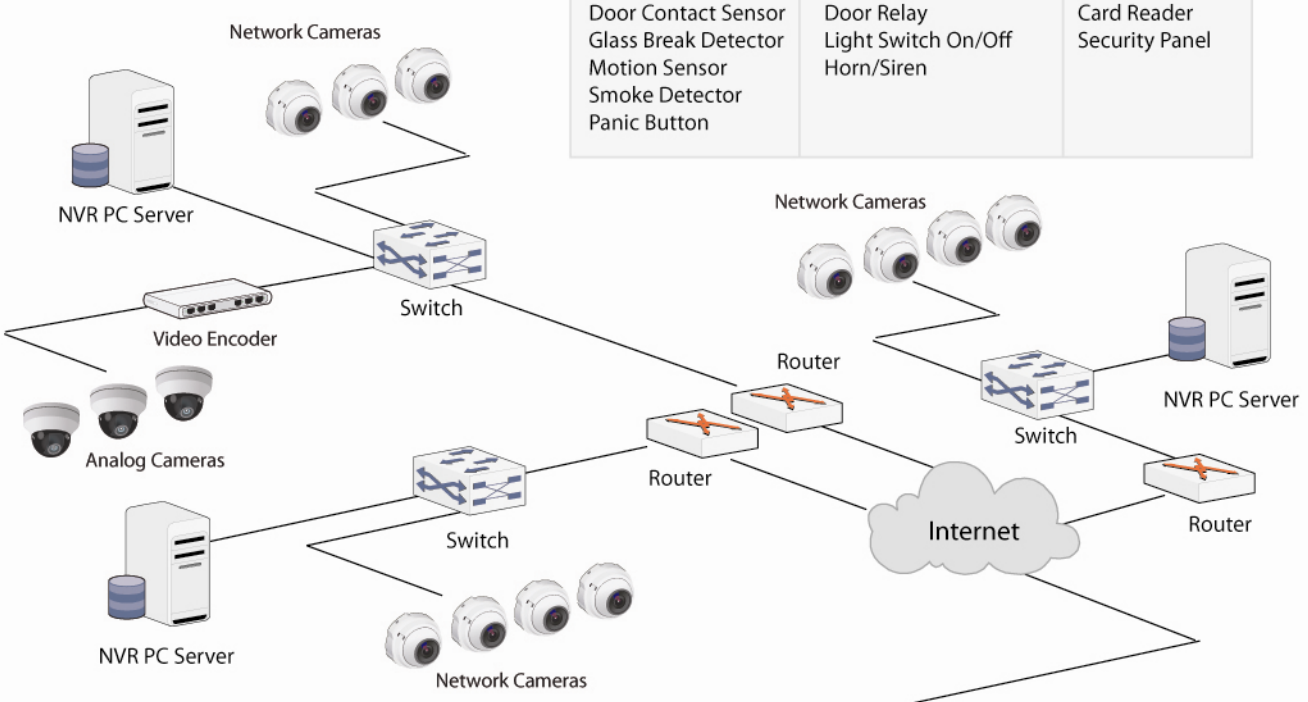
DETEXI NVR Domain Controller is the core component for multi-site connectivity. It is indispensable solution for complex distributed environments and monitoring centers.

Network of NVRs Supervised by the NVR Domain Controller

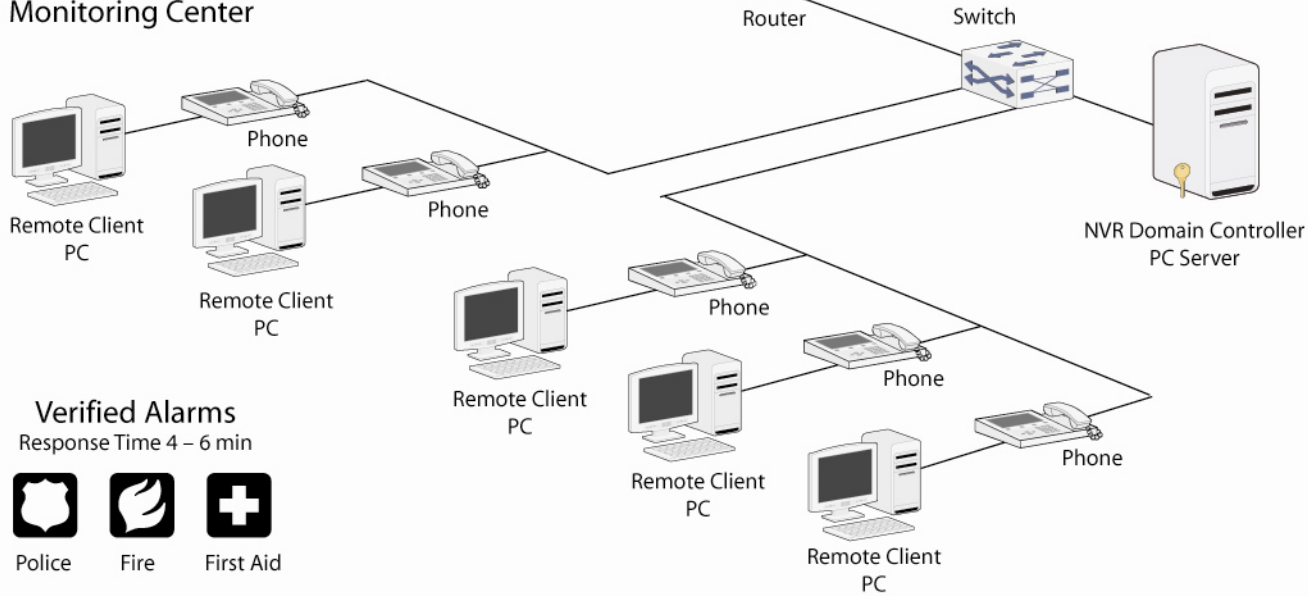
Sites under IP Surveillance

External devices that can be connected

Sensors on Camera Inputs	Devices on Camera Outputs	NVR I/O Devices
Door Contact Sensor Glass Break Detector Motion Sensor Smoke Detector Panic Button	Door Relay Light Switch On/Off Horn/Siren	Card Reader Security Panel



Monitoring Center



Verified Alarms
Response Time 4 – 6 min

Police Fire First Aid

DETEXI NVR domain model is indispensable solution for complex distributed environments and monitoring centers.

What is DETEXI NVR Domain Controller?

If you security installation has two or more DETEXI NVRs in different locations or a single site with hundreds of cameras, you should explore upgrading with the DETEXI NVR Domain Controller module in order to organize the NVR domain consisting of the main NVR — Domain Controller and several child NVRs. This will allow you to get advantage of centralized user access control and camera management.

The **central administration point** of the distributed network or domain of DETEXI NVRs is the DETEXI NVR Domain Controller software. Any DETEXI NVR that holds the NVR Domain Controller license could become the NVR Domain Controller. The NVR Domain Controller connects to any child NVR if they are connected to the Internet or the same LAN and the passwords are known and ensures that all communication with the recorders is authenticated, and that the user has the specified rights to access particular NVR resources.

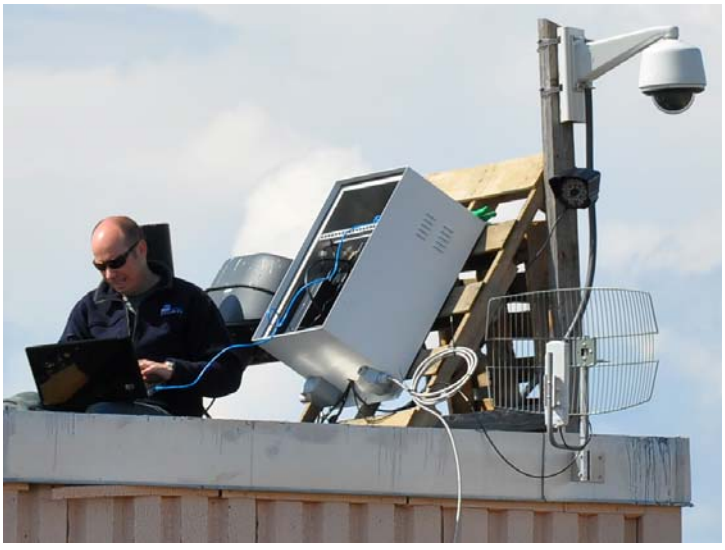
Video is Recorded on the Child NVRs

Each particular NVR from the domain (child NVR) is responsible for recording video from its own set of cameras configured in the NVR Cameras List.

Centralized User Access Control and Camera Management

The NVR Domain Controller maintains a single Users List with security information for all domain users and authenticates all Remote DETEXI Clients' access.
The NVR Domain Controller allows users to administer and control all cameras in the domain from a single Domain Controller interface considering all child NVRs as one powerful NVR. Without this, managing larger numbers of NVRs would be cumbersome.

- The NVR Domain Controller and child NVRs in the domain must be connected to the Internet or the same LAN.
- Domain Controller usually doesn't have its own cameras (though it is not forbidden) but provides centralized user provisioning and management.
- When an employee (administrator or operator) leaves, deleting their account does not change any other accounts, or the profile to which the account was assigned. Having this type of control prevents unauthorized access to NVRs.



Setup DETEXI NVR Domain

How to Setup NVR Domain?

Weather you want to centralize user access control and camera management for existing IP surveillance system, or configure a new security installation consisting of several NVRs that are logically attached to the NVR Domain Controller, there are several steps to follow.

1. Setup Exclusive Master Users

Before a secure connection between the NVRs and the NVR Domain Controller could be established at least one user in every NVR and in the Domain Controller **must** be set as an **Exclusive Master User** that will manage exclusive connection rights in the domain.

- The NVR administrator **must** provide the NVR exclusive master user login name and password to the NVR Domain Controller administrator.
- The NVR Domain Controller administrator in turn **must** provide the Domain Controller exclusive master user login name and password to every child NVR administrator.

2. Register NVR on the Domain Controller

To register NVR on the Domain Controller as a member of domain network *(child NVR)* the NVR exclusive master user should send a request to get connected to the NVR Domain Controller.

- The authorization of request will be required — credentials supplied by the NVR Domain Controller administrator should be provided.

3. Domain Controller Accepts (Rejects) the Registration Request

Subsequently the NVR Domain Controller administrator — exclusive master user — can **accept** or **reject** the registration request from the NVR; or **delay the decision** and keep the NVR and Domain Controller logical connection in a NEW mode when the Domain Controller can "see" the NVR components and settings but can not remotely update any of them.

If the registration request is **accepted** — the NVR Domain Controller will **import and keep up-to-date** information about the remote (child) NVR cameras' settings. Updating the NVR settings from the Domain Controller will be allowed. The NVR and the NVR Domain Controller will stay logically connected until the NVR or Domain Controller administrator requests to **unregister**.

If the NVR registration request is **rejected** — a logical connection between the NVR and Domain Controller won't be established.

- The registration request in a NEW mode may be accepted or rejected at any time.
- On the Domain Controller side the authorization also will be required — credentials supplied by the NVR administrator should be provided.

Exclusive Master User

The NVR Domain Controller and child NVRs must be connected to the Internet or the same LAN. To establish logical connection between child NVRs and the NVR Domain Controller at least one user in every child NVR and in the Domain Controller **must** be set as Exclusive Master User.

1. Setup Exclusive Master User

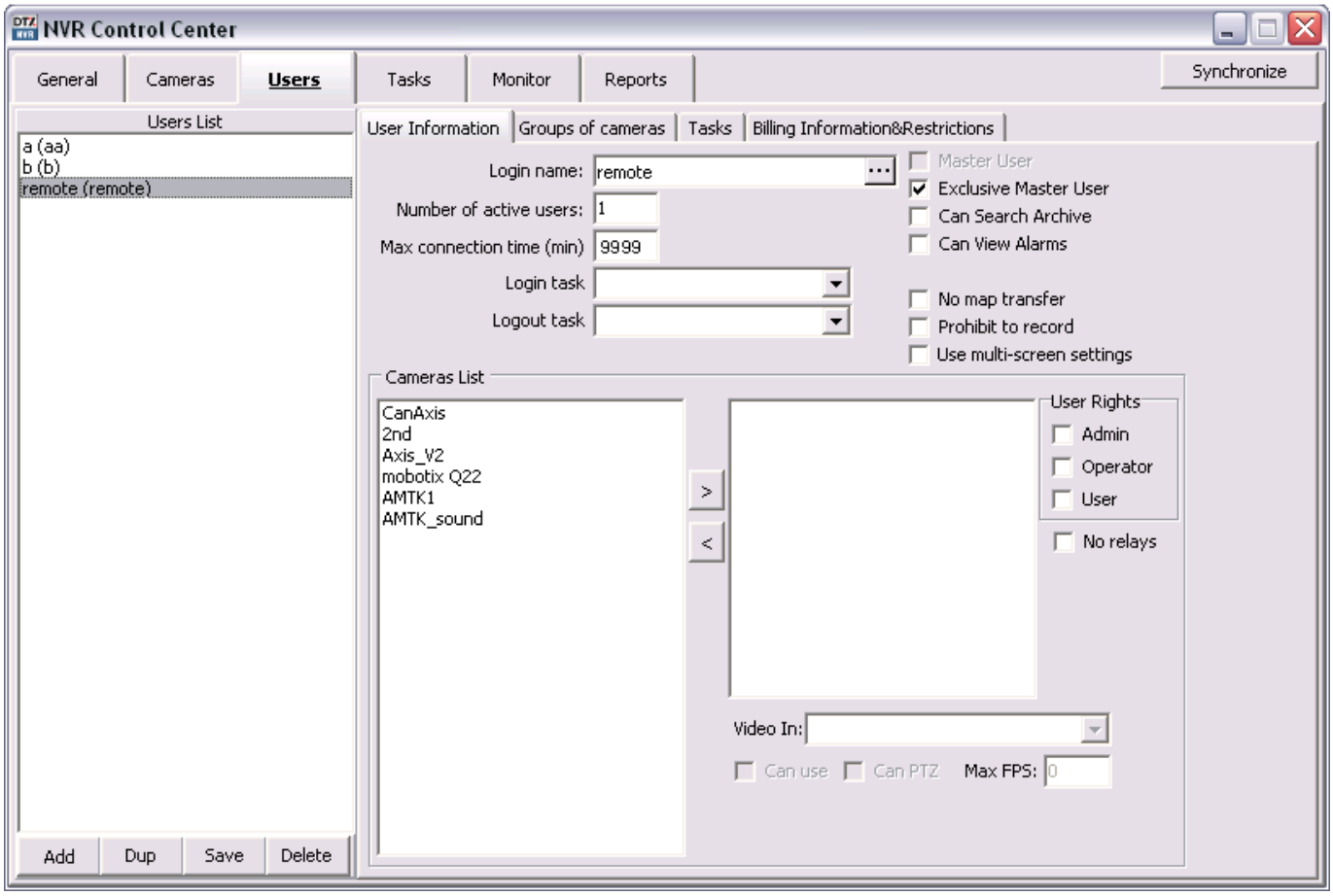


Fig 1. NVR Control Center — Users — User Information
(Setup Exclusive Master User.)

As far as the purpose of creating the Exclusive Master Users is establishing the connections in the domain — just a few parameters should be setup.

1. In the **NVR Control Center — Users** click **Add** button below the **Users List** to create a new user (Fig 1).
2. In the **User Information** click the button next to the login name field to enter **Login Name**, **Full Name** and **Password**.
3. Enter the **Number of Active Users equal 1**.
4. Enter **Max connection time equal 9999** *(no time limit)*.
5. **Check Exclusive Master User** checkbox to give the user exclusive connection rights in the domain.

- ✓ A child NVR administrator must provide the NVR exclusive master user login name and password to the NVR Domain Controller administrator.
- ✓ The NVR Domain Controller administrator in turn must provide the Domain Controller exclusive master user login name and password to every child NVR administrator in the domain.
- ✓ The NVR Domain Controller has the same graphical user interface named NVR Control Center as the NVRs just with expanded functionality.

2. Setup Login Name & Password

1. In the **NVR Control Center — Users — User Information** click the button next to the login name field (Fig 2).
2. Enter a single word, case-sensitive, alphanumeric **Login name** to use to login to the NVR and any descriptive **Full Name**.
3. Enter a single word, case-sensitive, alphanumeric **User Password** and re-type it to **Confirm Password** to be sure it is typed as desired.
4. Click **OK** button.

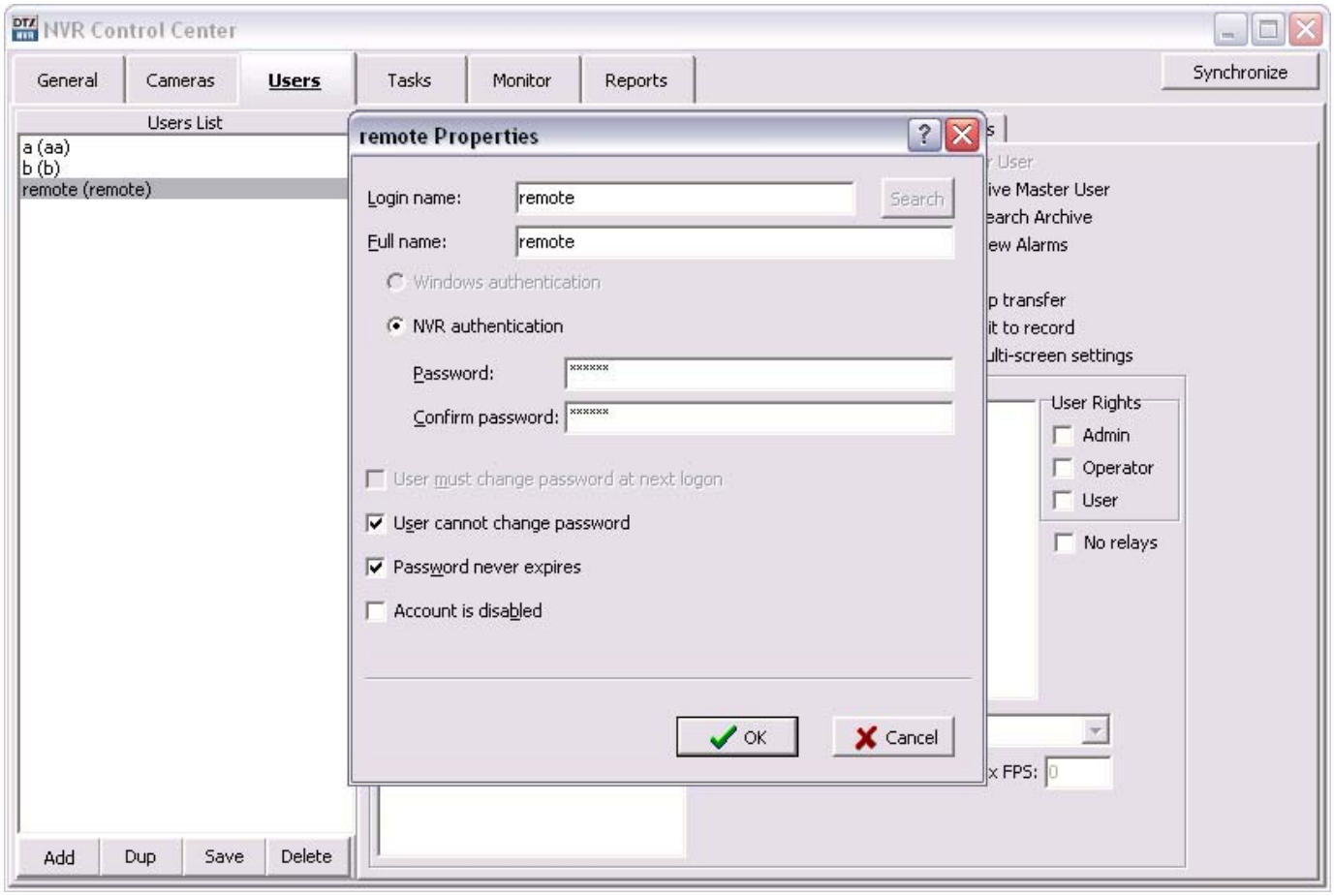


Fig 2. NVR Control Center — Users — User Information
(Setup Exclusive Master User — Setup Login Name & Password.)

Register NVR on the Domain Controller

To register NVR on the Domain Controller as a member of domain network the NVR Exclusive Master User should send **request** to get connected to the NVR Domain Controller. The authorization of request will be required — credentials supplied by the NVR Domain Controller administrator should be provided.

1. Define NVR Domain Controller Address

1. In the **NVR Control Center** go to the **General — Global Settings** (Fig 3).
2. Under the **NVR Controller Settings for HOST** at the bottom enter the **NVR Domain Controller IP address** or **IP name in the Address and Port number** — more fields/buttons appears.
   - ✓ Recommended port numbers — **60000** or **60001**

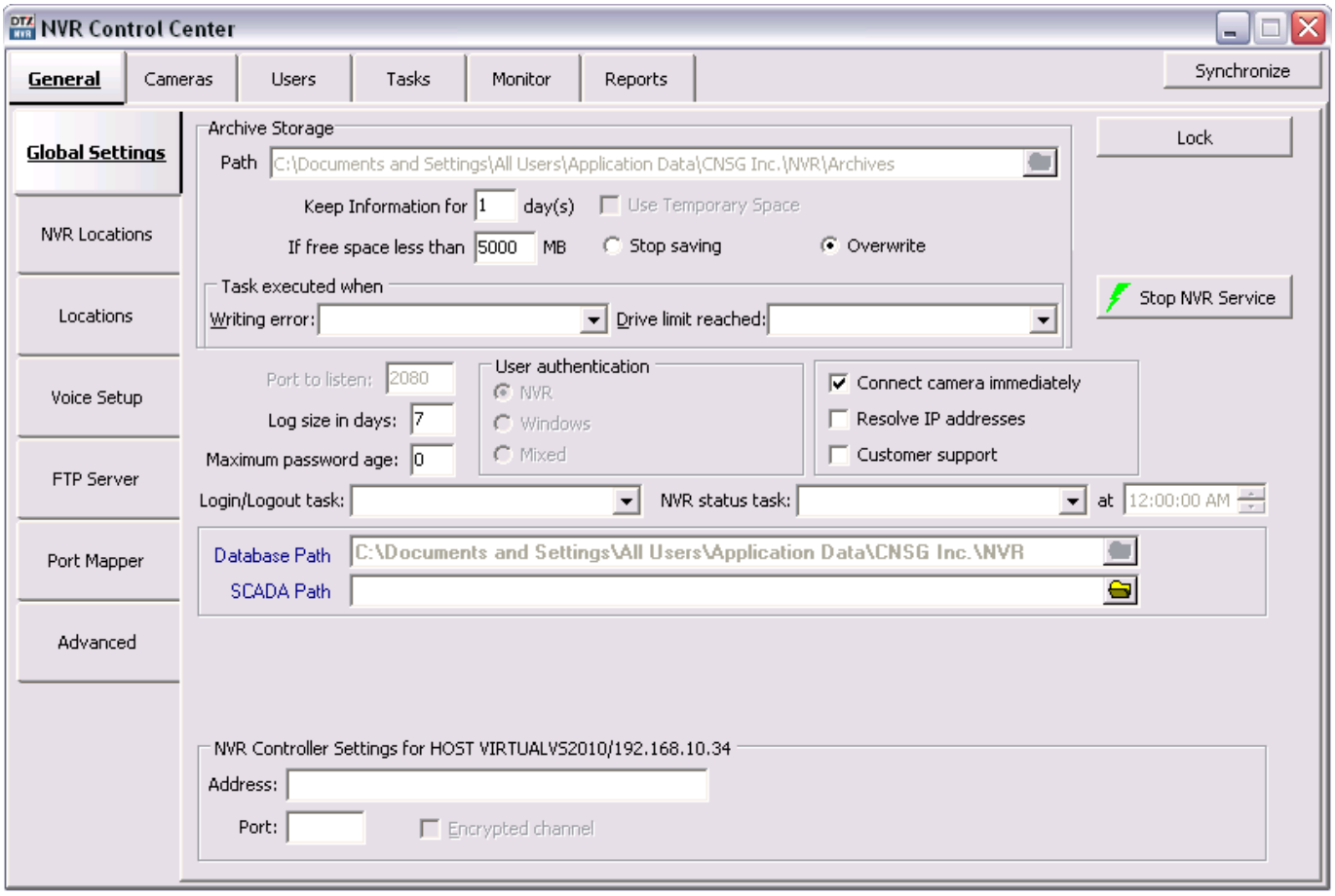


Fig 3. NVR Control Center — General — Global Settings
(Define NVR Domain Controller Address.)

2. Define Location Name, Register

1. Enter the NVR name in to **This Location Name** (Fig 4).
2. Click **Register site on Domain Controller** toggle button.
3. Provide **credentials** supplied by the NVR Domain Controller administrator to send the registration request.

One of the following messages will appear —

- ✓ **Registration not complete** — registration request is waiting to be accepted by the Domain Controller;
- ✓ **Registration rejected** — registration request is rejected by the Domain Controller;
- ✓ **Registered** — registration request is successfully completed.

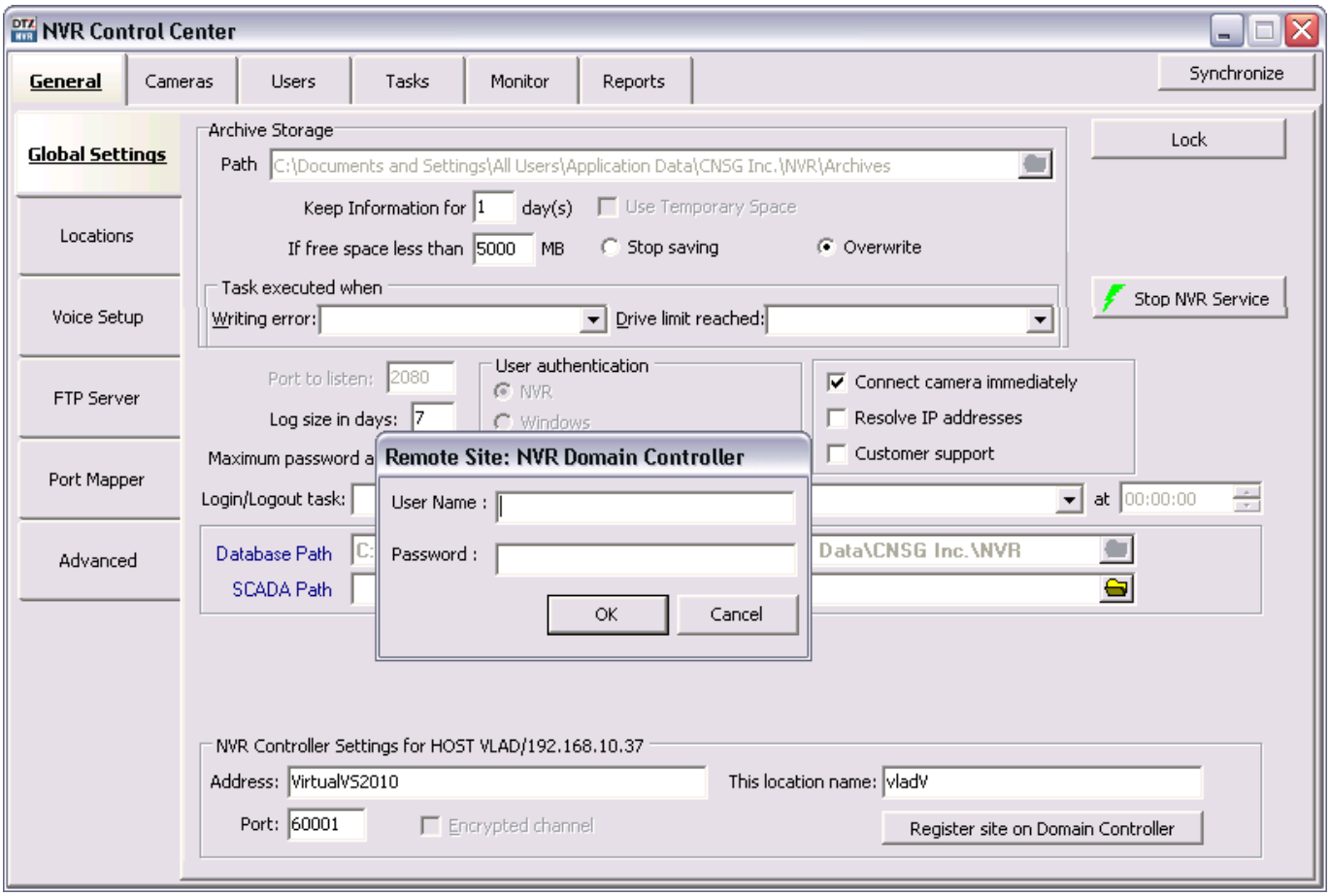


Fig 4. NVR Control Center — General — Global Settings
(Define NVR Domain Controller Address — Provide Credentials.)

Accept / Reject Registration on the Domain Controller

When a registration request from the NVR is received, the NVR Domain Controller administrator (exclusive master user) can **accept** or **reject** the request or **delay** a decision and keep the NVR and Domain Controller logical connection in a NEW mode when the Domain Controller can "see" the NVR components and settings but can not remotely update any of them.
An appropriate message will appear on the **NVR-requester** and the Domain Controller:

1. **Registered** — the NVR registration request is accepted — the NVR Domain Controller will import and keep up-to-date information about the remote (child) NVR cameras settings. Updating the NVR settings from the Domain Controller will be allowed.
   - ✓ The NVR and Domain Controller will stay logically connected until the NVR or Domain Controller administrator requests to unregister.
2. **Registration Rejected** — the NVR registration request is rejected — a logical connection between the NVR and Domain Controller won't be established.

3. **Registration not Complete** — the NVR registration request is not accepted or rejected — the NVR and Domain Controller logical connection stays in a NEW mode when the Domain Controller can "see" the NVR components and settings but can not remotely update any of them.

   ✓ The registration request in a NEW mode may be accepted or rejected at any time.

1. Accept Registration Request

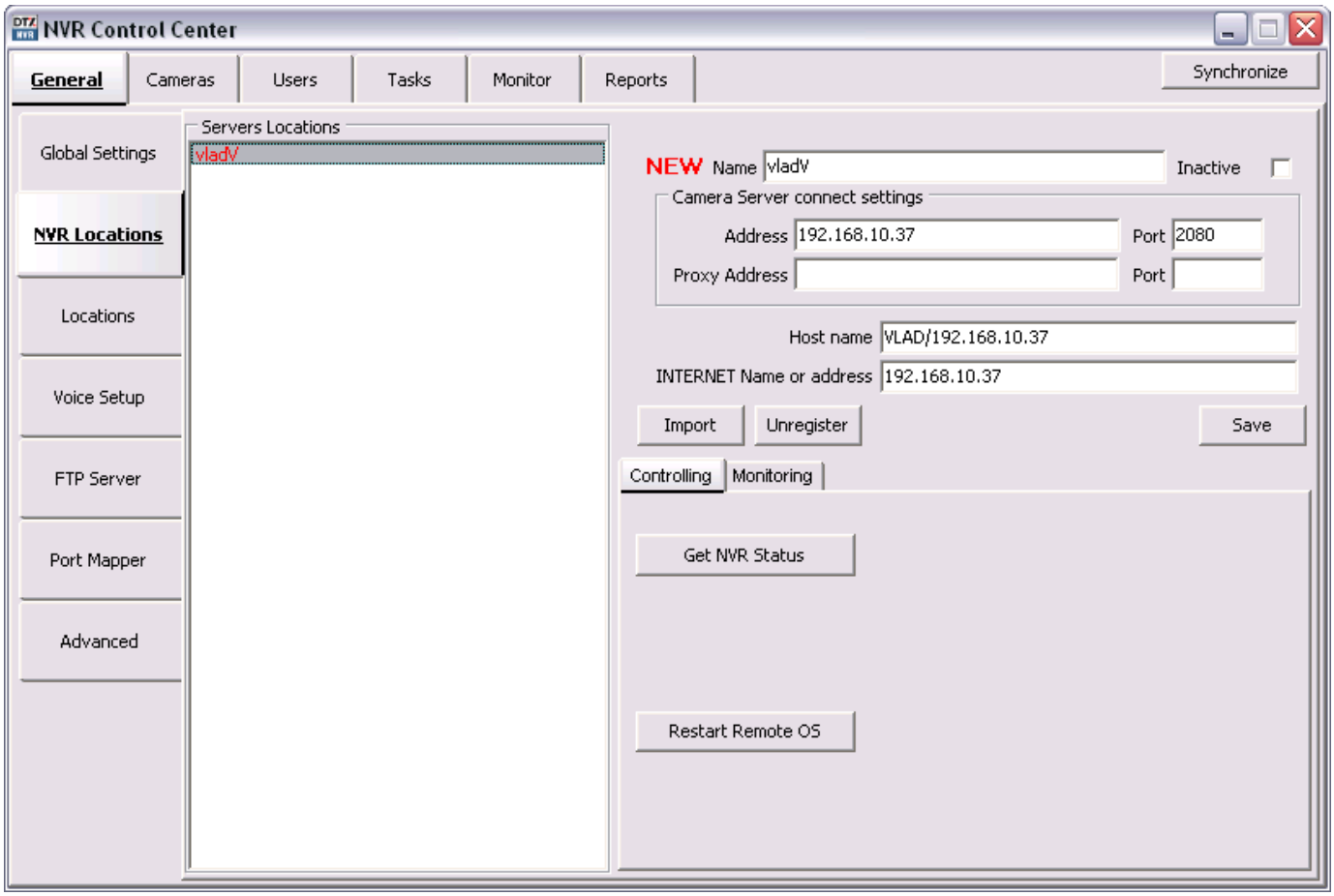


Fig 5. Domain Controller NVR Control Center — General — NVR Locations
(Accept Registration Requeat.)

1. In the Domain Controller **NVR Control Center** go to **General — NVR Locations** (Fig 5).
2. A NEW location appears in the **Servers Locations** list defining the NVR-requester settings —

   ✓ **Name** — the NVR location name;

   ✓ **Camera Server Connect Settings** — the NVR IP Address and Port number, Proxy Address and Port number if proxy server is used to connect to the Internet — will be used by the DETEXI Client connected to the Domain Controller to get the child NVR address when searching the NVR archive.

   ✓ **Host Name** — the NVR name/address;

   ✓ **INTERNET Name or Address** — the NVR name/address *(must be the same as in the Camera Server Connect Settings)*.

3. Click **Import** button to import the NVR-requester cameras settings. Provide credentials and wait until the data import is complete.

   ✓ The NVR becomes registered on the successful completion of the data import process — proper messages appear on both sides.

- ✓ Connection settings can be changed. Click **Save** button to save changes.
- ✓ The authorization will be required — credentials supplied by the NVR administrator should be provided.
- ✓ The NVR Domain Controller has the same graphical user interface named **NVR Control Center** as the NVRs just with expanded functionality.

2. Reject Registration Request

1. In the Domain Controller **NVR Control Center** go to **General — NVR Locations** (Fig 5).
2. A NEW location appears in the **Servers Locations** list defining the NVR-requester settings —
3. Click **Unregister** button. Provide credentials. The NEW NVR location will be deleted from the Servers Locations list.
   - ✓ The NVR becomes unregistered — proper messages appear on both sides.

Ports Required to Be Open

What ports are required to be open for the DETEXI NVR operation?
For the full DETEXI NVR functionality administrator should open the necessary ports. NVR by default uses the following TCP ports —

20, 21, 23
2080
60000, 60001
65235

- ✓ If **PortMapper** service is used, all TCP ports being used by the service, should be open.

Unregister Child NVR

Registered NVR and the NVR Domain Controller will stay logically connected until a request to unregister is received. Request to unregister child NVR to exclude it from the domain network can be initiated on the NVR or on the NVR Domain Controller side.

1. Unregister on NVR

To unregister on the child NVR side (Fig 6):

1. In the **NVR Control Center — General — Global Settings** under the **NVR Controller Settings for HOST** click **Unregister site on Domain Controller** toggle button.
2. Provide credentials supplied by the NVR Domain Controller administrator to send the request.

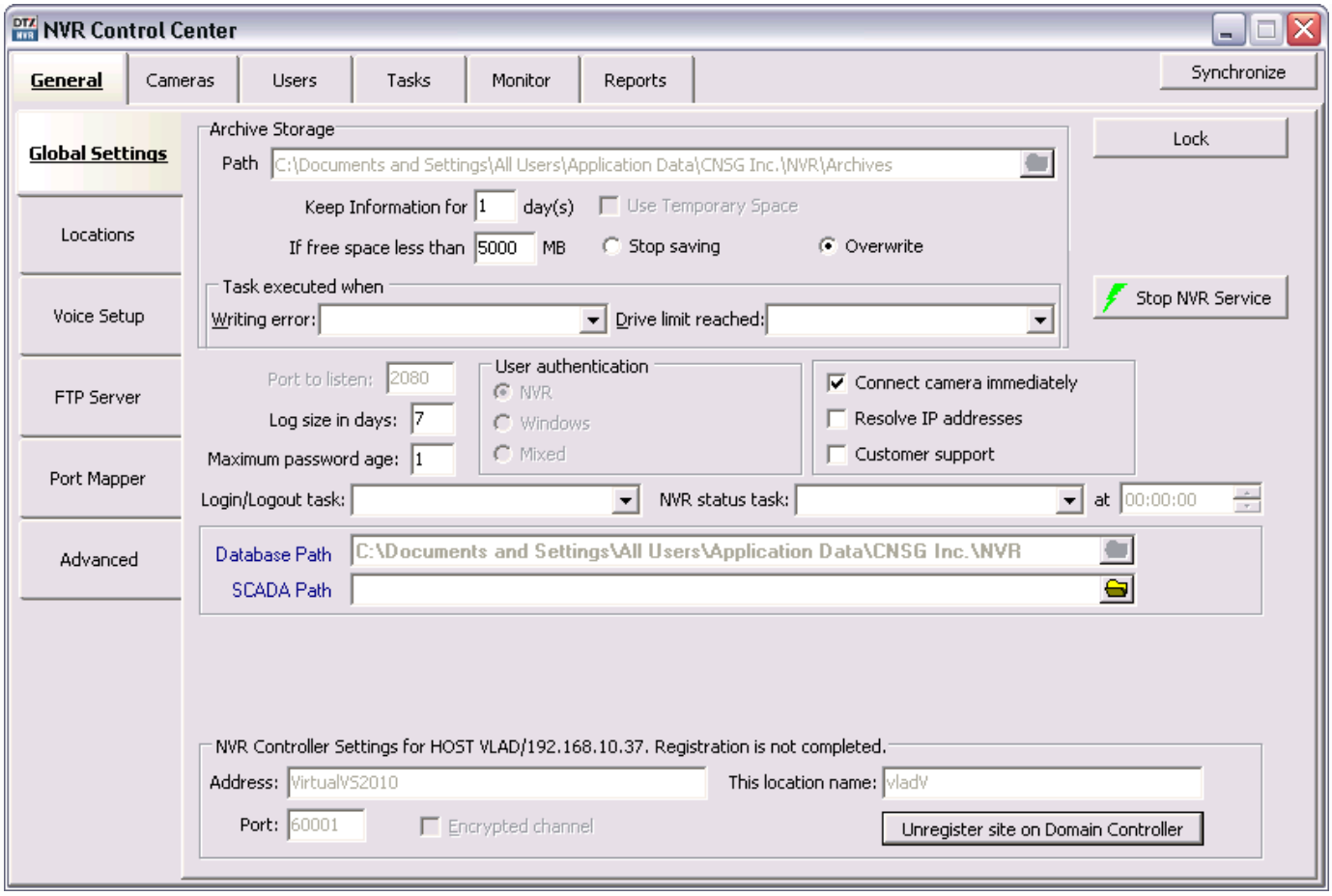


Fig 6. NVR Control Center — General — Global Settings
(Request to unregister on Child NVR.)

2. Unregister on Domain Controller

To unregister a specific child NVR on the NVR Domain Controller —

1. In the Domain Controller **NVR Control Center** go to **General — NVR Locations** (Fig 7).
2. Select the NVR you want to unregister in the **Servers Locations** list.
3. Click **Unregister** button. Provide credentials. The NVR location will be deleted from the **Servers Locations** list — proper messages appear on both sides.

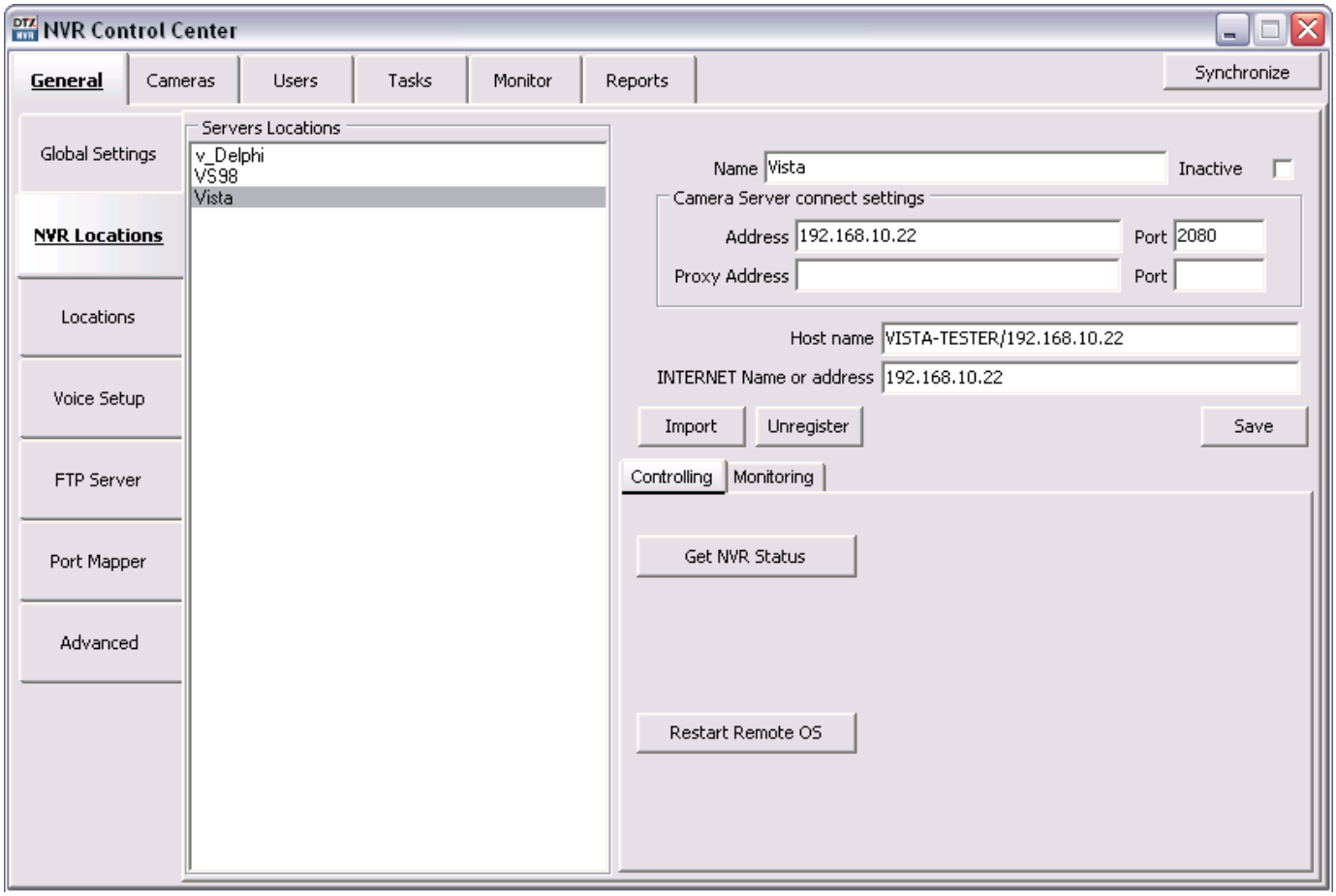


Fig 7. Domain Controller NVR Control Center — General — NVR Locations
(Request to Unregister on Domain Controller. Make Child NVR Temporarily Inactive)

Temporarily Inactive Child NVR

The NVR Domain Controller allows users to administer and control all cameras in the domain from a single Domain Controller interface considering all child NVRs as one powerful NVR. You can make any child NVR in the domain temporarily inactive if you know for a fact that the site is temporarily down for maintenance or other issues. In this case the system will NOT initiate unnecessary tasks for a known problem and will return to monitoring only after you make the NVR active again.

To make child NVR temporarily inactive:

1. In the Domain Controller **NVR Control Cente**r go to **General — NVR Locations** (Fig 7).
2. Select the NVR you want to make inactive from the **Servers Locations** list.
3. **Check Inactive** checkbox next to the **Name** field.
   - ✓ **Uncheck Inactive** checkbox to make the NVR active again.

Centralized Control and Management

What is the Role of NVR Domain Controller?

Setting up DETEXI NVR domain — the network of DETEXI NVRs managed by the NVR Domain Controller — allows centralized user access control and camera management while each particular NVR is responsible for recording video from its own set of cameras configured in the NVR Cameras List.

1. Get/Update NVR Status

From the Domain Controller system administrators can verify the operational status of all network video recorders in the domain, check weather the necessary services has been turned on to support specific features and functionality, update the status and launch NVR health monitoring procedure.

2. Child NVR Health Monitoring

Although every NVR in the NVR Domain Controller configuration should have its own reliability settings there is a new intercommunication layer between the NVR Domain Controller and a child NVR, which could also fail and therefore the system administrator must be able to check its status. To be aware weather all child NVRs are alive and properly respond to the domain controller you should launch Check Alive procedure to setup Task when NVR does not respond for each child NVR in the NVR domain.

3. Managing Domain Users

The NVR Domain Controller maintains a single users list with security information for all domain users and authenticates all Remote DETEXI Clients' access. When Remote DETEXI Clients connect to domain resources such as cameras, settings or recorded video, they will be required to authenticate with user settings defined in the NVR Domain Controller

4. Managing Cameras across Domain

When the DETEXI NVR registration request to become a domain member is accepted — the NVR Domain Controller imports and keeps up-to-date information about the remote (child) NVR cameras. That allows users to administer and control all cameras in the domain from a single interface.

5. Event Management

Tasks The DETEXI NVR can be configured to respond to events all the time or at certain set times. The system response configuration is based on the NVR Task Execution Engine. When an event is triggered, some of the common responses can be configured. The NVR Domain Controller allows users to administer and control all tasks configured in the domain from a single interface

System Health and Status

A background service in Windows, DETEXI NVR will start automatically upon system start-up and continue running even after the user logs out. The underlying structure of the DETEXI NVR software consists of many individual services, which allow execute and organize all the tasks it is responsible for.
From the Domain Controller user interface — NVR Control Center — system administrators can perform system health and status checks. Here users can verify the operational status of **all network video recorders in the domain**, check weather the necessary services has been turned on to support specific features and functionality, update the status, launch NVR health monitoring procedure and other.

- Restart Windows on a child NVR Server
- Stop/Restart any DETEXI NVR in the domain
- View running/stopped services
- Turn on/off a service
- Enable/disable service monitoring
- Synchronize running services with new configuration

Knowing the responsibility of each DETEXI NVR service is important. This allows users to make sure the necessary services for the given application are running and controlled properly, while unnecessary services are turned off to preserve system resources.

1. Monitor Service

Monitor service is an internal service to start/stop other DETEXI NVR services. It is also responsible for monitoring the health and status of all NVR services.

- ✓ It is recommended that the Monitor service be active at all times.
- ✓ System will check status only for the components checked as monitored.
- ✓ If, for some reason, the user stops a service and it is selected to be monitored, it will be restarted by the Monitor service in approximately 30 seconds.
- ✓ During the system tuning you may need to disable restarting a service by the Monitor service.

2. Other NVR Services

Server service authenticates remote users connected to the NVR through the Remote DETEXI Clients. It is also responsible for tracking statistics about the remote user's connections.

Recorder service records information and images from each video input into the NVR archive, according to the configured schedules, preferences, alarms and events.

FTP Server service receives images from cameras via FTP and writes them into the NVR archive. It also raises an alarm when such images are received from a camera, and can also be used for FTP notification of IP address changes from the camera to the NVR.
Check Drive service monitors the condition of the storage path and device to confirm existence and available space for new video being recorded to the archive.

Check Alive service monitors if camera is online and video inputs are active.

Check Alarm service monitors the hard inputs of connected video devices, and raises alarms when defined changes are seen on such inputs.

Tour service moves PTZ cameras through a predefined series of locations according to defined schedules

or on alarms or events.

Get Shots service captures still shots related to alarms from streaming video, when configured, and stores them in a special location in the archive.

Port Mapper service, when configured, routes network requests between two network connections on different subnets or networks. This allows for separate security and corporate networks across which the DETEXI system can communicate.

Port Listener service has the ability to monitor alarms raised by local alarm devices connected to the NVR computer.

Alarm Server service is responsible for raising alarms via the Text-to-Speech engine, telephone, e-mail and other mediums. This is configured as an Automatic Windows Service and starts at Windows startup.

Remote Server service is an internal service for intercommunications between linked NVR Domain Controller and child NVRs. This is configured as an automatic Windows Service and will start with Windows.

Socket Server service is an internal service to support remote TCP/IP access to the NVR. This is configured as an automatic Windows service and starts at Windows startup.

3. Runtime Configuration, Synchronization

For most system settings, the NVR services support runtime configuration. This means that changes can be made to cameras, users, etc. without stopping the NVR services. When you are ready for your changes to take effect, you should **synchronize** the services with the current configuration.

- ✓ It is recommended to synchronize services when all changes are made.
- ✓ You can also start/stop the services using **Start/Stop NVR Service** toggle button in the **NVR Control Center — General — Global Settings**.

Get Child NVR Status

From the Domain Controller user interface — **NVR Control Center** — users can verify the operational status of all network video recorders in the domain.

4. In the Domain Controller **NVR Control Center** go to **General — NVR Locations** (Fig 8).
5. Select the NVR by its location name from the **Servers Locations** list.
6. On the **Controlling** tab click **Get NVR Status** button — additional buttons and the **NVR services** panel appears.
   - ✓ To restart Windows on the NVR Server click **Restart Remote OS** button.

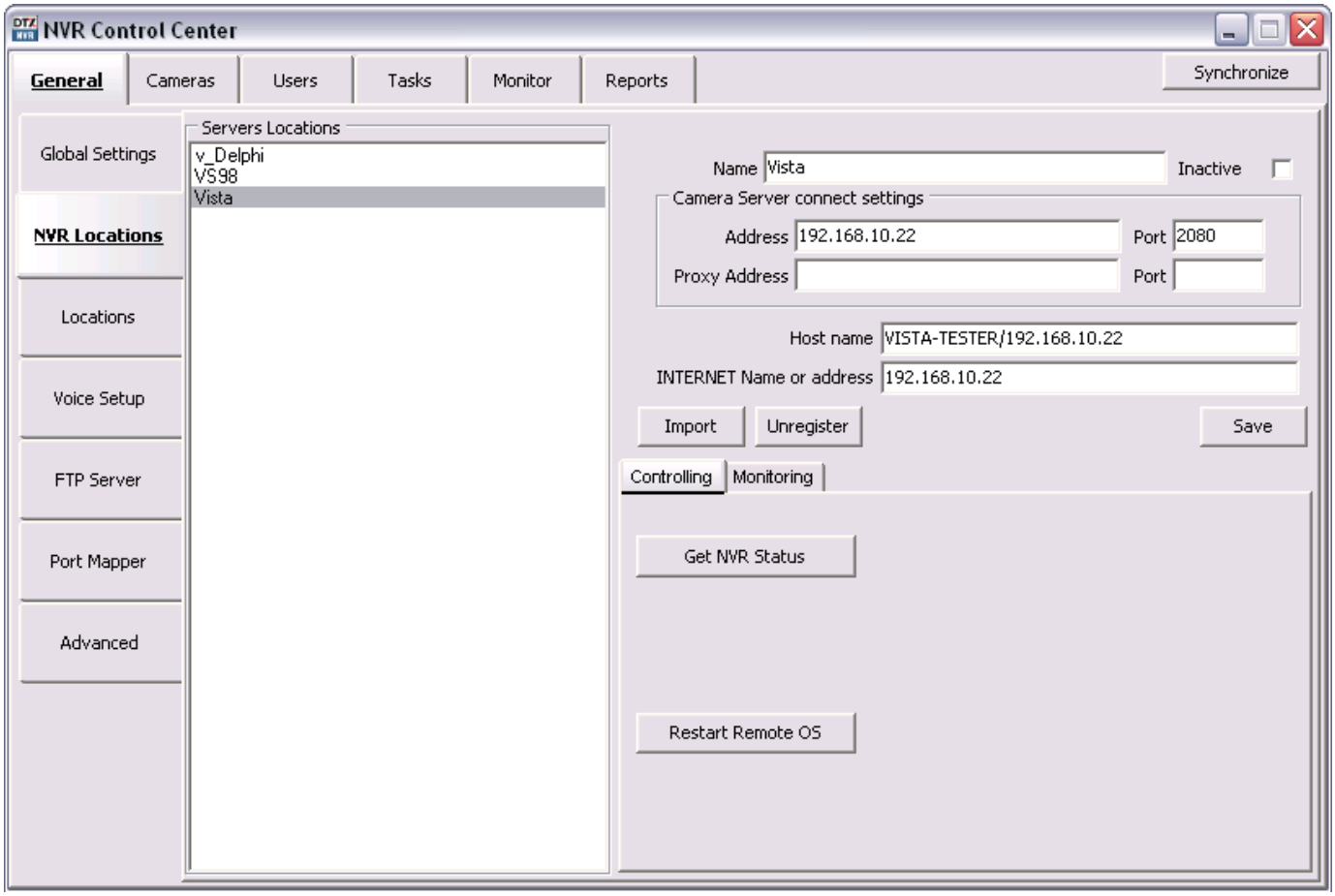


Fig 8. Domain Controller NVR Control Center — General — NVR Locations
(Get NVR Status in the Domain. Restart Windows.)

Update Child NVR Status

From the Domain Controller user interface — **NVR Control Center** — users can update the operational status of all network video recorders in the domain.

1. In the Domain Controller **NVR Control Center** go to **General — NVR Locations** (Fig 9).
2. Select the NVR by its location name from the **Servers Locations** list.
3. On the **Controlling** tab click **Get NVR Status** button — additional buttons and the **NVR services** panel appears.
4. To restart Windows on the child NVR Server click **Restart Remote OS** button.
5. To stop the selected child NVR click **Stop Remotely** button.
6. To restart the selected child NVR click **Restart Remote NVR** button.
7. Click on any service name to turn it red to **stop** the service or black — to **run**.
   - ✓ The color of the service name indicates its status — black while running, red while stopped.
8. To make the service monitored by the **Monitor** service **check** the service checkbox to enable monitoring, **uncheck** — to disable.
   - ✓ During the system tuning you may need to disable restarting a service by the Monitor service;

uncheck the service checkbox to disable monitoring, than you can click on any service name to turn it red to stop the service or black — to run.

9. To synchronize the services with the current configuration click **Synchronize Location** button.

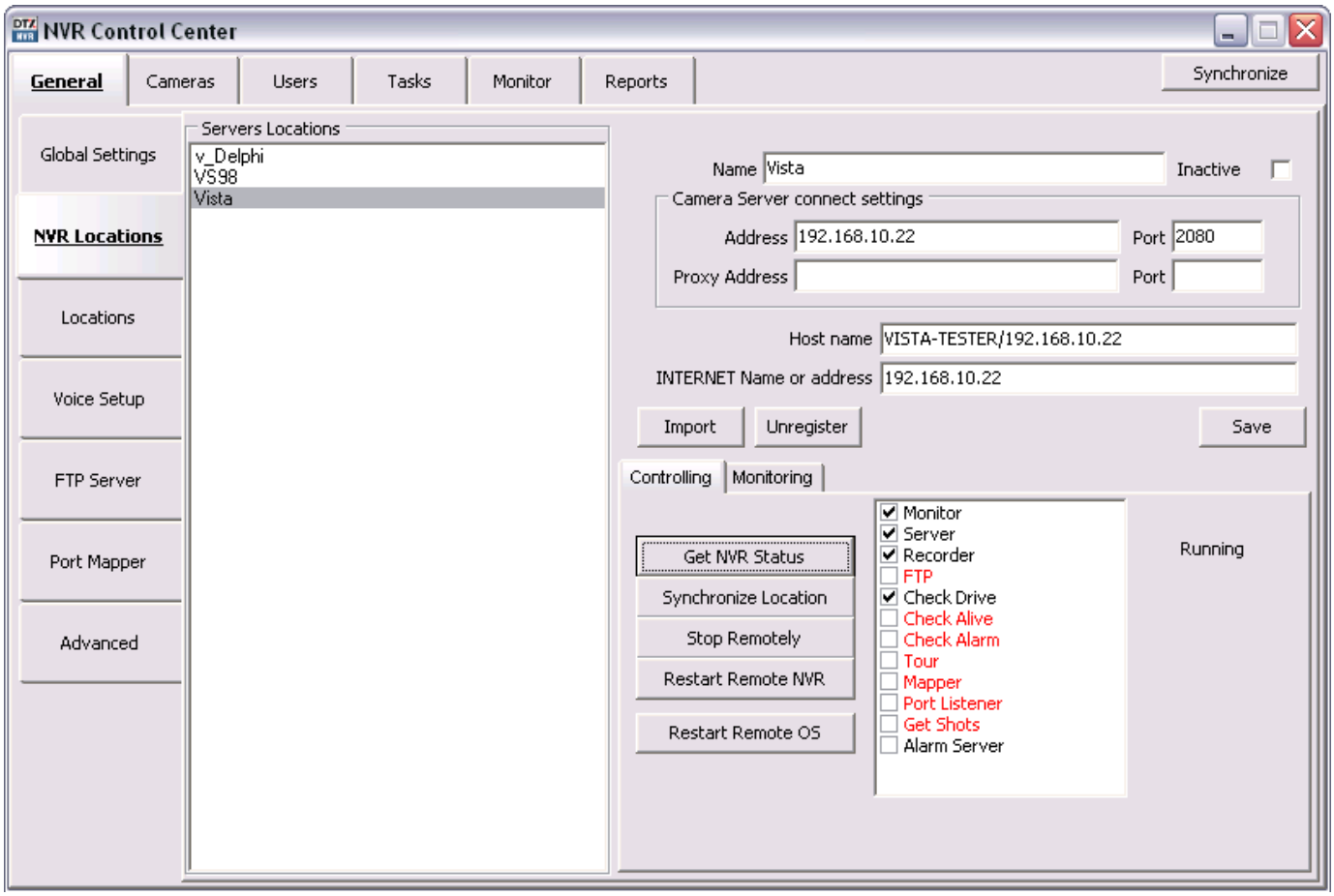


Fig 9. Domain Controller NVR Control Center — General — NVR Locations

(Update NVR Status in the Domain. Restart Windows. Restart NVR.)

- ✓ **NVR Services Synchronization** — if the services were running during the system configuration *(runtime configuration)* the services synchronization with the current configuration is required on the NVRs where the changes were made. After the synchronization these changes will take effect.
- ✓

Managing Domain Users

The NVR Domain Controller maintains a single users list with security information for all domain users and authenticates all Remote DETEXI Clients' access. When Remote DETEXI Clients connect to the domain resources such as cameras, settings or recorded video, they will be required to authenticate with user settings defined in the NVR Domain Controller. The NVR Domain Controller has the ability to provide different lists of cameras from any NVR location to different users, only allowing users to see and interact with the cameras they have privileges for. In addition, permissions such as PTZ control, maximum

connection time, task control, etc. are configurable on a per-user basis.

✓ Any child NVR in the domain can have its own users list. This is not forbidden but is not necessary in the NVR Domain Controller configuration. These users have access to **this NVR** resources only.

1. Add New User

1. In the Domain Controller **NVR Control Center — Users — User Information** select **This Location** from the **Servers Locations** list, update the list (Fig 10).

   ✓ **This Location** means the NVR Domain Controller.

   ✓ To update a child NVR individual users list select the NVR by location name. Authentication will be required.

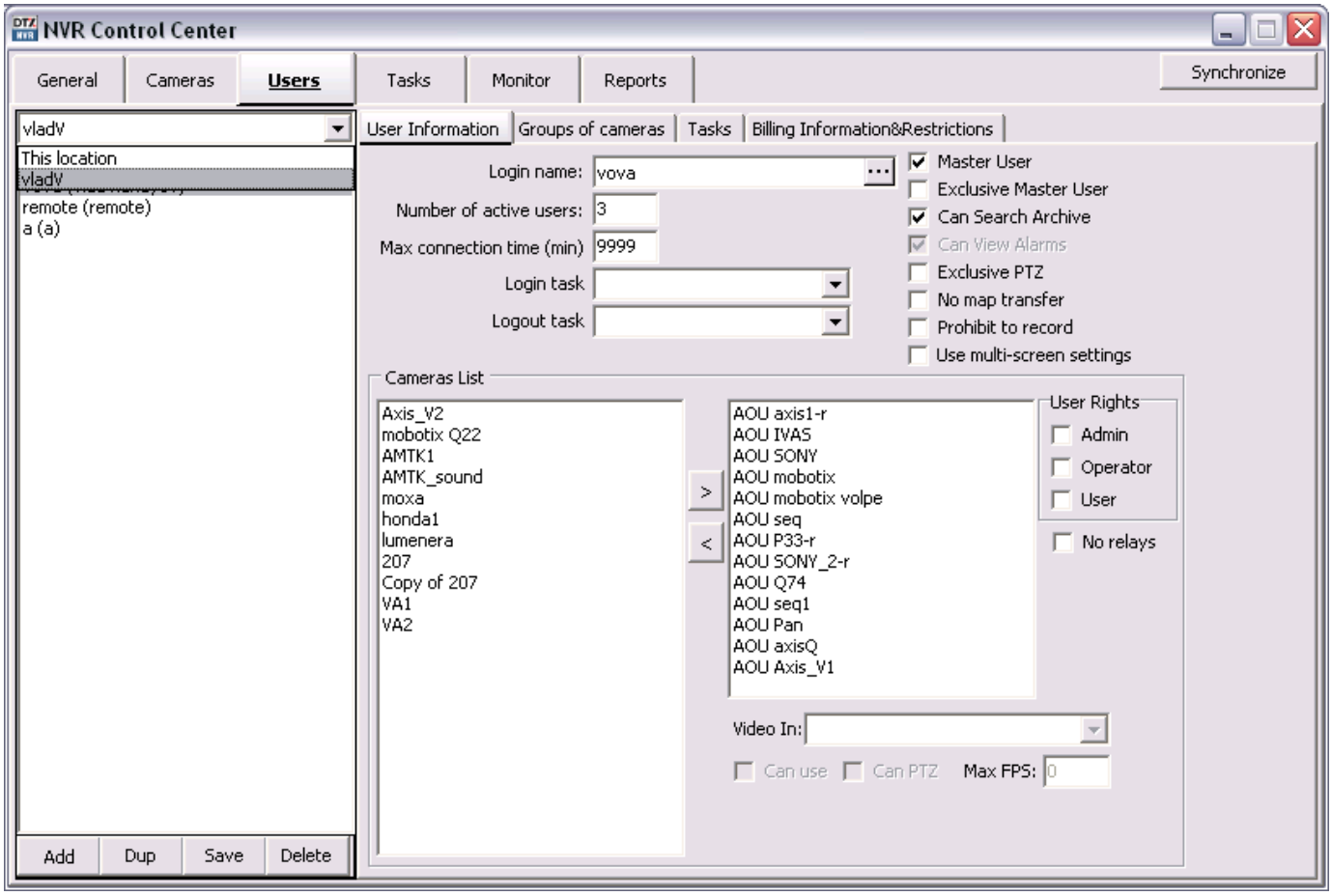


Fig 10. Domain Controller NVR Control Center — Users — User Information
(Add New User to the Domain Controller Users List.)

2. Below the **Users List** click **Add** button to open blank **User Information** dialog (Fig 10);
   — or —
   Click **Dup** button to open a copy of selected user settings for editing.
3. Enter a single word, case-sensitive, alphanumeric **User Name** to use to login to the NVR.
4. Enter a single word, case-sensitive, alphanumeric **User Password** and re-type it to the **User Password Confirmation** to be sure it is typed as desired.
5. Enter the **Number of Active Users** to define the number of Client instances the user can be signed into simultaneously.
6. Enter **Max connection time** to define the number of minutes user can be continuously connected to

the NVR before the connection will be terminated. User may login again if desired. A value of **9999** designates **no time limit**.

7. **Check Master User** checkbox to give the user permission to terminate other user sessions from the **Client — Get Users**.
8. **Check Can Search Archive** checkbox to give the user permission to view NVR archive.

   ✓ Remember that **User Cameras to Interact** also **must** be setup.

2. Define User Cameras to Interact

To define the cameras user has access to —

1. With the user selected choose the camera from the **Cameras List** at the left and click "**>**" button to add the camera permission to the user — the camera name appears in the selected cameras list at the right (Fig 10).
2. Select the camera name in the selected cameras list at the right.
3. **Check** proper checkbox under the **User Rights** to pass the previously configured camera authentication settings — **Adm**, **Oper** or **User**.

   ✓ The **User Rights** chosen for the first camera configured will automatically be assigned to each camera after that unless manually changed.

   ✓ It is necessary to assign the level of authentication allowed from this user to the camera defined in the **NVR Control Center — Cameras — Security & Alarm**.

   ✓ In most cases, the camera has only one username and password, with administrative privileges.

   ✓ Be sure that **User Rights** settings make sense considering the authentication settings in the **Security & Alarm**.
4. **Check Can PTZ** checkbox below the selected cameras list to give the user PTZ permission on the selected camera.

   ✓ PTZ permission is defined on a per-camera basis, and is enabled by default if the camera has PTZ capabilities when assigned to the user.
5. Repeat steps 1-4 to add more camera permissions.
6. Click **Save** button below the **Users List** to save user settings.

3. Synchronize NVR Location

When you are ready for your changes to take effect, you should synchronize the services running on the NVR holding the updated users list with the current configuration.

✓ If updates were made to the Domain Controller Users list click **Synchronize** button in the top right corner to activate the new configurations.

✓ If a child NVR individual Users list was updated — synchronize the NVR from the Domain Controller **NVR Control Center — General — NVR Locations**.

When the NVR registration request to become a domain member is accepted — the NVR Domain Controller **imports** and **keeps up-to-date** information about the remote (child) NVR cameras that allows users to administer and control all cameras in the domain from a single interface.

- ✓ Any updates made in the cameras settings on the NVR Domain Controller will be automatically propagated to the child NVRs and vise versa.
- ✓ When you are ready for your changes to take effect, you should synchronize the services running on the NVR Domain Controller and the services running on the child NVR holding the updated cameras with the current configuration.
- ✓ Domain Controller usually doesn't have its own cameras *(though it is not forbidden)* but provides centralized user provisioning and management.

1. Update Camera Settings

To update camera settings in the Domain Controller **NVR Control Center — Cameras** select the camera from the **Cameras List** grouped by the **NVR Locations** (Fig 11).

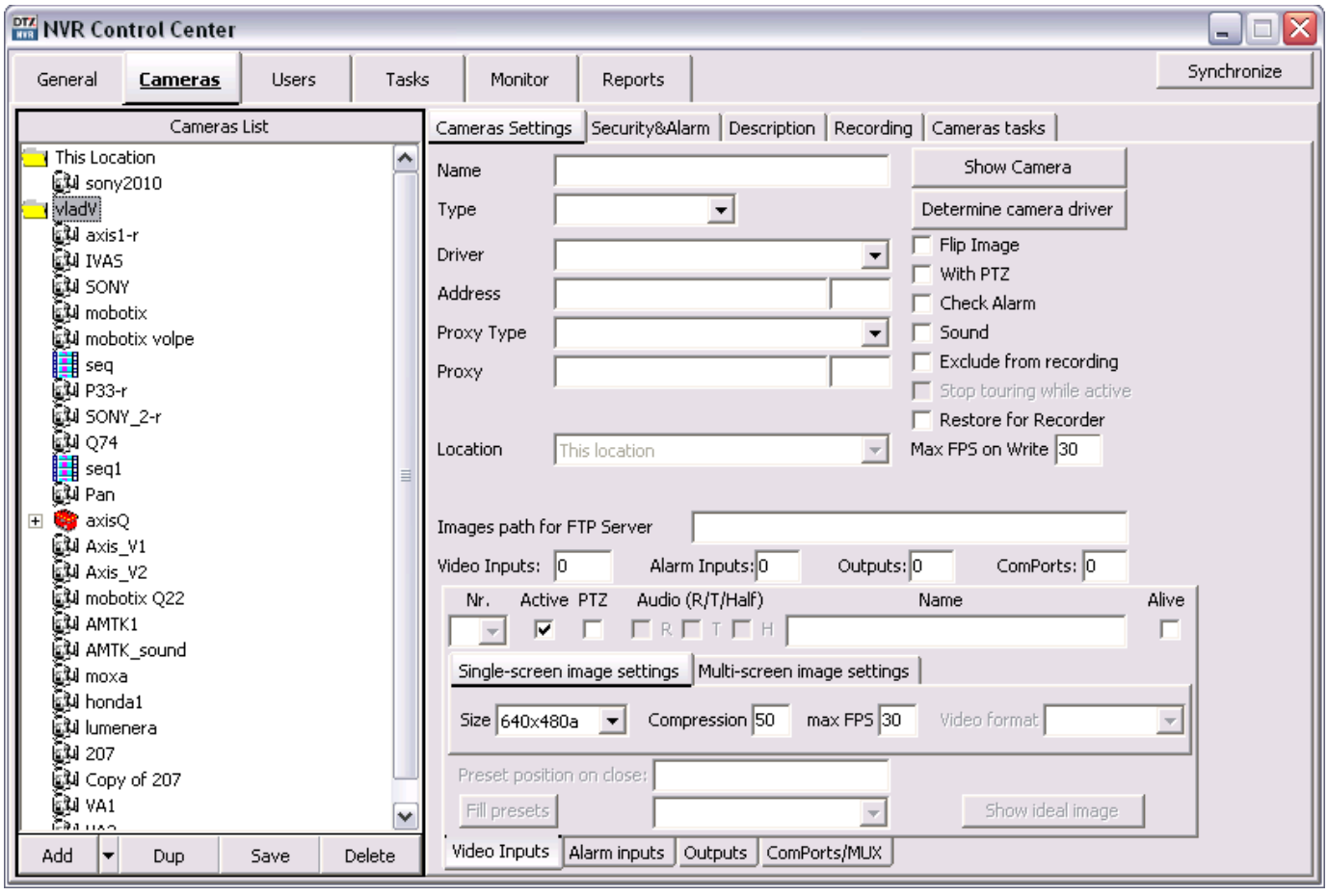


Fig 11. Domain Controller NVR Control Center — Cameras
(Update Camera Settings.)

Then you can view/update selected camera settings:

- Define camera connection and security settings
- Configure camera tours, groups, sequences and location maps

- Setup camera recording instructions including alarms and motion detection
- Configure camera Inputs/Outputs etc.

For the detailed instructions, refer to the **DETEXI NVR — Managing Cameras** manual.

✓ **This Location** means the NVR Domain Controller.

✓ The NVR Domain Controller has the same graphical user interface named NVR Control Center as the NVRs just with expanded functionality.

✓

2. Synchronize Updates

When you are ready for your changes to take effect:

1. Synchronize the services running on the NVR Domain Controller with the current configuration by clicking **Synchronize** button in the top right corner of the Domain Controller **NVR Control Center**.
2. Synchronize the services running on the child NVR holding the updated cameras with the current configuration in the Domain Controller **NVR Control Center — General — NVR Locations**.

Event Management (Tasks)

The DETEXI NVR can be configured to respond to events all the time or at certain set times. The system response configuration is based on the **NVR Task Execution Engine**. When the event is triggered, some of the common responses can be configured. The NVR Domain Controller allows users to administer and control all tasks configured in the domain from a single interface.

✓ The NVR Domain Controller and every child NVR in the domain have their peculiar tasks applicable to them.

1. Update Tasks

In the Domain Controller **NVR Control Center — Tasks** select a location from the **Servers Locations** list (Fig 12). Then you can add new or view/update the selected NVR task —

- Define a new task
- Add/update action/notification to the task
- Create composite task
- View task usage info
- Configure task triggers etc.

For the detailed instructions, refer to the **DETEXI NVR — Event Management** manual.

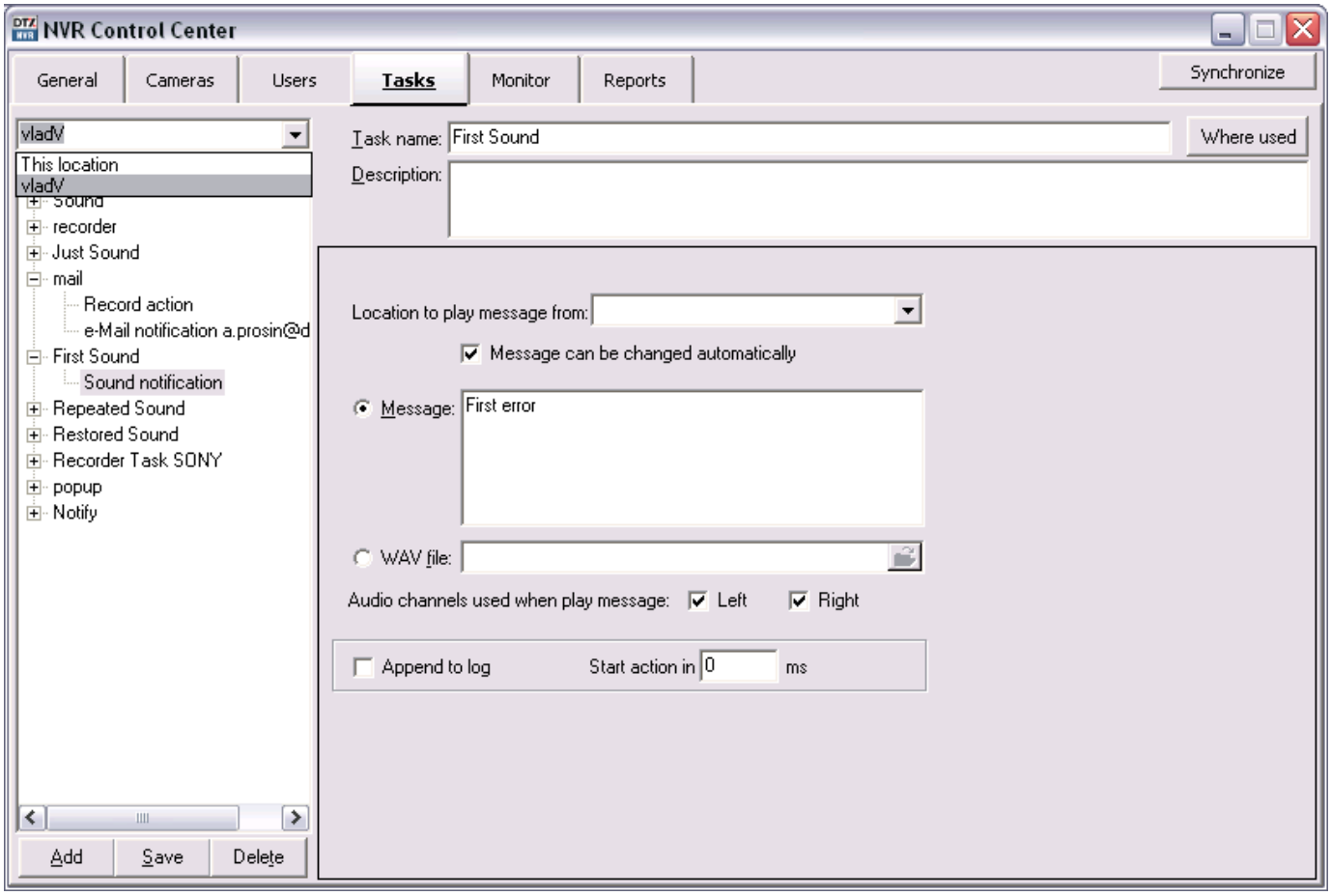


Fig 12. Domain Controller NVR Control Center — Tasks
(Select Server Location — Add/Select Task.)

2. Synchronize NVR Location

When you are ready for your changes to take effect, you should synchronize the services running on the NVR holding the updated TASKS with the current configuration.

- ✓ If updates were made to the Domain Controller Users tasks click **Synchronize** button in the top right corner to activate the new configurations.
- ✓ If a child NVR individual tasks were updated — synchronize the NVR from the Domain Controller **NVR Control Center — General — NVR Locations**.

Domain Configuration Health Monitoring

What Can Be Done?

What can be done to ensure the DETEXI domain configuration health? First of all, the reliability settings should be configured for each NVR in the domain. Then — be aware weather all child NVRs are alive and properly respond to the domain controller. And finally, the domain database held by the NVR Domain Controller should always be synchronized with the child NVRs data.

1. DETEXI Reliability System

IP-surveillance system reliability minimizes the risk of system failure and associated down-time, therefore a designated person or persons should be aware of the DETEXI system status at any given time. There are several areas that should be checked to insure that you have a healthy and functioning system —

- Is the NVR running at all *(power is OFF or ON)*
- Are all selected NVR components running
- Are all cameras with an active schedule functioning and being recorded
- Is there enough space to make a recording
- Are there enough system resources to make a recording
- Is the NVR Domain Controller network and all it's child NVRs healthy and running

To address the issue the **DETEXI Reliability System** is embedded into the software. Every NVR, including NVR Domain Controller in the domain configuration should have its own reliability settings. In this case if something happens to the system, hardware or one of the NVR components, certain task assigned to this event automatically informs the system administrator about the problem.
For the detailed instructions on how to setup the system health monitoring, refer to the **DETEXI NVR — Reliability System** and the **DETEXI NVR — Event Management — Task Triggers — System Health** manual.

2. Child NVR Health Monitoring

Although every NVR in the domain configuration should have its own reliability settings there is a new intercommunication layer between the NVR Domain Controller and a child NVR, which could also fail and therefore the system administrator must be able to check its status. To be aware weather all child NVRs are alive and properly respond to the domain controller you should launch Check Alive procedure to setup Task when NVR does not respond for each child NVR in the domain controller NVR Control Center.

3. Domain Database Synchronization

The NVR Domain Controller supports the domain database synchronization automatically, but it can be lost if during the system configuration the connection between a child NVR and the Domain Controller was broken.

- The synchronization **must** be restored when the connection is established.
- The DETEXI NVR domain continues to work in **full configuration** even if the connection between any child NVR and the Domain Controller is temporarily broken.

Setup Child NVR Check Alive Procedure

Although every NVR in the NVR Domain Controller configuration should have its own reliability settings there is a new intercommunication layer between the NVR Domain Controller and a child NVR, which could also fail and therefore the system administrator must be able to check its status.

To be aware weather all child NVRs are alive and properly respond to the NVR Domain Controller you should launch **Check Alive** procedure to setup **Task when NVR does not respond** for each child NVR in the NVR domain (Fig 14).

1. In the Domain Controller **NVR Control Center** go to the **General — NVR Locations**.
2. Select a child NVR from the **Servers Locations** list.
3. Switch to the **Monitoring** tab and **check Check Alive** check box.
4. Input your setting to define an **Interval for monitoring** (sec), number of **Attempts** and interval between them.
5. Select an appropriate predefined task from the **Task when NVR does not respond** list.

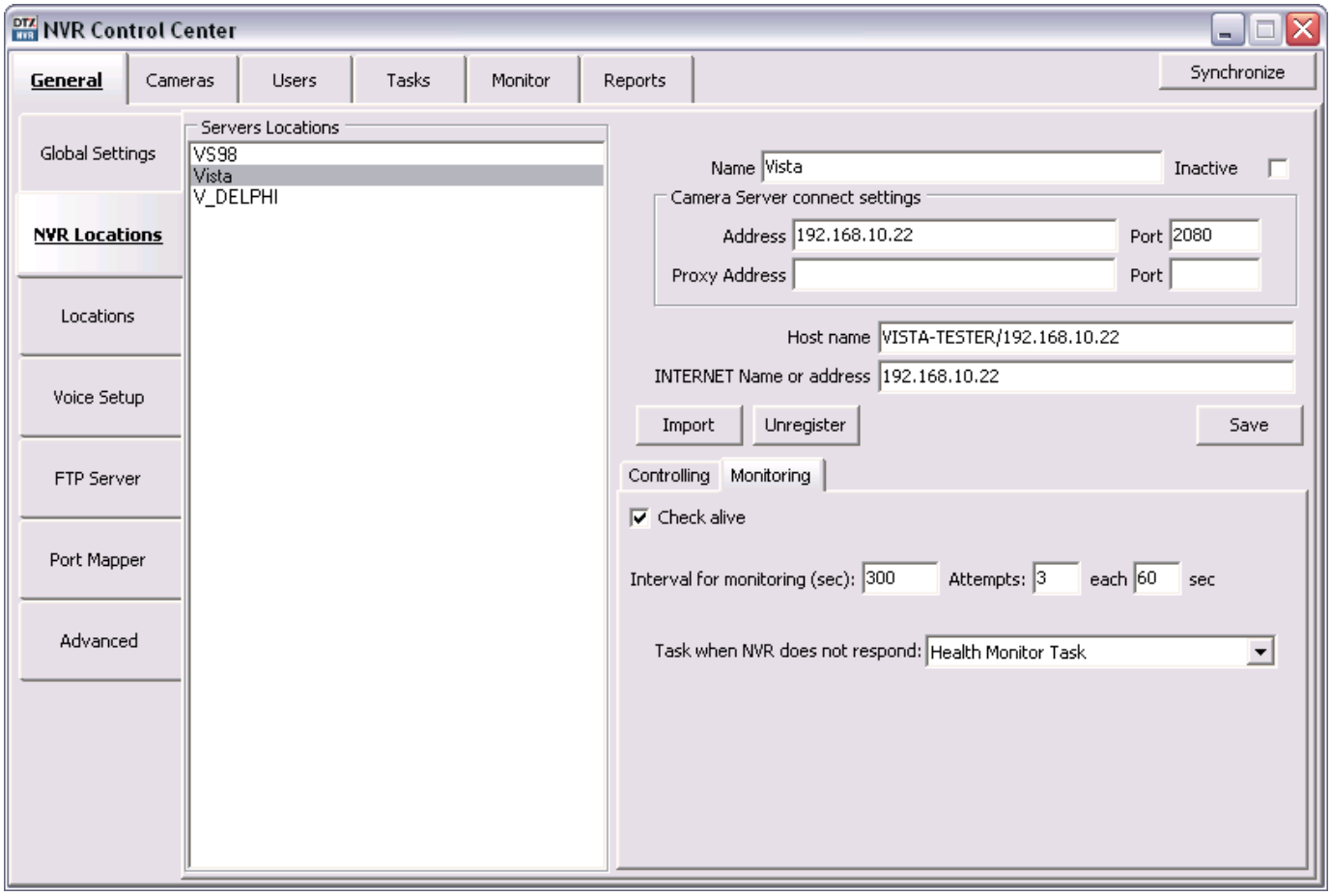


Fig 14. Domain Controller NVR Control Center — General — NVR Locations
(Setup Child NVR Check Alive Procedure.)

- ✓ Recommended Settings — **Interval for monitoring** (sec) — **300**, **Attempts** — **3**, **Each** (in sec)— **60**
- ✓ If you know for a fact that the site is temporarily down for maintenance or other issues, simply **uncheck** the **Check Alive** check box. In this case the system will NOT initiate unnecessary tasks for a known problem and will return to monitoring only after you check the box again.
- ✓

Domain Database Synchronization

When a registration request from a child NVR is accepted — the NVR Domain Controller **imports** the NVR cameras settings to the domain database held on the NVR Domain Controller. After that the domain database will be synchronized automatically — any updates made in the cameras settings on the NVR Domain Controller will be automatically propagated to the child NVRs and vise versa. However, the synchronization could be lost if the connection between a child NVR and the domain controller is temporary broken.

1. If the Connection Is Temporarily Broken

Notice that the DETEXI NVR domain continues to work in **full configuration** even if the connection between a child NVR and the domain controller is temporarily broken. However, the updates for the domain database at that time will be **rejected**; while the updates for a child NVR data from its own NVR Control Center will be still allowed. If a child NVR cameras settings were updated during a connection failure the synchronization with the domain database will be **lost**. However, child NVR users list is used by this NVR only and its updating can not cause a synchronization failure.

- The synchronization **must be restored** when the connection is established.
- To synchronize the domain database with the child NVR updated settings the NVR data should be **imported** to the domain database.
- The Domain Controller users list, its own cameras and tasks could be updated at any circumstances.

2. Synchronization Failure Message

If a child NVR cameras settings were updated during a connection failure the synchronization with the domain database will be lost. The synchronization must be restored when the connection is established by importing the child NVR updated settings.

- The synch failure message will appear in the child **NVR Control Center — General — Global Settings** under the **NVR Controller Settings for HOST** at the bottom.
- The message will also appear in the Domain Controller **NVR Control Center — General — NVR Locations**.

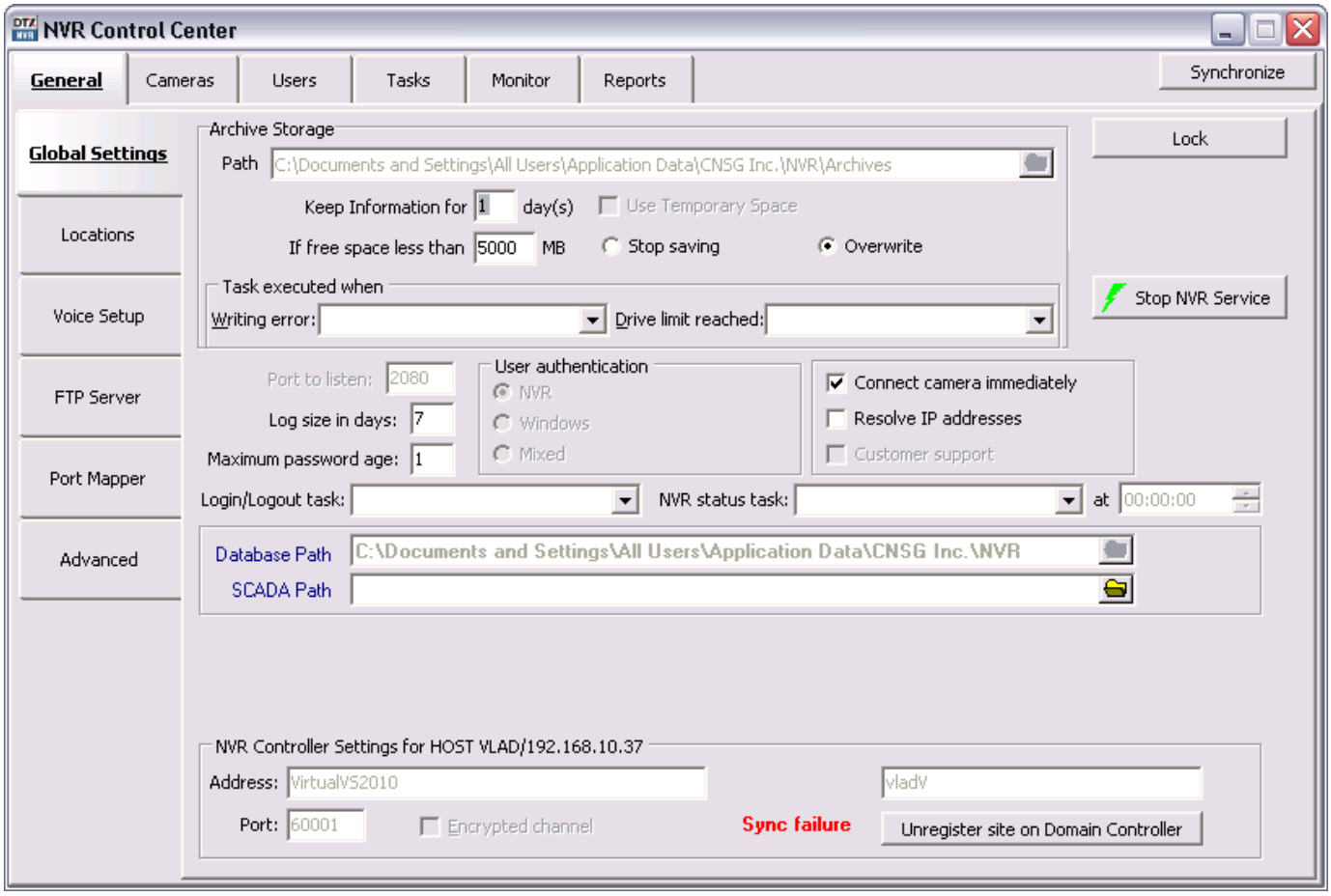


Fig 15. Domain Controller NVR Control Center — General — Global Settings
(Synchronization Failure Message.)

✓ The child NVR location name in the **NVR Control Center — General — NVR Locations — Servers Locations** list will stay red until the synchronization is restored.

3. Restore Synchronization

1. In the Domain Controller **NVR Control Center** go to **General — NVR Locations**.
2. Select the NVR location in the **Servers Locations** list.
3. Click **Import** button to **import** the NVR cameras settings. Provide credentials and wait until the data import is completed.

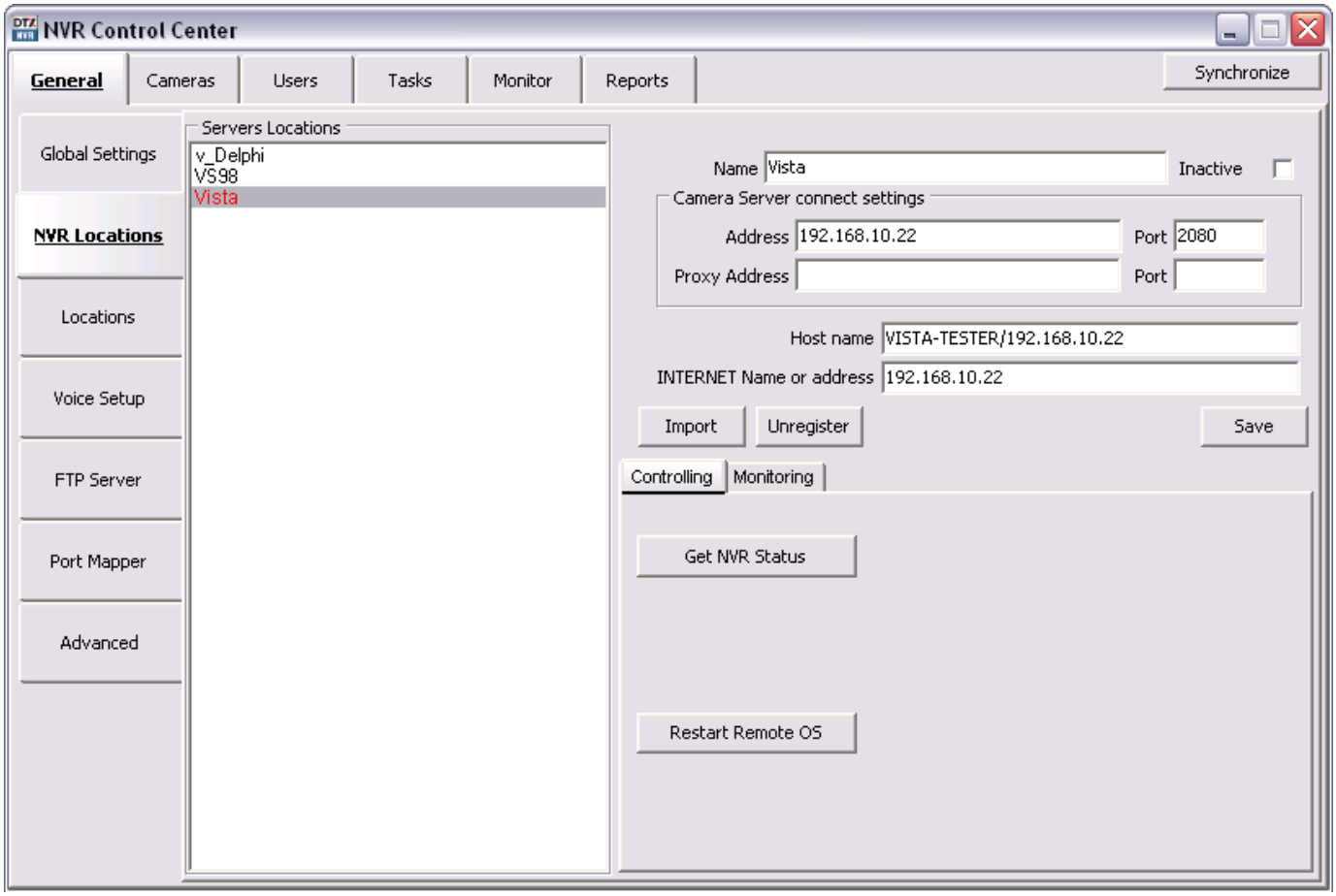


Fig 16. Domain Controller NVR Control Center — General — NVR Locations
(Import Data from Failed Child NVR.)