



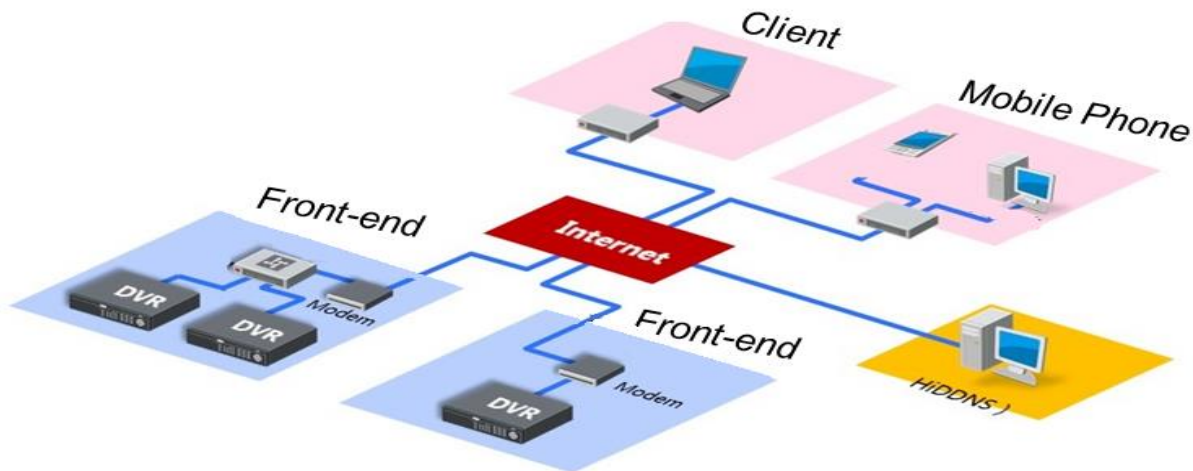
Network Access to Hikvision Surveillance Devices

Hikvision Entry Learning

- **PC Network Access & DDNS**
 - **Access Configuration**
 - **Access Methods**
 - **Access FAQ**
- **HIK-CONNECT Accessing**

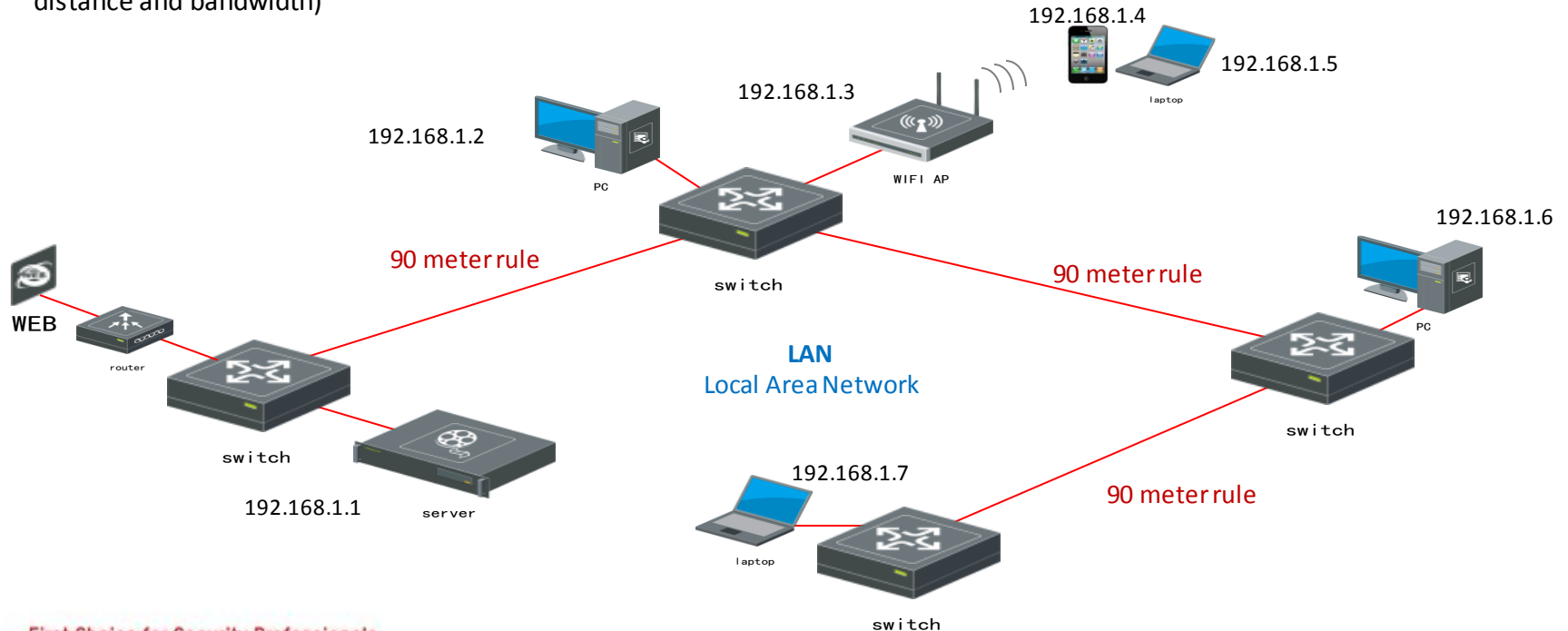
Hikvision DDNS Introduction

HiDDNS is a FREE dynamic domain name server provided by Hikvision, which offers a persistent domain name for non-static IP devices. DDNS technology is widely used in various Hikvision devices (e.g., DVR, NVR, IPC, etc.) without having to register for a third-party domain name.



Basic IT Networks

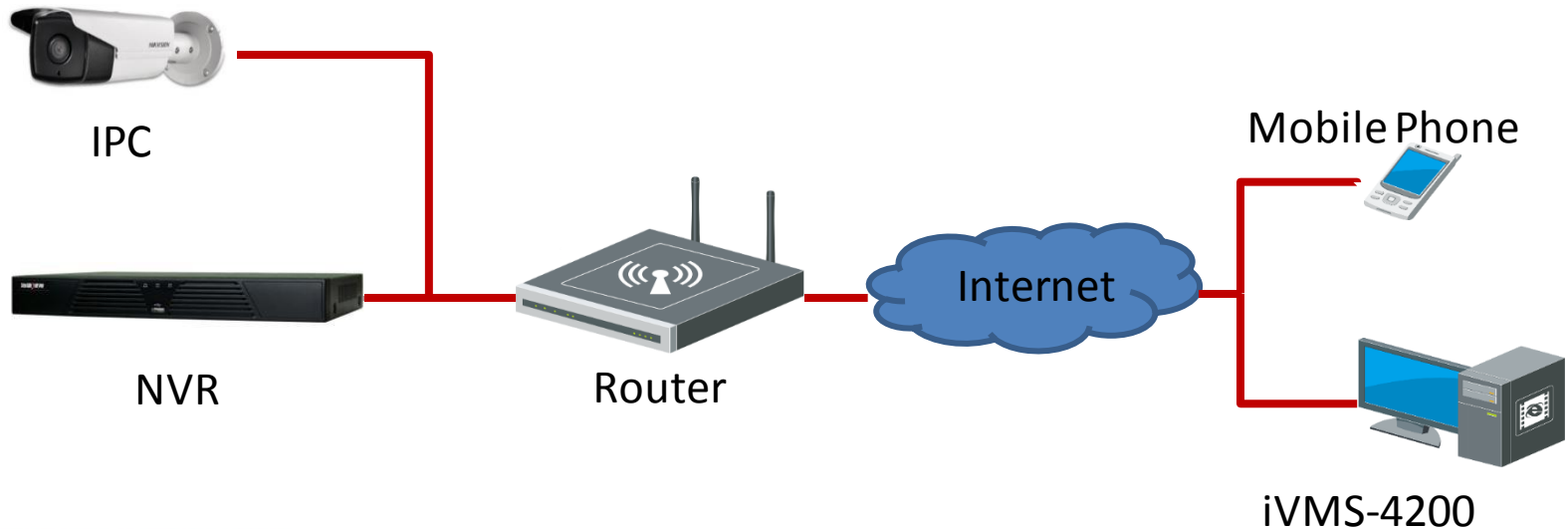
Don't be frightened off by IT Networks, there are some simple rules to remember. Everything has to have an address – just like your house needs a number to get your post, and there are maximum distance to consider.(fibre optic cable may be used to counter issues with distance and bandwidth)



Remote Surveillance

When we want to remotely view a device, we can do so across a network (LAN & WAN) as long as the devices are **'visible'**. Live view, playback, video downloading and parameter configuration can be utilised by an authorised user via client software or web browser.

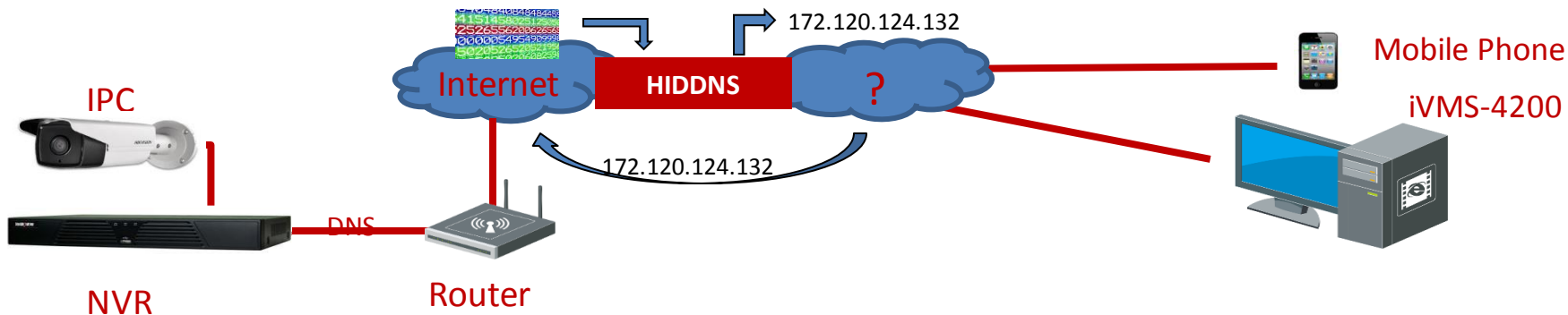
Remote viewing from outside the LAN or WAN will require **'route'** to be provided to the network and then a **'access'** to the devices.



Static & Dynamic IP Address

When remotely accessing IP CCTV devices, we said that we need them to be '**visible**', many domestic and some business ADSL/Broadband connections may not have a static IP address but a dynamic one.

This doesn't matter when a device inside the network needs to get out to the internet for a remote connection as it uses a DNS - Domain Name System to guide it, but when you are out of the network and need to get back in to '**route**' to the network.



A dynamic IP address can change and is out of your control, it is changed by the ISP whenever they require it to be changed. However Hikvision provide a free DDNS (Dynamic Domain Name Systems) which automatically maps the dynamic IP address of the site to a fixed IP address for you to use to '**access**' the network.

Port Forwarding

So we are still trying to access our device remotely, we now have a 'visible' system on a network, we have a 'route' to it, BUT we can't 'access' it. This is because access is through a series of locked doors (or ports).

So we now need to allow the doors to the CCTV system to be opened so we can get to the IP CCTV system.

So we need to **Open the Ports** and **Forward the Port** to the IP CCTV system.

Hikvision standard ports are:

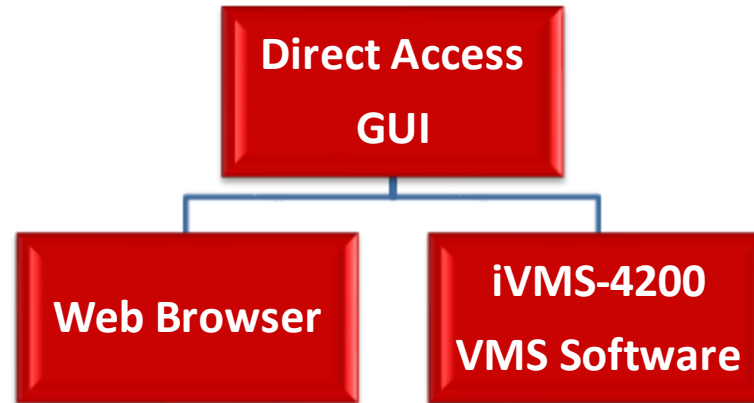
- 80 – HTTP (web)
- 8000 – Server (device)
- 554 – RSTP Real Time Stream Protocol – (video)

In the router setup, these 3 ports needs to be opened and 'port forwarded' to the IP address of the NVR or device you want to connect to remotely.

<http://www.portforwarding.com/>

<http://www.yougetsignal.com/tools/open-ports/>

NOTE: You can change these default ports, or may be required to by the end user, if so make sure all devices are changed to match a nd the port forwarding is from the relevant assigned ports.



NOTE: There are several ways of accessing a recording device to set it up for network access, you also need to consider if access is going to be accessing the device on a local network, remotely or both.

Manual Configuration from the device through the GUI

- First, configure the recorder network parameters to ensure access is available over a network.

The screenshot shows the 'Configuration' menu with 'Network' selected. The 'Basic Configuration' section is visible, showing various network parameters. The 'Alternate DNS Server' field is highlighted with a yellow box.

Configuration	
General	General PPPOE DDNS NTP Email FTP SNMP NAT More Settings
Network	
NIC Type	10M/100M/1000M Self-adaptive
Enable DHCP	<input type="checkbox"/>
IPv4 Address	192 . 168 . 1 . 64
IPv4 Subnet Mask	255 . 255 . 255 . 0
IPv4 Default Gateway	192 . 168 . 1 . 1
IPv6 Address 1	
IPv6 Address 2	
IPv6 Default Gateway	
MAC Address	
MTU(Bytes)	
Preferred DNS Server	8.8.8.8
Alternate DNS Server	8.8.4.4

Menu → Configuration → Network → Basic Configuration

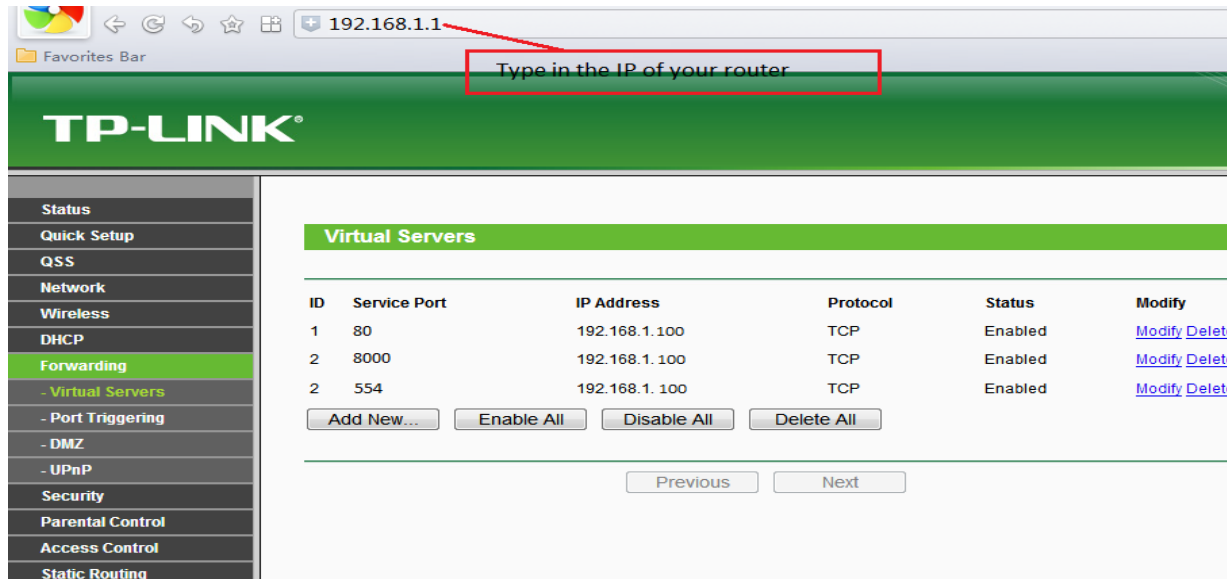
You need to set IP4 Address, Subnet Mask, Gateway, Preferred & Alternate DNS, all IP4 network address settings need to be relevant to the network the devices will be placed on.

NOTE: If DHCP is enabled then DNS Settings will be greyed out

Recorder Network Access

To remotely access the device, the correct ports need to be opened and forwarded correctly.

- Second, set port mapping in the router configuration.



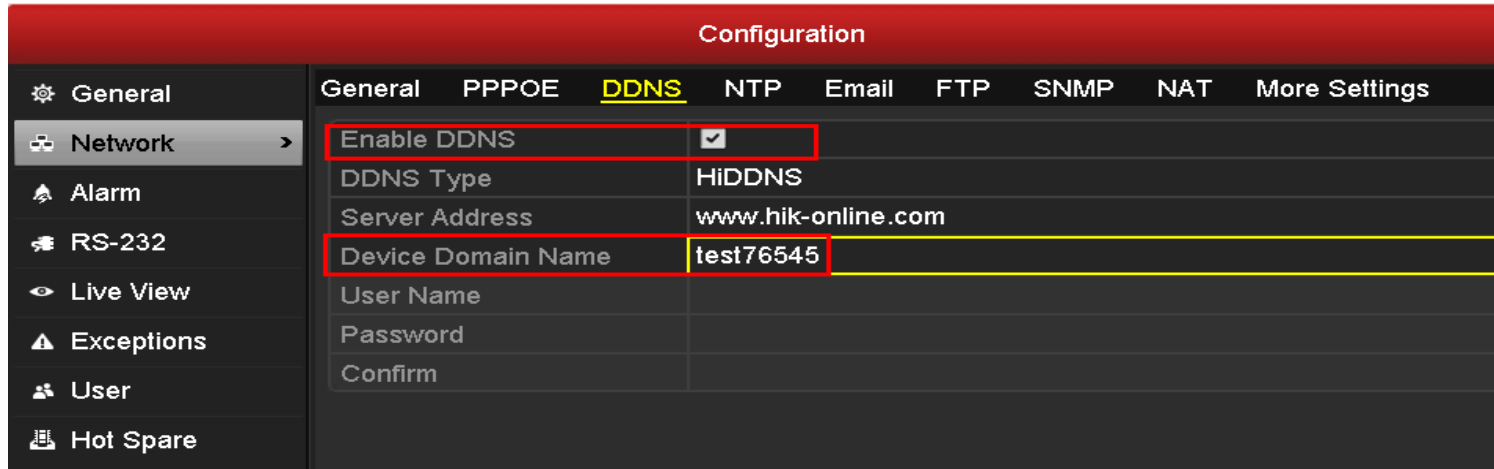
Enter the port forwarding page of router and map relevant ports (default as 80, 8000 and 554) – if you change from default setting, all device and router settings MUST be the same.

NOTE: For help setting up the router you can refer to www.portforwarding.com

Recorder Network Access

Use DDNS settings to access your device, this may be because only a dynamic IP address is available, or no external static address known.

- ▣ Configure Hikvision DDNS settings



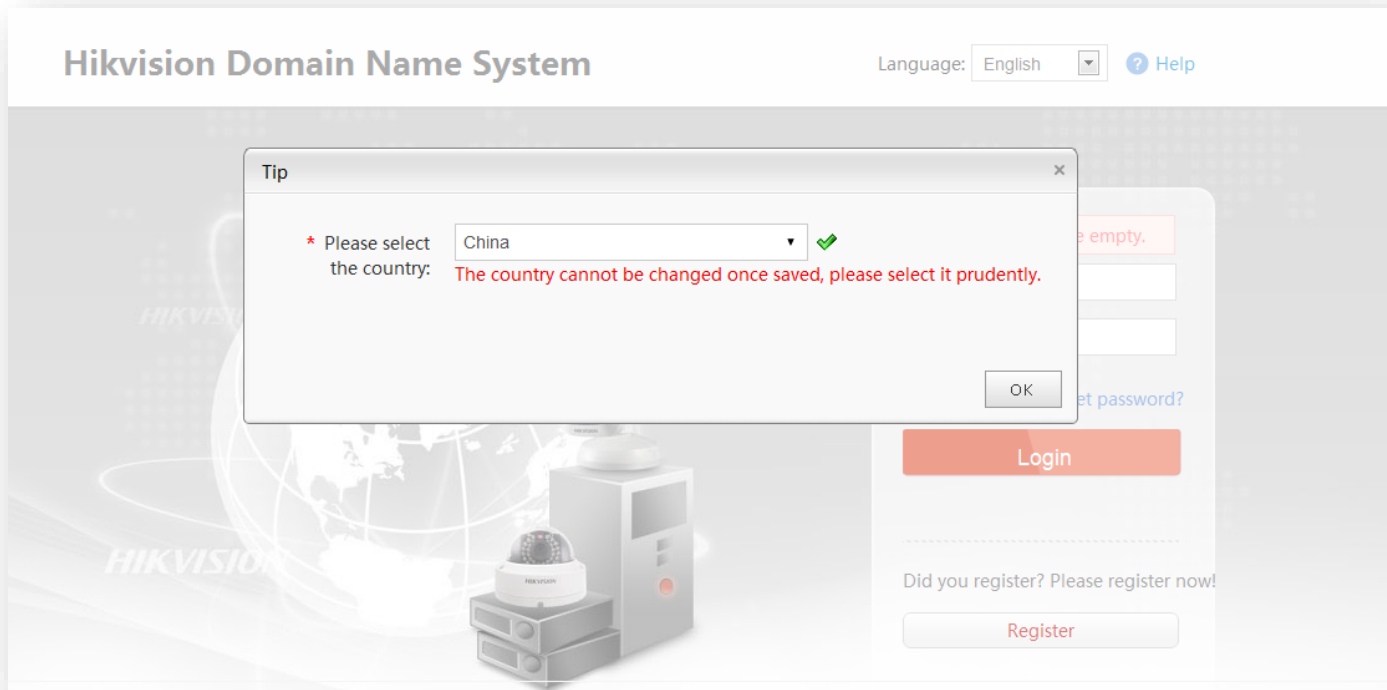
Menu → Configuration → Network → DDNS

Enable DDNS, then select the preferred DDNS service.

NOTE: Make the Domain name as unique to an individual system as possible to ensure there are no conflicts with others (e.g. hikvisionmaidenhead1345). Domain name allocation is on first come first served basis. Names must start with lowercase letter or number.

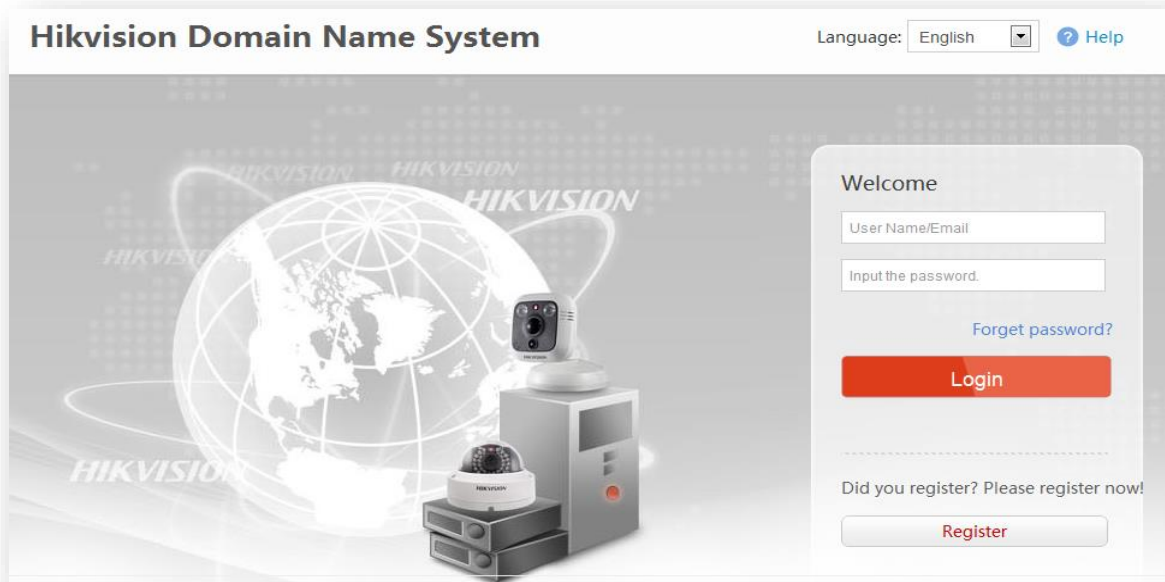
DDNS Management Platform

- If you have already registered an account, you can use your account and password to login. It will indicate you to select an country to refresh your information.

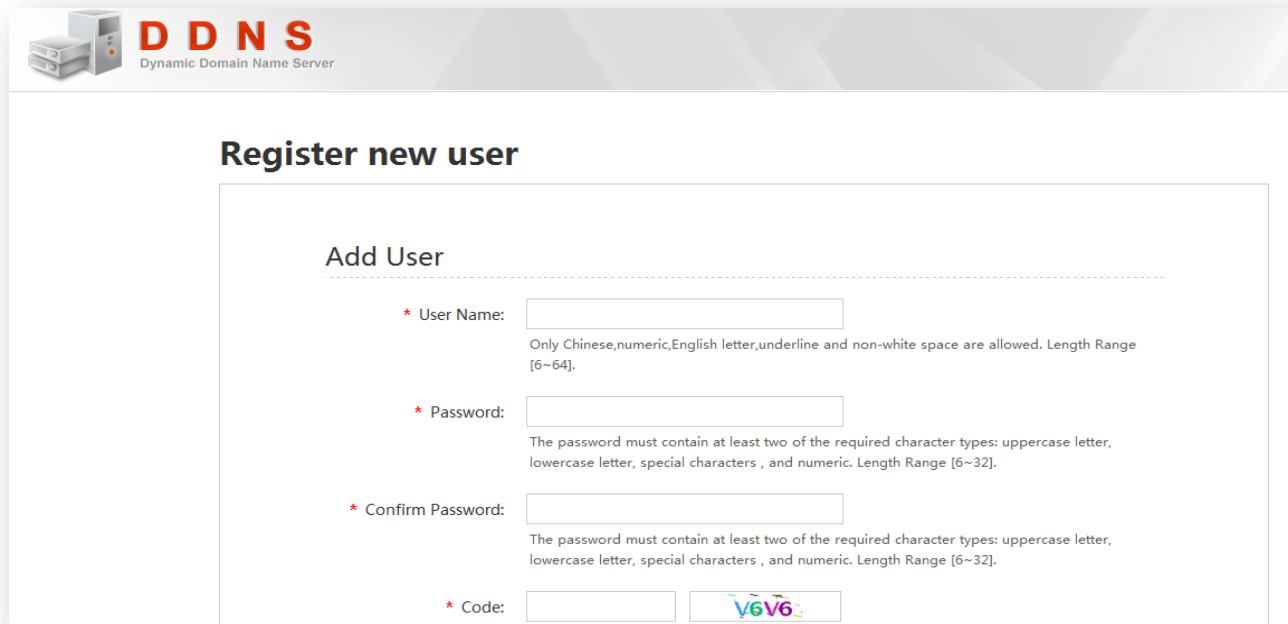


DDNS Management Platform

- HiDDNS supports web browser log-in, this is not required but recommended if you are managing multiple sites/systems for better DDNS management.
- DDNS log-in address: <http://www.hik-online.com>



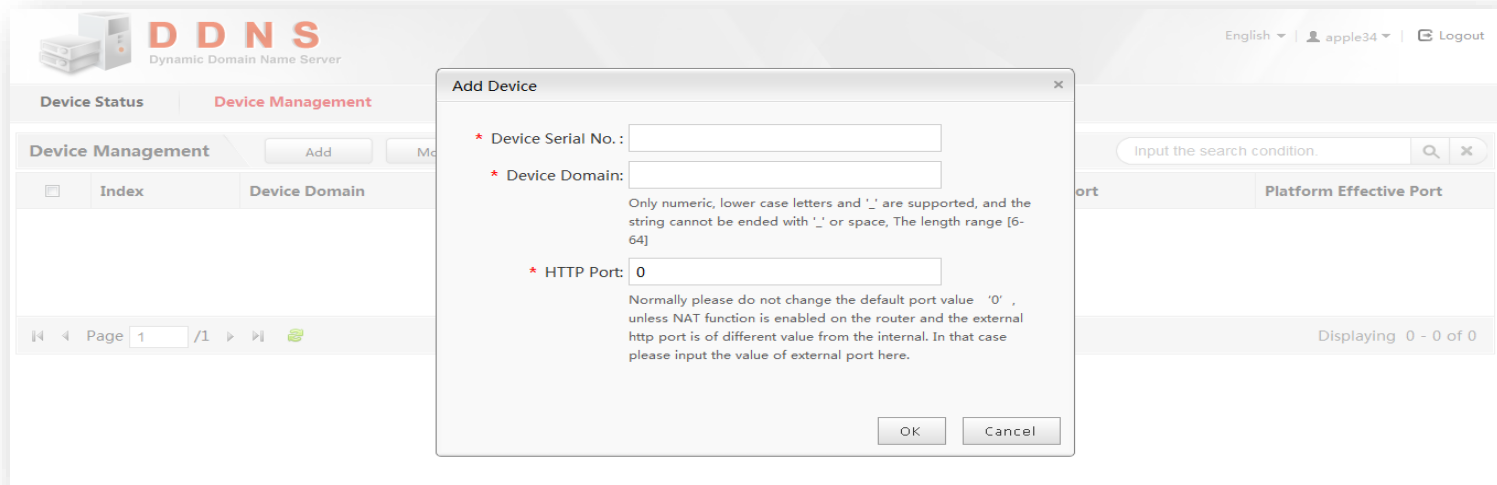
- Choose "Register New User" and fill in relevant information to complete the registration process.



The screenshot shows the DDNS registration interface. At the top left, there is an icon of server racks and the text "DDNS Dynamic Domain Name Server". The main heading is "Register new user". Below this is a section titled "Add User" with a dashed line separator. The form contains four fields:

- * User Name:** A text input field. Below it, the text reads: "Only Chinese,numeric,English letter,underline and non-white space are allowed. Length Range [6~64]."
- * Password:** A text input field. Below it, the text reads: "The password must contain at least two of the required character types: uppercase letter, lowercase letter, special characters , and numeric. Length Range [6~32]."
- * Confirm Password:** A text input field. Below it, the text reads: "The password must contain at least two of the required character types: uppercase letter, lowercase letter, special characters , and numeric. Length Range [6~32]."
- * Code:** A text input field next to a CAPTCHA image showing the characters "V6V6".

- After registration completes, log into the DDNS management platform
- Add your device in '**Device Management**' (You must manually add the device here. You devices will NOT automatically be added to your account.)
- Fill in device name, device serial No. and HTTP port
- Click OK
- NOTE: If HiDDNS is set up on the device, you do not need a Management Account to use it.



After adding the device, you can go to 'Device Status'.

The device status can now be seen:

- 'Device offline' will display if the device/site is not available;
- the device link URL is visible if it is online, and can be clicked to directly access to the device.

English | quzicheng | Logout

Device Status | Device Management

Device Status | Export | Input the search condition. [Search] [Close]

Index	Device Domain	Device Link URL	Device Serial No.	Dynamic IP	Port	Time of Creation	Time of last Conne...
1	lanway8888	http://cn.hik-online.com/lanway8888	406054256	122.96.178.69	80	2014-04-22 12:20:31	2015-02-27 16:57:48
2	qhdhjmqm	http://cn.hik-online.com/qhdhjmqm	421745035	120.6.219.29	81	2014-01-17 12:24:05	2015-02-28 08:27:19
3	lpdr12345	http://cn.hik-online.com/lpdr12345	426195104	125.111.158.106	30161	2013-07-16 11:51:57	2015-02-28 08:55:01
4	testz201516	Device offline + Diagnose	444979303	115.236.50.18	95	2014-06-05 08:40:38	2015-01-29 18:28:14
5	461704863	http://cn.hik-online.com/461704863	461704863	123.170.251.166	90	2014-05-07 10:50:07	2015-02-28 02:06:47

Page 1 / 1 | Displaying 1 - 5 of 5

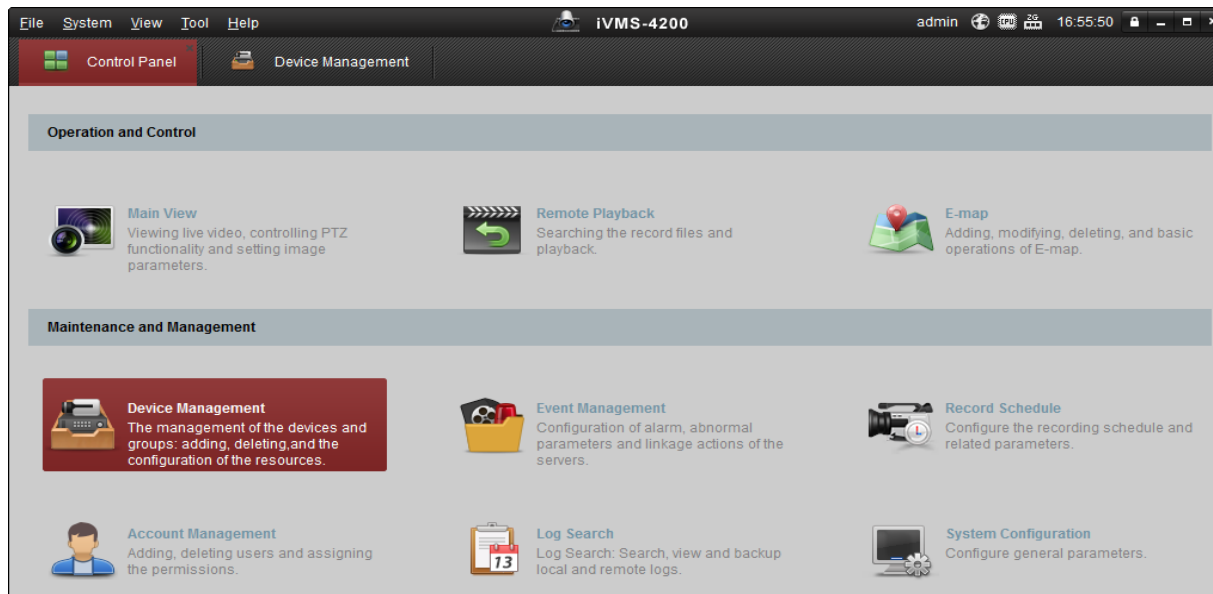
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Accessing Methods

Support IE, Firefox, Google Chrome, iVMS-4500, iVMS-4200 for accessing devices.

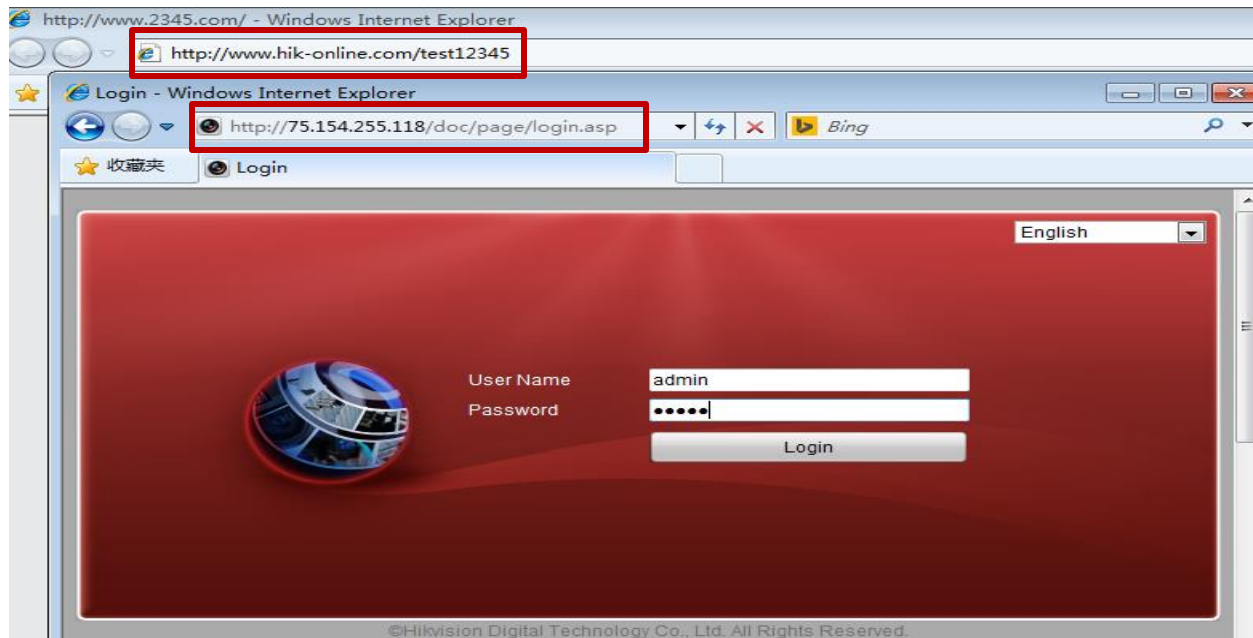


- iVMS-4200 Client Software
 - Add a device through Device Management and then you can use Remote Configuration to configure the device.



Accessing Methods

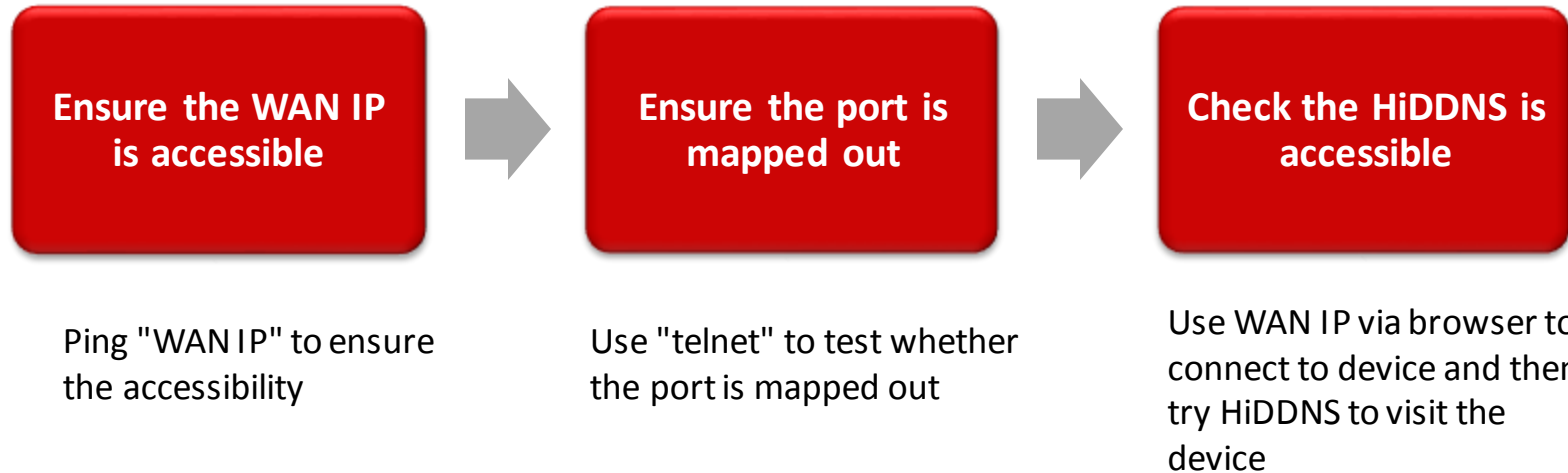
IE Browser Accessing using HiDDNS



Input domain name in IE browser directly, such as <http://www.hik-online.com/test12345> (HTTP port number is not required) you will then be automatically directed to the webpage showing the IP address

- **PC Network Access & DDNS**
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- Troubleshooting Accessing Remote Devices



You can use this website to test ports <http://www.yougetsignal.com/tools/open-ports/> or use Telnet from your computer

NOTE: Also refer to HiDDNS FAQ for more Troubleshooting information

- Requirements of Remote Device Access

Network configuration



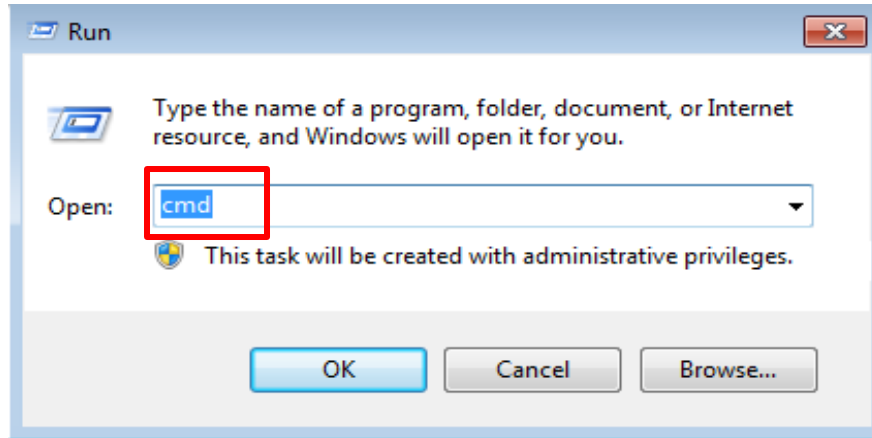
Port forwarding



Good network

How to use "ping" command

- Press "win+r" and input "cmd" in the dialog box
- Or go to Start Menu and type "cmd" into search box.



How to use "ping" command

- Type "Enter" and input "ping+ device IP" and press enter/return on keyboard; PC will communicate 4 times and obtain the network status of device
- e.g. ping 192.0.0.64
- If "Request timed out" is displayed – there is no network connection with the IP address/device – check your network; or the firewall is blocking the ping command.

```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
(c) 2009 Microsoft Corporation. All rights reserved.

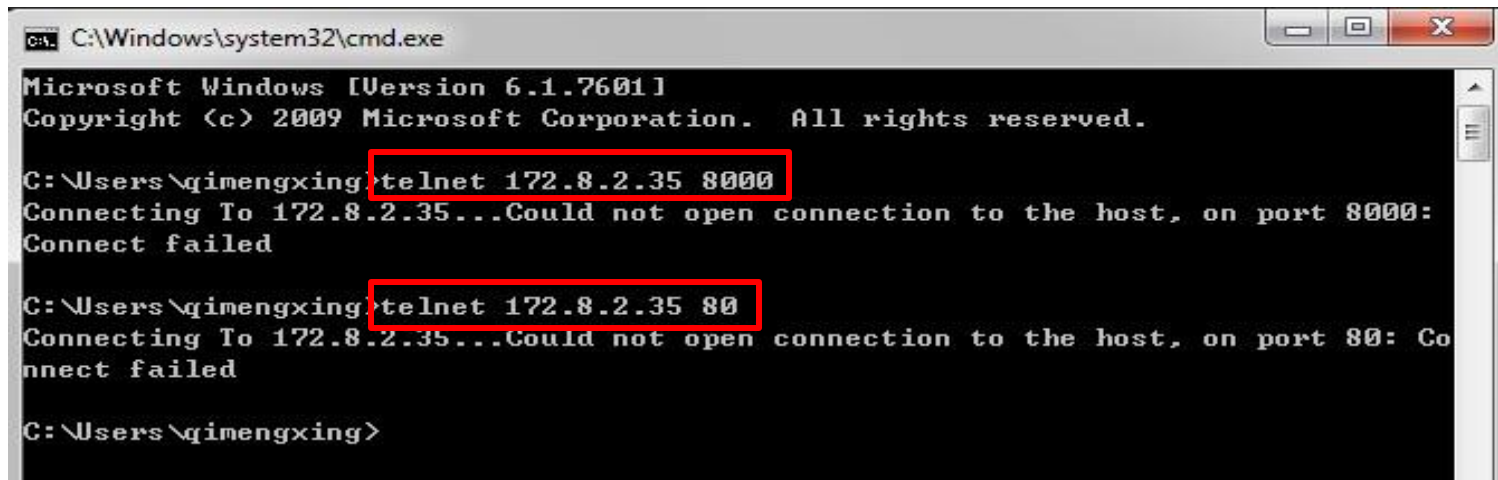
C:\Users\feuerui>ping 192.0.0.64

Pinging 192.0.0.64 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.0.0.64:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```


How to use Telnet Command

- Input “telnet+IP+port” and PC will start communicating and get status of device port
- Eg. “telnet 172.8.2.35 8000 ” and “telnet 172.8.2.35 80”, unavailable status is as follows



```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\qimengxing>telnet 172.8.2.35 8000
Connecting To 172.8.2.35...Could not open connection to the host, on port 8000:
Connect failed

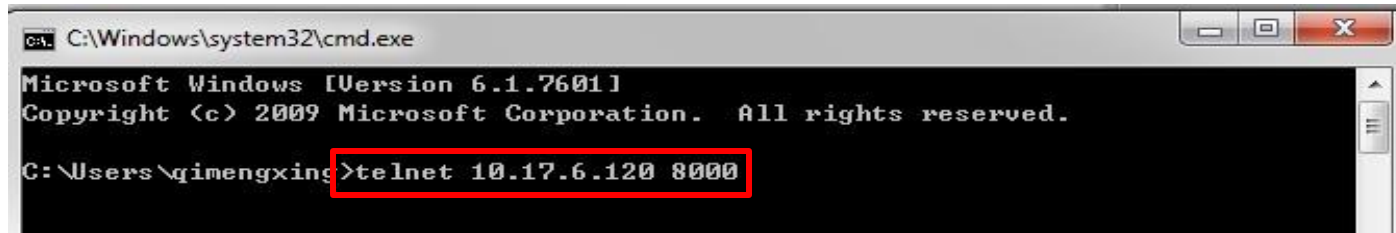
C:\Users\qimengxing>telnet 172.8.2.35 80
Connecting To 172.8.2.35...Could not open connection to the host, on port 80: Co
nnect failed

C:\Users\qimengxing>
```

NOTE: If your laptop does not have telnet enabled you can go to : Windows Control Panel - Program & Features – select Turn Windows Features On or Off and tick the box to enable Telnet Client

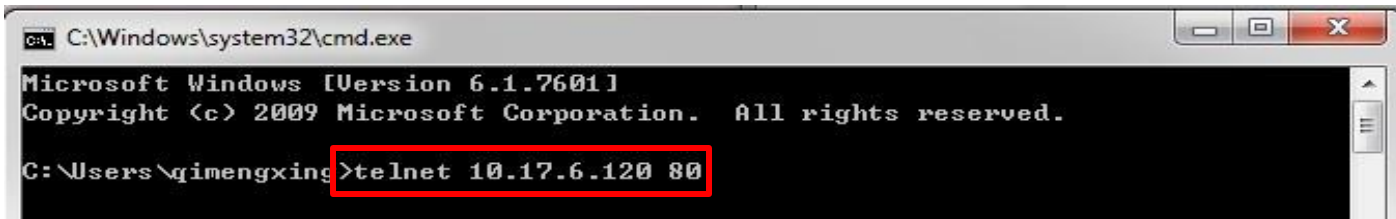
How to use Telnet Command

- Eg. "telnet 10.17.6.120 8000 " and "telnet 10.17.6.120 80"; normal accessibility is as below:



```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\qimengxing>telnet 10.17.6.120 8000
```



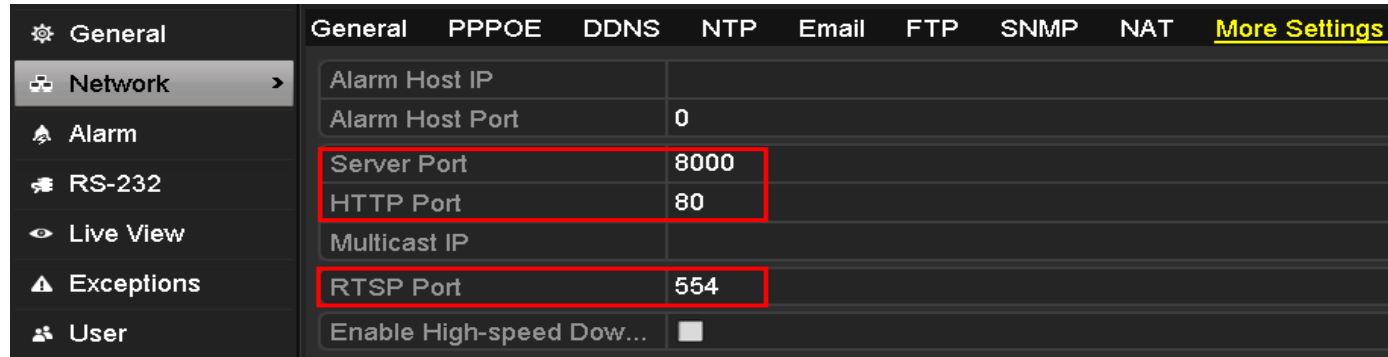
```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\qimengxing>telnet 10.17.6.120 80
```



```
C:\Telnet 10.17.6.120
```

Q: How to modify the port of a device ?

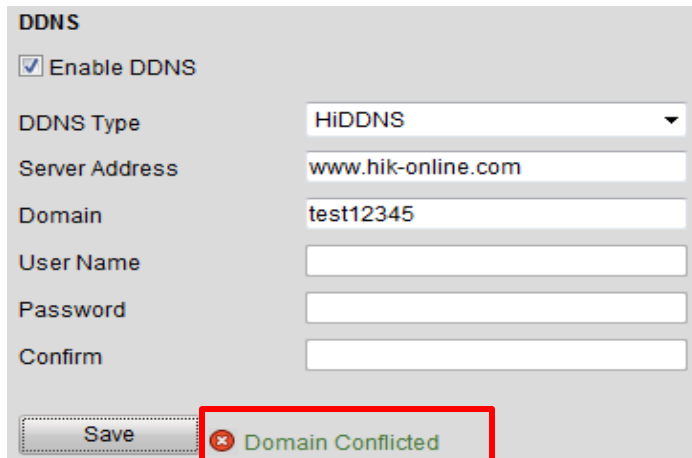


	General	PPPOE	DDNS	NTP	Email	FTP	SNMP	NAT	<u>More Settings</u>
General									
Network									
Alarm									
RS-232									
Live View									
Exceptions									
User									
	Alarm Host IP								
	Alarm Host Port	0							
	Server Port	8000							
	HTTP Port	80							
	Multicast IP								
	RTSP Port	554							
	Enable High-speed Dow...	<input type="checkbox"/>							

Menu → Configuration → Network Configuration → More Settings

Modify the server Port, HTTP Port and RTSP Port.

Q: What can go wrong when configuring DDNS ?



The screenshot shows a web interface for configuring DDNS. The title is "DDNS". There is a checked checkbox for "Enable DDNS". Below that, there are several input fields: "DDNS Type" is a dropdown menu set to "HiDDNS"; "Server Address" is a text box containing "www.hik-online.com"; "Domain" is a text box containing "test12345"; "User Name", "Password", and "Confirm" are empty text boxes. At the bottom left is a "Save" button. To the right of the "Save" button, a red-bordered box highlights a green error message: "Domain Conflicted".

1. Ensure the network settings are correct;
2. Menu → Configuration → Network → General and ensure the preferred DNS address is filled in correctly. (8.8.8.8 OR 8.8.4.4 is recommended.)
3. If the domain name is already taken, Domain Conflict will be displayed.

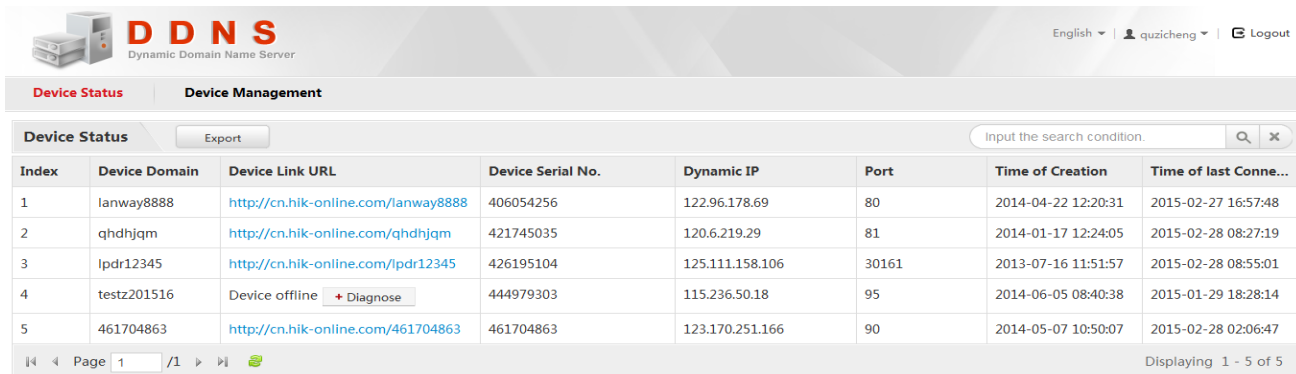
Q: I can see the device via IE, but not with client software ?

1. Ensure the 8000 port is mapped out (test with telnet);
2. Update client software.

Q: I can access the device via client software, but not from IE ?

1. Ensure the 80 port is mapped out (test with telnet);
2. Update IE Plugin.

Q: How can I check whether the device is online or offline ?



The screenshot shows the Hikvision DDNS (Dynamic Domain Name Server) interface. The page title is "DDNS Dynamic Domain Name Server". The user is logged in as "quzicheng" and the language is set to "English". The main navigation tabs are "Device Status" and "Device Management". The "Device Status" tab is active, showing a table of devices. The table has columns for Index, Device Domain, Device Link URL, Device Serial No., Dynamic IP, Port, Time of Creation, and Time of last Connection. The table contains 5 rows of data. The 4th row, with Device Domain "testz201516", shows the device as "Device offline" with a red plus icon and a "Diagnose" button. The bottom of the page shows a pagination bar indicating "Page 1 / 1" and "Displaying 1 - 5 of 5".

Index	Device Domain	Device Link URL	Device Serial No.	Dynamic IP	Port	Time of Creation	Time of last Conne...
1	lanway8888	http://cn.hik-online.com/lanway8888	406054256	122.96.178.69	80	2014-04-22 12:20:31	2015-02-27 16:57:48
2	qhdhjmqm	http://cn.hik-online.com/qhdhjmqm	421745035	120.6.219.29	81	2014-01-17 12:24:05	2015-02-28 08:27:19
3	lpdr12345	http://cn.hik-online.com/lpdr12345	426195104	125.111.158.106	30161	2013-07-16 11:51:57	2015-02-28 08:55:01
4	testz201516	Device offline + Diagnose	444979303	115.236.50.18	95	2014-06-05 08:40:38	2015-01-29 18:28:14
5	461704863	http://cn.hik-online.com/461704863	461704863	123.170.251.166	90	2014-05-07 10:50:07	2015-02-28 02:06:47

- Log in to www.hik-online.com and create a new account.
- Choose “Device Management” and add device (Device Name should be the same as domain name).
- Then enter “Device Status” to check the online status.

Q: When the device shows the URL link, but I still cannot access it?

Add Device

* Device Serial No. :

* Device Domain:

Only numeric, lower case letters and '_' are supported, and the string cannot be ended with '_' or space, The length range [6-64]

* HTTP Port:

Normally please do not change the default port value '0', unless NAT function is enabled on the router and the external http port is of different value from the internal. In that case please input the value of external port here.

OK Cancel

1. The dynamic IP obtained is not correct.
2. The port obtained is not correct. -> Enter “Device Management” and modify the port of device to the correct one.

Q: I am unable to register the device to web ?

1. HiDDNS does not support domain name starting with upper case letter,
2. Your Domain name must begin with lower-case letter, a~z, 0~9 and (-)

Q: Fail to live view the device through IE and client.

1. 554 port is occupied or RTSP is not mapped out
2. UPnP and manual port forwarding are used at the same time

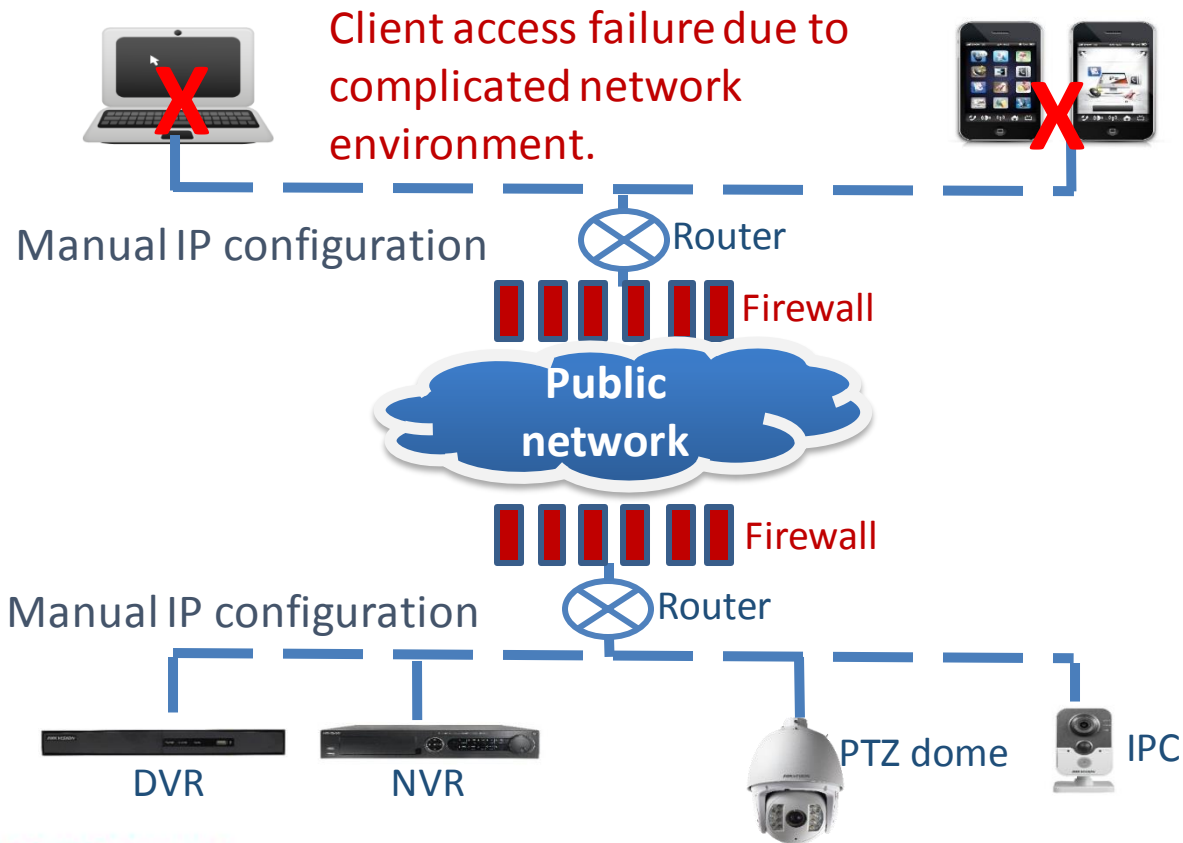
- **Q: Why can't I access the device on some networks ?**

For some network systems they will use complex network topology e.g VLAN (Virtual LAN) or VPN (Virtual Private Network). So you will not be able to make port-mapping successful.

Confirm if you have been issued with a WAN or LAN IP, and consult the Network Administrator for support.

- **PC Network Access & DDNS**
- **HIK-CONNECT Accessing**

Traditional video surveillance access



Hik-connect brings convenience



Browser



Cell phone

- Step 1: Download APP
- Step 2: Log in
- Step 3: Scan QR code



Hik-connect simplify network processing of client access.

DVR



NVR



PTZ dome



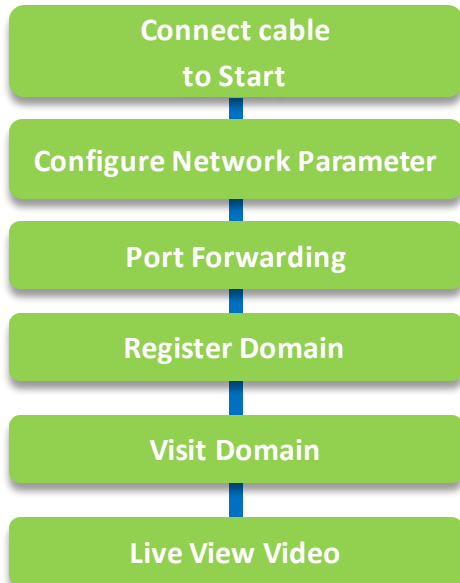
IPC



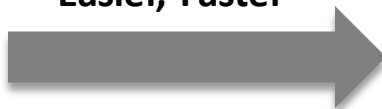
First Choice for Security Professionals

Traditional VS Hik-connect

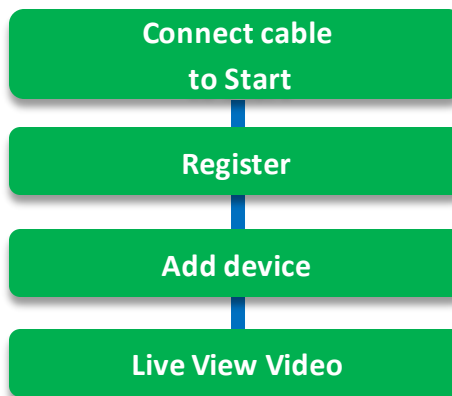
Domain access setup



Easier, Faster



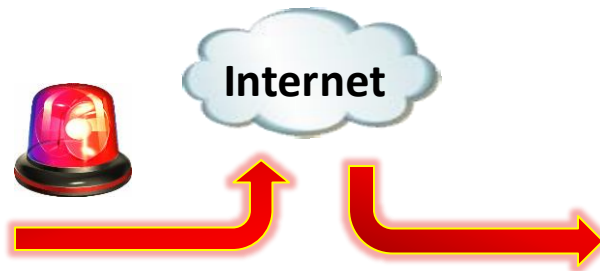
Hik-connect setup



- No port mapping configuration.
- Adopt private network penetration. As for the shortage of IPV4 address, traditional DDNS is not for all network anymore.

Real-time alarm push

- **Feature:**
 - Alarm message push to the mobile client.
- **Benefit:**
 - Get the spot scene at the first time so as to take emergency methods and reduce the loss of property.



Two-way audio

HIKVISION

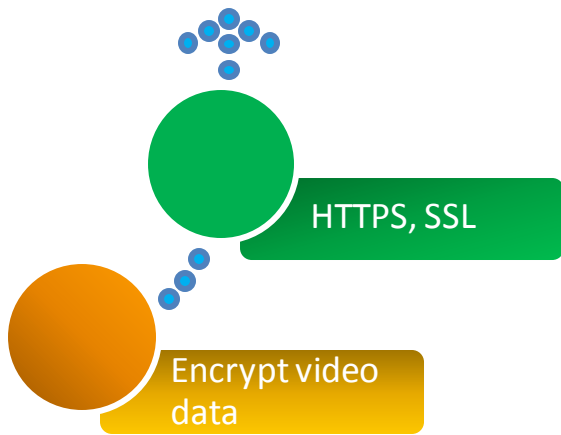


- With the high quality microphone and speaker built in the camera, you can talk with your family.

cameras, you can talk with your family.

Higher security transmission

- Access via HTTPS and SSL for secure transmission
 - Benefit: User's information is highly protected in case of network hacker.
- Encrypt video data for storage
 - Benefit: To prevent illegal peeping and protect user's privacy.



Hik-connect Total Solution

HIKVISION

IPC

DE series
PTZ dome

Back-end

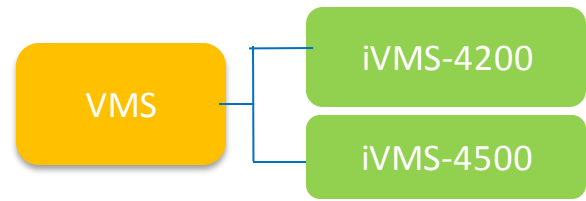
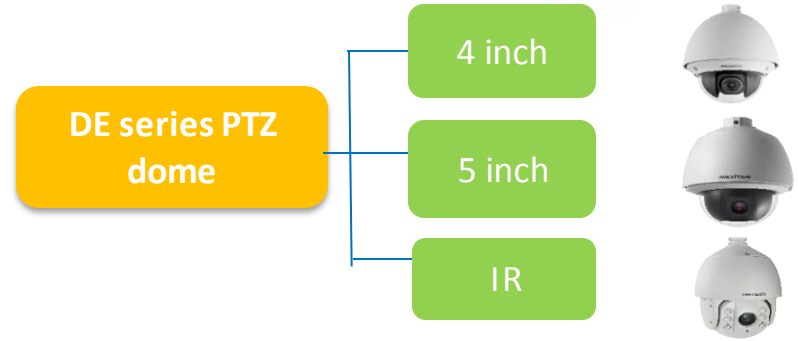
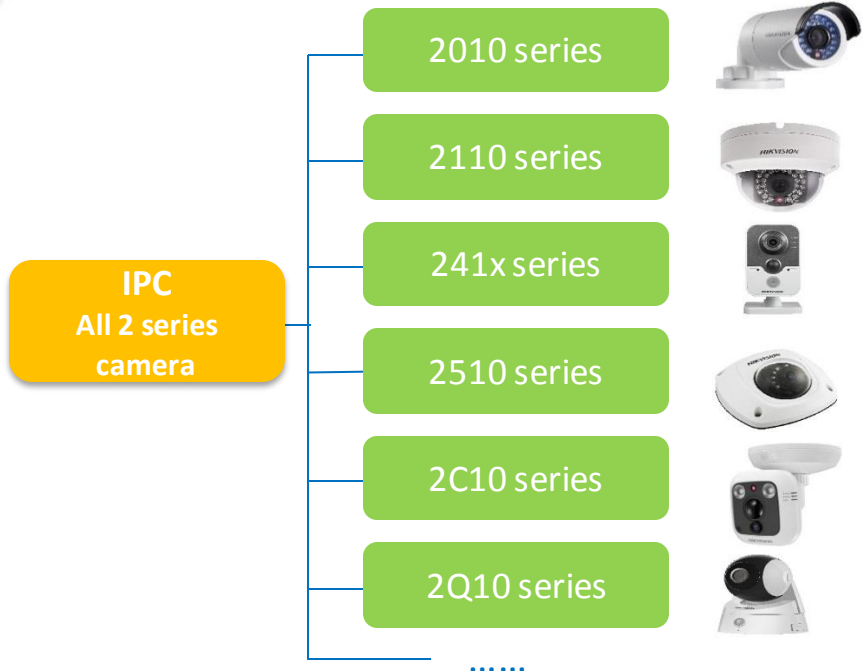
VMS



Hikvision provides a total solution to support Hik-connect service.

Product Showcase

HIKVISION



Others to be continued...

Others to be continued...

First Choice for Security Professionals