DIVAR IP 2000

DIP-2040EZ-00N, DIP-2042EZ-4HD, DIP-2042EZ-2HD

BOSCH

en Installation Manual

Table of contents

1 Safety precautions

Observe the safety precautions in this chapter.

1.1 General safety precautions

Follow these rules to ensure general safety:
- Keep the area around the system clean and free of clutter.
- Place the chassis top cover and any system components that have been removed away from the system or on a table so that they won't accidentally be stepped on.
- While working on the system, do not wear loose clothing such as neckties and unbuttoned shirt sleeves, which can come into contact with electrical circuits or be pulled into a cooling fan.
- Remove any jewelry or metal objects from your body, which are excellent metal conductors that can create short circuits and harm you if they come into contact with printed circuit boards or areas where power is present.

Warning!

Interruption of mains supply:

Voltage is applied as soon as the mains plug is inserted into the mains socket.

However, for devices with a mains switch, the device is only ready for operation when the mains switch (ON/OFF) is in the ON position. When the mains plug is pulled out of the socket, the supply of power to the device is completely interrupted.

Warning!

Removing the housing:

To avoid electric shock, the housing must only be removed by qualified service personnel.

Before removing the housing, the plug must always be removed from the mains socket and remain disconnected while the housing is removed. Servicing must only be carried out by qualified service personnel. The user must not carry out any repairs.

Warning!

Power cable and AC adapter:

When installing the product, use the provided or designated connection cables, power cables and AC adaptors. Using any other cables and adaptors could cause a malfunction or a fire. Electrical Appliance and Material Safety Law prohibits the use of UL or CSA-certified cables (that have UL/CSA shown on the code) for any other electrical devices.

Warning!

Lithium battery:

Batteries that have been inserted wrongly can cause an explosion. Always replace empty batteries with batteries of the same type or a similar type recommended by the manufacturer. Handle used batteries carefully. Do not damage the battery in any way. A damaged battery may release hazardous materials into the environment.

Dispose of empty batteries according to the manufacturer's instructions.

Warning!
Handling of lead solder materials used in this product may expose you to lead, a chemical known to the State of California to cause birth defects and other reproductive harm.

Notice!
Electrostatically sensitive device:
To avoid electrostatic discharges, the CMOS/MOSFET protection measures must be carried out correctly.
When handling electrostatically sensitive printed circuits, grounded anti-static wrist bands must be worn and the ESD safety precautions observed.

Notice!
Installation should only be carried out by qualified customer service personnel in accordance with the applicable electrical regulations.

Disposal
Your Bosch product has been developed and manufactured using high-quality materials and components that can be reused.
This symbol means that electronic and electrical devices that have reached the end of their working life must be disposed of separately from household waste.
In the EU, separate collecting systems are already in place for used electrical and electronic products. Please dispose of these devices at your local communal waste collection point or at a recycling center.

1.2   Electrical safety precautions

Basic electrical safety precautions should be followed to protect you from harm and the system from damage:

– Be aware of the locations of the power on/off switch on the chassis as well as the room's emergency power-off switch, disconnection switch or electrical outlet. If an electrical accident occurs, you can then quickly remove power from the system.

– Do not work alone when working with high voltage components.

– Power should always be disconnected from the system when removing or installing main system components, such as the motherboard or memory modules. When disconnecting power, you should first turn off the system and then unplug the power cords from all the power supply modules in the system.

– When working around exposed electrical circuits, another person who is familiar with the power-off controls should be nearby to switch off the power if necessary.

– Use only one hand when working with powered-on electrical equipment. This is to avoid making a complete circuit, which will cause electrical shock. Use extreme caution when using metal tools, which can easily damage any electrical components or circuit boards they come into contact with.

– The power supply power cords must include a grounding plug and must be plugged into grounded electrical outlets. The unit has more than one power supply cord. Disconnect both power supply cords before servicing to avoid electrical shock.

– Mainboard replaceable soldered-in fuses: Self-resetting PTC (Positive Temperature Coefficient) fuses on the mainboard must be replaced by trained service technicians only. The

new fuse must be the same or equivalent as the one replaced. Contact technical support for details and support.

Caution!

Mainboard Battery: There is a danger of explosion if the onboard battery is installed upside down, which will reverse its polarities. This battery must be replaced only with the same or an equivalent type recommended by the manufacturer (CR2032). Dispose of used batteries according to the manufacturer's instructions.

1.3   ESD precautions

Electrostatic Discharge (ESD) is generated by two objects with different electrical charges coming into contact with each other. An electrical discharge is created to neutralize this difference, which can damage electronic components and printed circuit boards. The following measures are generally sufficient to neutralize this difference before contact is made to protect your equipment from ESD:

–   Do not use mats designed to decrease electrostatic discharge as protection from electrical shock. Instead, use rubber mats that have been specifically designed as electrical insulators.

–   Use a grounded wrist strap designed to prevent static discharge.

–   Keep all components and printed circuit boards (PCBs) in their antistatic bags until ready for use.

–   Touch a grounded metal object before removing the board from the antistatic bag.

–   Do not let components or printed circuit boards come into contact with your clothing, which may retain a charge even if you are wearing a wrist strap.

– Handle a board by its edges only. Do not touch its components, peripheral chips, memory modules or contacts.
– When handling chips or modules, avoid touching their pins.
– Put the mainboard and peripherals back into their antistatic bags when not in use.
– For grounding purposes, make sure your computer chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the mainboard.

1.4 Operating precautions

The chassis cover must be in place when the system is operating to assure proper cooling. Out of warranty damage to the system can occur if this practice is not strictly followed.

Note:

Please handle used batteries carefully. Do not damage the battery in any way. A damaged battery may release hazardous materials into the environment. Do not discard a used battery in the garbage or a public landfill. Please comply with the regulations set up by your local hazardous waste management agency to dispose of your used battery properly.

2 Available documentation

This manual is available in different languages. You can find all manuals in the online product catalog.

Documentation for Bosch Security Systems products can be found as follows:

▶ Open any browser > enter www.boschsecurity.com > select your region and your country > start a search for your product > select the product in the search results to show the existing documents.

3   System overview

The DIVAR IP 2000 system is an affordable, easy to use all-in-one recording and management solution for network surveillance systems of up to 16 channels. All channels are pre-licensed. Running the full Bosch recording solution, DIVAR IP 2000 is an intelligent IP storage device that provides both, a professional video recording solution and ease of operation.

DIVAR IP 2000 is a 4-bay mini tower unit that combines advanced management and state-of-the-art recording management into a single cost-effective, plug and play IP recording appliance for IT-minded customers which are seeking for a "second generation" NVR recording solution.

DIVAR IP 2000 utilizes a highly energy efficient, embedded design at a very affordable price which nevertheless boasts Bosch quality through-and-through.

Easy to install and operate, DIVAR IP 2000 features wizard-based set-up and centralized configuration to reduce installation times. All components are pre-installed and pre-configured. Simply connect to the network and turn on the unit —
DIVAR IP 2000 is ready to begin recording straight out-of-the-box.

DIVAR IP 2000 features front-swappable SATA-II hard drives. All system software is pre-installed and pre-activated — creating a ready-to-use video recording appliance.

3.1   Device views

There are several LEDs on the front and rear of the chassis. The LEDs show the over-all status of the system and the activity and health of specific components.

Front view:

1	Lock for front cover	**4**	LAN activity LED
2	Power on/off LED	**5**	System status LED
3	Hard disk access LED	**6**	Individual hard disk LED

DIVAR IP rear view:
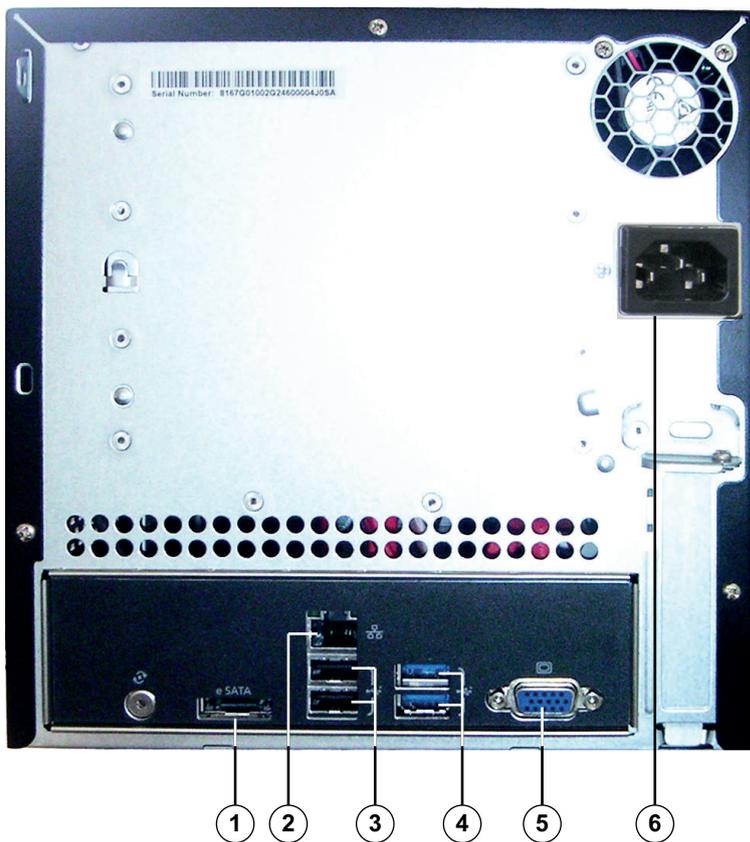
1	1x eSATA (not used)	4	2x USB 3.0 **Note:** Do not use.
2	1x Ethernet (RJ45)	5	1x VGA (monitor) **Note:** Only for troubleshooting.
3	2x USB 2.0 **Note:** Only for troubleshooting.	6	Mains connection 100 - 240 VAC

3.2 LED description - front panel

This chapter describes the LED displays on the front of the chassis.

LED indicator	LED color	LED state	Description
Power LED	N/A	Off	Power off
	Blue	On (default)	Working
HDD LED	N/A	Off	No disk access
	Blue	Blinking	Disk access
LAN LED	N/A	Off	Network disconnected
	Blue	On	Network connected
	Blue	Blinking	Network activity
System LED	N/A	Off	System has booted in normal operation.
	Blue	Blinking	System is booting or a software update is being applied.
	Red	On	Undefined software error. Contact technical support.
Individual hard disk LED	N/A	Off (default)	No hard drive configured for this bay.
	Blue	On	Hard drive present and working.

LED indicator	LED color	LED state	Description
	Blue	Blinking	Hard drive health not optimal — needs attention.
	Red	On	Hard drive is configured for this bay, but is not working.

3.3 LAN port LED description - rear panel

This chapter describes the LAN port LED on the rear of the chassis.

LAN connector:
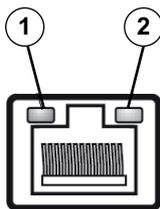
Nr.	LED indicator	LED color	LED state	NIC state
1	RJ45 LED (left)	N/A	Off	No connection or 10 Mb/s
		Green	On	100 Mb/s
		Yellow	On	1000 Mb/s
2	RJ45 LED (right)	Yellow	On	Active connection
		Yellow	Blinking	Transmit or receive activity

4 Chassis setup

This chapter covers the steps required to install components and perform maintenance on the chassis.

> **Caution!**
> Review the warnings and precautions listed in the manual before setting up or servicing this chassis.

Observe the following prerequisites when adding or replacing hard disks.

Prerequisites:
– DIVAR IP only supports an even number of hard disks (2 or 4)
– Bay 1 and bay 2 must be populated with hard disks
– All hard disks of the unit must have the same capacity

> **Notice!**
> Insert the hard disks before initial system start.

See also:
– *Safety precautions, page 4*
– *Installing a hard drive, page 17*

4.1 Removing hard drive trays

The drives are mounted in drive carriers to simplify their installation and removal from the chassis. These carriers also help promote proper airflow for the drive bays.

To remove hard drive trays from the chassis:
1. Turn off the system.
2. Press the release button on the drive carrier. This extends the drive carrier handle.
3. Use the handle to pull the drive carrier with the drive out of the chassis.

4. Insert the drive carrier with the new drive into the chassis bay, making sure that the drive carrier handle is completely closed.

> **Notice!**
> Except for short periods of time, do not operate the unit with the hard drives removed from the bays.

4.2 Installing a hard drive

The drives are mounted in drive carriers.

To install a hard drive to the hard drive carrier:
1. Remove the drive from the carrier.
2. Install a new drive into the carrier with the printed circuit board side facing down so that the mounting holes align with those in the carrier.
3. Replace the drive carrier into the chassis bay, making sure that the drive carrier handle is completely closed.

> **Notice!**
> We recommend using the respective Bosch hard disk drives. The hard disk drives as one of the critical component are carefully selected by Bosch based on available failure rates. HDD – not delivered from Bosch – are not supported. Information on supported HDDs can be found in the datasheet in the Bosch Online Product Catalog.

5 Installation - first steps

DIVAR IP systems are shipped with a pre-installed Configuration Wizard from factory.

5.1 Setup notes

By default all DIVAR IP systems are configured to obtain a valid network address from DHCP server in the local network. In small networks this task is usually performed by an internet router. If there is no DHCP server in the network, DIVAR IP will use the following network settings:

– IP Address: 192.168.0.200
– Subnet mask: 255.255.255.0

> **i**   **Notice!**
> We strongly recommend that you do not change any operating system settings. Operating system access should only be used for troubleshooting. Changes can result in malfunctioning of the system.

5.2 Connecting the unit

DIVAR IP system is ready to go out of the box. The application provides a simple to install and intuitive to use solution for network surveillance systems.

Connecting the unit:
1. Connect the unit and the cameras to the network.
2. Connect the unit to the power supply.
3. Turn on the unit.
   A series of scripts perform important setup tasks. This can take several minutes. Do not turn off the computer.
   Note: During this initial setup the system LED is blinking. After the system is ready for operation, the system LED stops blinking. The web based wizard pages of the DIVAR IP

can now be accessed from any browser within the network. Use this web page wizard pages to obtain a basic system configuration.

See also:
– *Device views, page 11*
– *Obtainging a basic configuration, page 20*

6   Obtainging a basic configuration

DIVAR IP 2000 offers an easy-to-use configuration wizard to obtain quickly a basic configuration of a smaller system.

To achieve a basic configuration using the Configuration Wizard:

1. Open a web browser from any PC in the network, enter the IP address of DIVAR IP in the address bar, then press ENTER. The **Welcome** page of the Configuration Wizard is displayed.

    Note:

    If you do not know the IP address, proceed as follows:

    –   Only one DIVAR IP 2000 is in the network:
        Enter `http://mydivar` or `https://mydivar`, then press ENTER. The **Welcome** page of the Configuration Wizard is displayed.
        !! Use `mydivar` only if there is one DIVAR IP in the same network, not if there are multiple DIVAR IP.!!

    –   Multiple DIVAR IP 2000 are in the same network:
        Use the IP Helper tool to display all devices with their IP addresses. The tool is available in the online catalog on the DIVAR IP 2000 product page.

2. On the **Welcome** page select your preferred language, then click **Start configuration**.

3. Run-through the wizard and follow the instructions. Each page provides you with information how to use it.

4. After finishing the Configuration Wizard your system has a basic configuration available. If the basic configuration needs to be extended, use the advanced configuration.

See also:

– *Using the IP Helper tool, page 29*
– *Advanced configuration, page 21*

7   Advanced configuration

The advanced configuration allows you to configure the system to your needs.

To use the advanced configuration:

1.   Open a web browser from any PC in the network.
2.   In the address bar of the web browser, enter `http://mydivar/configurationsite` or `http://<IP address of DIVAR IP>/configurationsite`, then press ENTER. The configuration is displayed.
     Note: If the DIVAR IP user interface is already open, click the **Configuration** tab.
3.   Select the desired page in the tree structure to the right where to make the changes.
     –   **Video devices page**
          Adding and removing devices
          Defining the motion detection settings
     –   **Recording page**
          Defining phases
          Assigning properties to phases
     –   **Alarms page**
          Defining scenarios
          Adding and deleting actions
          Configuring e-mail properties
     –   **Remote access page**
          Selecting a dynamic DNS provider
          Testing the connections to DIVAR IP 2000
     –   **System page**
          Creating accounts
          Defining the storage mode
          Setting password
          Setting time zone, date and time
          Selecting the language
          Maintaining the system
4.   Make the changes and save the configuration.

> **Notice!**
> Use the help that is available for each page.

See also:
– *Obtaining a basic configuration, page 20*
– *Monitoring the system, page 23*
– *Using the IP Helper tool, page 29*

8   Maintaining the system

8.1   Monitoring the system

DIVAR IP 2000 Dashboard is used to monitor the status of a
DIVAR IP 2000 system from any PC in the network.
DIVAR IP 2000 Dashboard provides information on the DIVAR IP
2000 system.
You cannot configure DIVAR IP 2000 with DIVAR IP 2000
Dashboard. To configure the system, use the Configuration
Wizard first to obtain a basic configuration, then (if necessary)
open the Configuration menu for advanced configuration.

To use DIVAR IP 2000 Dashboard:
1.   Open a web browser from any PC in the network.
2.   In the address bar of the web browser, enter `http://`
     `mydivar/dlacockpit` or `http://<IP address of DIVAR`
     `IP>/dlacockpit`, then press ENTER. The DIVAR IP 2000
     Dashboard is displayed.
     Note: If the DIVAR IP user interface is already open, click
     the **Dashboard** tab.
3.   Select the desired page in the tree structure to the right
     where to obtain system information.
     –   **System information page**
         Displays status and hard drive information (for
         example, number of cameras, hard drive status).
     –   **Logbook page**
         Displays logbook information.
     –   **Device monitor page**
         Displays all connected devices.
         Offers a **Update manually...** button to update the
         system software.

> **i**   **Notice!**
> Use the help that is available for each page.

See also:

– *Obtainging a basic configuration, page 20*
– *Advanced configuration, page 21*

8.2 Recovering the unit

Following procedure describes how to restore the factory default image.

> **i** **Notice!**
>
> Before recovering DIVAR IP we recommend backing up the configuration.

To restore the unit to factory default image

1. Start the unit and press **F7** during the BIOS power-on-self-test.
   The Recovery menu is displayed.

> **i** **Notice!**
>
> Make sure that a VGA monitor, a keyboard and a mouse are connected to the unit.

2. Select one of the following:
   – **Initial to factory image (all data will be deleted)**
     (restores to factory default image and deletes all data on the HDDs)
     or
   – **Restore to Factory image (all data will not be deleted)**
     (restores to factory default image; data on the HDDs will not be deleted)
   Note:
   Windows performs the setup. The screen displays the percentage of the process.

> **Notice!**
> Do not turn off the unit during the process. This will damage the Recovery media.

3. The unit starts from the Recovery media. If the setup is successful, press **Yes** to restart the system.
4. Windows performs the initial setup of the operating system. The unit restarts after Windows has completed the setup.
5. After the restart of the unit, the factory settings are installed.

See also:
– *Backing up the configuration, page 25*

8.3 Backing up the configuration

Following procedure describes how to back up the configuration.

> **Notice!**
> We recommend backing up the configuration frequently so that recent backups are always available if required.

To back up the configuration:
1. In the DIVAR IP configuration, expand **System**, then click **Service**.
2. To back up the configuration, click **Back up**. A dialog box is displayed.
3. Click **Save**. Where the configuration is saved depends on the browser settings.
   Note: If you want to select a specific target directory for the backup file, click the arrow to the right of the **Save** button, then click **Save as**.
4. To find the backup, click the Windows **Start** button, enter `downloads` in the search box, then press ENTER.
   A dialog box containing the backup file is displayed.

8.4   Adding/replacing hard disks

Observe the following prerequisites when adding or replacing hard disks.

Prerequisites:
–   DIVAR IP only supports an even number of hard disks (2 or 4)
–   Bay 1 and bay 2 must be populated with hard disks
–   All hard disks of the unit must have the same capacity

> **i** **Notice!**
> Insert the hard disks before initial system start.

8.4.1   Extending a 2-disk unit

You can extend a 2-disk unit with 2 additional hard disks.

To add hard disks to a 2-disk unit:
1.   Turn off the unit by pressing the power button.
2.   Insert the new hard disks into the chassis bay, making sure that the drive carrier handle is completely closed.
3.   Turn on the unit by pressing the power button.
4.   Open DIVAR IP Dashboard with any browser. To do this, in the address bar of the web browser, enter `http://mydivar/dlacockpit` or `http://<IP address of DIVAR IP>/dlacockpit`, then press ENTER. DIVAR IP 2000 Dashboard displays the message that you must open **Configuration** > **Disk management** for configuration.
5.   Click **Configuration** to open the configuration.
6.   Expand **System**, then click **Disk management**.
7.   To add the storage capacity of the hard disks to the system, follow the instructions that are displayed.
8.   After finishing the hard disk setup the individual disk status LED to the right of the disk carrier will turn blue.

See also:
– *Chassis setup, page 16*

8.4.2 Extending an empty unit

You can extend an empty unit with 2 or 4 additional hard disks.

To add hard disks to an empty unit:
1. Insert the new hard disks into the chassis bay, making sure that the drive carrier handle is completely closed.
2. Turn on the unit by pressing the power button.
3. The unit identifies the hard disks as new and starts the recovery menu automatically.
   After finishing the recovery process the DIVAR IP software is installed. The individual disk status LED to the right of the disk carrier will turn blue.
4. Perform a basic configuration using the configuration wizard.

See also:
– *Chassis setup, page 16*
– *Obtainging a basic configuration, page 20*

8.4.3 Replacing hard disks

If a hard disk fails, the individual disk status LED to the right of the disk carrier will turn red.

To replace hard disks:
1. Remove the defective hard disk. Use the handle to pull the disk carrier out of the chassis.
   Note: You can remove the hard disk during operation.
2. Turn off the unit by pressing the power button.
3. Insert the new hard disks into the chassis bay, making sure that the drive carrier handle is completely closed.
4. Turn on the unit by pressing the power button.
5. Open DIVAR IP Dashboard with any browser. To do this, in the address bar of the web browser, enter `http://mydivar/dlacockpit` or `http://<IP address of DIVAR`

IP>/dlacockpit, then press ENTER. DIVAR IP 2000
Dashboard displays the message that you must open
Configuration > **Disk management** for configuration.
6.   Click **Configuration** to open the configuration.
7.   Expand **System**, then click **Disk management**.
8.   To add the storage capacity of the hard disks to the system, follow the instructions that are displayed.
9.   After finishing the hard disk setup the individual disk status LED to the right of the disk carrier will turn blue.

See also:
–   *Chassis setup, page 16*

8.5   Updating the system

Following procedure describes how to update the system manually.

To update DIVAR IP manually:
1.   In DIVAR IP Dashboard, click **Device monitor** in the tree structure.
2.   Click **Update manually**.
A dialog box is displayed where you can browse for the update file.

Notice!

If your system is connected to the internet, the system is automatically checking for updates. If an update is available, you can download and install it directly. If your system is not connected to the internet, you can manually download the latest update package from the product pages. Updating your system includes all components as well as camera devices. Updating will take about 5 - 10 minutes and recodings are stopped during the update process.

8.6   Using the IP Helper tool

The IP Helper from Bosch is a small windows tool that allows users to view all IP devices with their IP addresses located in a network. With this tool user can find IP addresses of IP devices or configure the network settings of the IP devices in a quick and easy way without having expert knowledge. The IP Helper is a directly executable program, no installation is necessary. You can use any PC in the network to open IP Helper. Opening IP Helper directly from a USB stick is possible.

The IP Helper tool is available for download as follows:
– in the online catalog on the DIVAR IP 2000 product page
– under http://mydivar.com

To find DIVAR IP systems:
1. Double-click the IP Helper tool (`iphelper.exe`).
2. A dialog box opens that displays all IP devices with their IP addresses located in the network. Search for the DIVAR IP system you want to configure and note the IP address.
   Note: To identify a DIVAR IP system, press **Blink LED**.

9   End-user license agreement (EULA)

This chapter informs you about the Microsoft License Terms for Microsoft Windows Storage Server 2008 R2 Standard.
Please read the following pages carefully.

MICROSOFT SOFTWARE LICENSE TERMS

MICROSOFT WINDOWS STORAGE SERVER 2008 R2 STANDARD

These license terms are an agreement between you and

- the server manufacturer that distributes the software with the server; or

- the software installer that distributes the software with the server.

Please read them. They apply to the software named above, which includes the media on which you received it, if any. Printed paper license terms, which may come with the software, take place of any on-screen license terms. The terms also apply to any Microsoft

- updates,

- supplements,

- Internet-based services, and

- support services

for this software, unless other terms accompany those items. If so, those terms apply. If you obtain updates or supplements directly from Microsoft, Microsoft, and not the manufacturer or installer, licenses those to you.

By using the software, you accept these terms. If you do not accept them, do not use the software. Instead, contact the manufacturer or installer to determine its return policy for a refund or credit.

As described below, using the software also operates as your consent to the transmission of certain computer information during activation, validation and for Internet-based services.

If you comply with these license terms, you have the rights below for each software license you acquire.

1. **OVERVIEW.**

   a. **Software.** The software includes

      - server software; and

      - additional software that may only be used with the server software directly, or indirectly through other additional software.

   b. **License Model.** The software is licensed based on

      - the number of instances of server software that you run.

   c. **Licensing Terminology.**

      - **Instance.** You create an "instance" of software by executing the software's setup or install procedure. You also create an instance of software by duplicating an existing instance. References to software in this agreement include "instances" of the software.

      - **Run an Instance.** You "run an instance" of software by loading it into memory and executing one or more of its instructions. Once running, an instance is considered to be running (whether or not its instructions continue to execute) until it is removed from memory.

      - **Operating System Environment.** An "operating system environment" is

        - all or part of an operating system instance, or all or part of a virtual (or otherwise emulated) operating system instance which enables separate machine identity (primary computer name or similar unique identifier) or separate administrative rights, and

        - instances of applications, if any, configured to run on the operating system instance or parts identified above.

        There are two types of operating system environments, physical and virtual. A physical operating system environment is configured to run directly on a physical hardware system. The operating system instance used to run hardware virtualization software (e.g. Microsoft Virtual Server or similar technologies) or to provide hardware virtualization services (e.g. Microsoft virtualization technology or similar technologies) is considered part of the physical operating

system environment. A virtual operating system environment is configured to run on a virtual (or otherwise emulated) hardware system. A physical hardware system can have either or both of the following:

- one physical operating system environment
- one or more virtual operating system environments.

- **Server.** A server is a physical hardware system capable of running server software. A hardware partition or blade is considered to be a separate physical hardware system.

- **Assigning a License.** To assign a license means simply to designate that license to one server or user.

2. **USE RIGHTS.**

a. **Assignment of the License to the Server.** The software license is permanently assigned to the server with which you acquired the software. If you run the software on a hardware partition, that partition is the server to which the license must be assigned. That server is the licensed server for that particular license. You may assign other software licenses to the same server, but you may not assign the same license to more than one server.

b. **Running Instances of the Server Software.**

i. You may run, at any one time, one instance of the server software in one physical and one virtual operating system environment on the licensed server.

ii. If you run both permitted instances at the same time, the instance of the server software running in the physical operating system environment may be used only to:
   - run hardware virtualization software
   - provide hardware virtualization services
   - run software to manage and service operating system environments on the licensed server.

c. **Running Instances of the Additional Software.** You may run or otherwise use any number of instances of additional software listed below in physical or virtual operating system environments on any number of servers. You may use additional software only with the server software directly, or indirectly through other additional software.

- AD Migration Tool
- FRS Monitoring Tools
- Remote Desktop Connection Client
- RSAT Client

d. **Creating and Storing Instances on Your Servers or Storage Media.** You have the additional rights below for each software license you acquire.

- You may create any number of instances of the server software and additional software.
- You may store instances of the server software and additional software on any of your servers or storage media.
- You may create and store instances of the server software and additional software solely to exercise your right to run instances of the server software under any of your software licenses as described (e.g., you may not distribute instances to third parties).

e. **Included Microsoft Programs.** The software contains other Microsoft programs. These license terms apply to your use of those programs.

f. **Font Components**. While the software is running, you may use its fonts to display and print content. You may only
   - embed fonts in content as permitted by the embedding restrictions in the fonts; and
   - temporarily download them to a printer or other output device to print content.

g. **Icons, images and sounds**. While the software is running, you may use but not share its icons, images, sounds, and media.

3. ADDITIONAL LICENSING REQUIREMENTS AND/OR USE RIGHTS.

a. Specific Use. The manufacturer or installer designed this server for a specific use. You may only use the software for that use.

You may not use the software to support additional software programs or functions, other than utilities or similar software used solely for administration, performance enhancement, preventative maintenance, or to provide complimentary data storage functionality for this server.

b. Software Use Limits. You are not licensed to use any of the following functions of the server software:

i. Active Directory. You may not use of the server software as a domain controller or any other use of DCPromo.exe.

ii. Network Infrastructure Services. You may not use any functions of the server software necessary to support a server network infrastructure. For example, you may not use Routing and Remote Access Service (RRAS), Windows Internet Name Service (WINS), or. You may, however, use the Dynamic Host Configuration Protocol (DHCP), Domain Name System (DNS), and Read Only Domain Controller (RODC) server functions and any network infrastructure client functions, such as DNS or DHCP clients.

iii. Terminal Services. This function enables servers to use server software, or other software used with the server software to provide similar services. Terminal Services may be used only to the extent required to manage the server Software in Remote Administration Mode.

iv. Network Load Balancing Services.

v. Server Roles. You may not use of the following features or functions:

- Active Directory Certificate Services
- Active Directory Domain Services
- Active Directory Federation Services
- Active Directory Management Services
- Application Server
- Network Policy and Access Services
- UDDI Services
- Windows Deployment Services

c. Limitation on Functions Supported by the Software. The manufacturer or installer licenses you to use the server software to support only the base functions as provided and installed on this server. You are not licensed to use the server to run or support

i. enterprise database software (such as Microsoft SQL Server), except non-enterprise engines such as Microsoft SQL Server 2008 Express Edition. The server software also may run or support enterprise database engines (including Microsoft SQL Server) that are integrated in and used only to support the server software as part of the specific use for which the manufacturer or installer designed this server,

ii. enterprise resource planning (ERP) software,

iii. messaging or enterprise mail,

iv. Microsoft Exchange or Microsoft SharePoint Portal Server,

v. team collaboration software, and/or

vi. web-based time management applications that address appointment, meeting and other calendar items.

These limitations do not restrict use of the server for data management (such as providing storage and backup functions) for the software identified above.

d. No Windows Server CALs Required. Servers that access or use functions of Windows Storage Server software licensed under these license terms do not require a client access license (CAL). Obtaining a CAL for any Microsoft product does not grant you rights to use functions of the server software not licensed under these license terms.

e. **Windows Server 2008 R2 Rights Management Services Access.** You must acquire a Windows Server 2008 Rights Management Services CAL for each user account through which a user directly or indirectly accesses the Windows Server 2008 R2 Rights Management Services functionality.

4. MANDATORY ACTIVATION

Activation associates the use of the software with a specific server. During activation, the software will send information about the software and the server to Microsoft. This information includes the version, language and product key of the software, the Internet protocol address of the server, and information derived from the hardware configuration of the server. **The manufacturer or installer should have activated the software for you.** For more information, see http://www.microsoft.com/piracy/mpa.aspx. By using the software, you consent to the transmission of this information. If the server is connected to the Internet, the software may automatically connect to Microsoft for activation. You can also activate the software manually by Internet or telephone. If you do so, Internet and telephone service charges may apply. Some changes to your computer components or the software may require you to reactivate the software.

5. VALIDATION

a. **If the manufacturer or installer activated the software for you, you may not be asked to activate the software when you first use it. The software will from time to time validate the software, update or require download of the validation feature of the software. Validation verifies that the software has been activated and is properly licensed. Validation also permits you to use certain features of the software or to obtain additional benefits. For more information, see http://go.microsoft.com/fwlink/?linkid=39157.**

b. During a validation check, the software will send information about the software and the server to Microsoft. This information includes the version and product key of the software, and the Internet protocol address of the server. Microsoft does not use the information to identify or contact you. By using the software, you consent to the transmission of this information. For more information about validation and what is sent during a validation check, see http://go.microsoft.com/fwlink/?linkid=69500.

c. If, after a validation check, the software is found not to be properly licensed, the functionality of the software may be affected. For example, you may

- need to reactivate the software, or

- receive reminders to obtain a properly licensed copy of the software,

or you may not be able to

- use or continue to use some of the features of the software, or

- obtain certain updates or upgrades from Microsoft.

d. You may only obtain updates or upgrades for the software from Microsoft or authorized sources. For more information on obtaining updates from authorized sources see http://go.microsoft.com/fwlink/?linkid=69502.

6. INTERNET-BASED SERVICES. Microsoft provides Internet-based services with the software. Microsoft may change or cancel them at any time.

a. **Consent for Internet-Based Services**. The software features described below connect to Microsoft or service provider computer systems over the Internet. In some cases, you will not receive a separate notice when they connect. You may switch off these features or not use them. For more information about these features, visit http://go.microsoft.com/fwlink/?linkid=34493. **By using these features, you consent to the transmission of this information.** Microsoft does not use the information to identify or contact you.

b. **Computer Information**. The following features use Internet protocols, which send to the appropriate systems computer information, such as your Internet protocol address, the type of operating system, browser and name and version of the software you are using, and the language code of the server where you installed the software. Microsoft uses this information to make the Internet-based services available to you.

- Windows Update Feature. You may connect new hardware to the server when you run the software. Your server may not have the drivers needed to communicate with that hardware. If so, the update feature of the software can obtain the correct driver from Microsoft and run it on your server. You can switch off this update feature.

- Web Content Features. Features in the software can retrieve related content from Microsoft and provide it to you. To provide the content, these features send to Microsoft the type of operating system, name and version of the software you are using, type of browser and language code of the server where you run the software. Examples of these features are clip art, templates, online training, online assistance and Appshelp. You may choose not to use these web content features.

- Digital Certificates. The software uses digital certificates. These digital certificates confirm the identity of Internet users sending X.509 standard encrypted information. The software retrieves certificates and updates certificate revocation lists. These security features operate only when you use the Internet.

- Auto Root Update. The Auto Root Update feature updates the list of trusted certificate authorities. You can switch off the Auto Root Update feature.

- Windows Media Digital Rights Management. Content owners use Windows Media digital rights management technology (WMDRM) to protect their intellectual property, including copyrights. This software and third party software use WMDRM to play and copy WMDRM-protected content. If the software fails to protect the content, content owners may ask Microsoft to revoke the software's ability to use WMDRM to play or copy protected content. Revocation does not affect other content. When you download licenses for protected content, you agree that Microsoft may include a revocation list with the licenses. Content owners may require you to upgrade WMDRM to access their content. Microsoft software that includes WMDRM will ask for your consent prior to the upgrade. If you decline an upgrade, you will not be able to access content that requires the upgrade. You may switch off WMDRM features that access the Internet. When these features are off, you can still play content for which you have a valid license.

- Windows Media Player. When you use Windows Media Player, it checks with Microsoft for
  - compatible online music services in your region;
  - new versions of the player; and
  - codecs if your server does not have the correct ones for playing content.

  You can switch off this last feature. For more information, go to http://www.microsoft.com/windows/windowsmedia/player/11/privacy.aspx

- Malicious Software Removal/Clean On Upgrade. Before installation of the software, the software will check and remove certain malicious software listed at http://www.support.microsoft.com/?kbid=890830 ("Malware") from your server. When the software checks your server for Malware, a report will be sent to Microsoft about any Malware detected or errors that occurred while the software was checking for Malware. No information that can be used to identify you is included in the report. You may disable the software's Malware reporting functionality by following the instructions found at http://www.support.microsoft.com/?kbid=890830.

- Network Connectivity Status Icon. This feature determines whether a system is connected to a network by either passive monitoring of network traffic or active DNS or HTTP queries. The query only transfers standard TCP/IP or DNS information for routing purposes. You can switch off the active query feature through a registry setting.

- Windows Time Service. This service synchronizes with time.windows.com once a week to provide your computer with the correct time. You can turn this feature off or choose your preferred time source within the Date and Time Control Panel applet. The connection uses standard NTP protocol.

- IPv6 Network Address Translation (NAT) Traversal service (Teredo). This feature helps existing home Internet gateway servers transition to IPv6. IPv6 is a next generation Internet protocol.

It helps enable end-to-end connectivity often needed by peer-to-peer applications. To do so, each time you start up the software the Teredo client service will attempt to locate a public Teredo Internet service. It does so by sending a query over the Internet. This query only transfers standard Domain Name Service information to determine if your computer is connected to the Internet and can locate a public Teredo service. If you

- use an application (e.g. Windows Meeting Space) that needs IPv6 connectivity or

- configure your firewall to always enable IPv6 connectivity

by default standard Internet Protocol information will be sent to the Teredo service at Microsoft at regular intervals. No other information is sent to Microsoft. You can change this default to use non-Microsoft servers. You can also switch off this feature using a command line utility named "netsh".

- Windows Rights Management Services. The software contains a feature that allows you to create content that cannot be printed, copied or sent to others without your permission. You must connect to Microsoft to use this feature for the first time. Once a year, you must re-connect to Microsoft to update it. For more information, go to http://go.microsoft.com/fwlink/?LinkId=52646. You may choose not to use this feature.

c. **Use of Information**. Microsoft may use the computer information, error reports, and Malware reports to improve our software and services. We may also share it with others, such as hardware and software vendors. They may use the information to improve how their products run with Microsoft software.

d. **Misuse of Internet-based Services**. You may not use these services in any way that could harm them or impair anyone else's use of them. You may not use the services to try to gain unauthorized access to any service, data, account or network by any means.

7. **DATA STORAGE TECHNOLOGY.** The server software includes data storage technology called Windows Internal Database. Components of the server software use this technology to store data. You may not otherwise use or access this technology under this agreement.

8. **BENCHMARK TESTING**. The software includes one or more components of the .NET Framework (".NET Components"). You may conduct internal benchmark testing of those components. You may disclose the results of any benchmark test of those components, provided that you comply with the conditions set forth at http://go.microsoft.com/fwlink/?LinkID=66406. Notwithstanding any other agreement you may have with Microsoft, if you disclose such benchmark test results, Microsoft shall have the right to disclose the results of benchmark tests it conducts of your products that compete with the applicable .NET Component, provided it complies with the same conditions set forth at http://go.microsoft.com/fwlink/?LinkID=66406.

9. **SCOPE OF LICENSE**. The software is licensed, not sold. This agreement only gives you some rights to use the software. The manufacturer or installer and Microsoft reserve all other rights. Unless applicable law gives you more rights despite this limitation, you may use the software only as expressly permitted in this agreement. In doing so, you must comply with any technical limitations in the software that allow you to use it only in certain ways. For more information, see the software documentation or contact the manufacturer or installer. Except and only to the extent permitted by applicable law despite these limitations, you may not:

- work around any technical limitations in the software;

- reverse engineer, decompile or disassemble the software;

- make more copies of the software than specified in this agreement;

- publish the software for others to copy;

- rent, lease or lend the software; or

- use the software for commercial software hosting services.

Except as expressly provided in this agreement, rights to access the software on this server do not give you any right to implement Microsoft patents or other Microsoft intellectual property in software or devices that access this server.

You may use remote access technologies in the software such as Remote Desktop to access the software remotely from another device. You are responsible for obtaining any licenses required for use of these protocols to access other software.

10.**BACKUP COPY**. You may make one backup copy of the software media. . You may only restore the backup image to the same server from which the backup was created. You may use it only to create instances of the software.

11.**DOCUMENTATION.** Any person that has valid access to your computer or internal network may copy and use the documentation for your internal, reference purposes.

12.**NOTICE ABOUT THE MPEG-4 VISUAL STANDARD.** This software includes MPEG-4 visual decoding technology. This technology is a format for data compression of video information. MPEG LA, L.L.C. requires this notice:

USE OF THIS PRODUCT IN ANY MANNER THAT COMPLIES WITH THE MPEG 4 VISUAL STANDARD IS PROHIBITED, EXCEPT FOR USE DIRECTLY RELATED TO (A) DATA OR INFORMATION (i) GENERATED BY AND OBTAINED WITHOUT CHARGE FROM A CONSUMER NOT THEREBY ENGAGED IN A BUSINESS ENTERPRISE, AND (ii) FOR PERSONAL USE ONLY; AND (B) OTHER USES SPECIFICALLY AND SEPARATELY LICENSED BY MPEG LA, L.L.C.

If you have questions about the MPEG-4 visual standard, please contact MPEG LA, L.L.C., 250 Steele Street, Suite 300, Denver, Colorado 80206; www.mpegla.com.

13.**NOTICE ABOUT THE VC-1 VISUAL STANDARD.** This software may include VC-1 visual decoding technology. MPEG LA, L.L.C. requires this notice:

THIS PRODUCT IS LICENSED UNDER THE VC-1 PATENT PORTFOLIO LICENSES FOR THE PERSONAL AND NON-COMMERCIAL USE OF A CONSUMER TO (A) ENCODE VIDEO IN COMPLIANCE WITH THE VC-1 STANDARD ("VC-1 VIDEO") OR (B) DECODE VC-1 VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL AND NON-COMMERCIAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSED TO PROVIDE VC-1 VIDEO. NO LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE.

If you have questions about the VC-1 visual standard, please contact MPEG LA, L.L.C., 250 Steele Street, Suite 300, Denver, Colorado 80206; www.mpegla.com.

14.**ENTIRE AGREEMENT. This agreement (including the warranty below), and the terms for supplements, updates, Internet-based services and support services that you use, are the entire agreement for the software and support services.**

15.**APPLICABLE LAW.**

United States. If you acquired the software in the United States, Washington state law governs the interpretation of this agreement and applies to claims for breach of it, regardless of conflict of laws principles. The laws of the state where you live govern all other claims, including claims under state consumer protection laws, unfair competition laws, and in tort.

Outside the United States. If you acquired the software in any other country, the laws of that country apply.

16.**LEGAL EFFECT.** This agreement describes certain legal rights. You may have other rights under the laws of your state or country. You may also have rights with respect to the party from whom you acquired the software. This agreement does not change your rights under the laws of your state or country if the laws of your state or country do not permit it to do so.

17.**SECONDARY BOOT AND RECOVERY COPIES OF THE SOFTWARE**

    a. **Secondary Boot Copy**. If a secondary boot copy of the server software is installed on the server, you may access, boot from, display and run it solely in the event of a failure, malfunction, or corruption of the primary operating copy of the server software, and only until the primary operating copy has been repaired or reinstalled. You are not licensed to boot from and use both the primary operating copy and the secondary boot copy of the server software at the same time.

    b. **Recovery Copy**. You may use recovery copy solely to repair or reinstall the server software on the server.

18.LEASED HARDWARE. If you lease the server from the manufacturer or installer, the following additional terms shall apply: (i) you may not transfer the software to another user as part of the transfer of the server, whether or not a permanent transfer of the software with the server is otherwise allowed in these license terms; (ii) your rights to any software upgrades shall be determined by the lease you signed for the server; and (iii) you may not use the software after your lease terminates, unless you purchase the server from the manufacturer or installer.

19.NO RENTAL. You may not rent, lease, lend, or provide commercial hosting services with the SOFTWARE.

20.PRODUCT SUPPORT. Contact the manufacturer or installer for support options. Refer to the support number provided with the server.

21.BACKUP COPY. You may make one backup copy of the software. You may use it only to reinstall the software on the server.

22.PROOF OF LICENSE. If you acquired the software on the server, or on a disc or other media, a genuine Certificate of Authenticity label with a genuine copy of the software identifies licensed software. To be valid, this label must be affixed to the server, or included on or in the manufacturer or installer's software packaging. If you receive the label separately, it is not valid. You should keep the label on the server or packaging to prove that you are licensed to use the software. To identify genuine Microsoft software, see http://www.howtotell.com.

23.TRANSFER TO A THIRD PARTY. You may transfer the software only with the server, the Certificate of Authenticity label, and these license terms directly to a third party. Before the transfer, that party must agree that these license terms apply to the transfer and use of the software. You may not retain any copies of the software including the backup copy.

24.NOT FAULT TOLERANT. **The software is not fault tolerant. The manufacturer or installer installed the software on the server and is responsible for how it operates on the server.**

25.RESTRICTED USE. The Microsoft software was designed for systems that do not require fail-safe performance. You may not use the Microsoft software in any server or system in which a malfunction of the software would result in foreseeable risk of injury or death to any person. This includes operation of nuclear facilities, aircraft navigation or communication systems and air traffic control.

26.NO WARRANTIES FOR THE SOFTWARE. The software is provided "as is". You bear all risks of using it. Microsoft gives no express warranties, guarantees or conditions. Any warranties you receive regarding the server or the software do not originate from, and are not binding on, Microsoft or its affiliates. When allowed by your local laws, the manufacturer or installer and Microsoft exclude implied warranties of merchantability, fitness for a particular purpose and non-infringement.

27.LIMITATION ON AND EXCLUSION OF DAMAGES. Except for any refund the manufacturer or installer may provide, you cannot recover any other damages, including consequential, lost profits, special, indirect or incidental damages.

This limitation applies to

anything related to the software, services, content (including code) on third party Internet sites, or third party programs; and

claims for breach of contract, breach of warranty, guarantee or condition, strict liability, negligence, or other tort to the extent permitted by applicable law.

It also applies even if

repair, replacement or a refund for the software does not fully compensate you for any losses; or

the manufacturer or installer, or Microsoft knew or should have known about the possibility of the damages.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. They also may not apply to you because your country may not allow the exclusion or limitation of incidental, consequential or other damages.

28.EXPORT RESTRICTIONS. The software is subject to United States export laws and regulations. You must comply with all domestic and international export laws and regulations that apply to the

software. These laws include restrictions on destinations, end users and end use. For additional information, see www.microsoft.com/exporting.