

# Barco service bulletin

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**Serial Number:** 988  
**Date:** 10/08/2011  
**Product:** DP2K and DP4K projector series  
**Priority code\*:** B

- A. "Must" modification, Barco will provide the necessary components to perform this modification at no charge.
- B. Improves the reliability of the product.
- C. Improves the general working conditions of the product.
- D. For information only.

## 1. CORRUPT FILE SYSTEM ON THE ICP BOARD OF THE DP2K AND DP4K PROJECTOR SERIES

### 1.1 General

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**This Info-T replaces Info-T 960.**

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#### Phenomenon

1. The file system on the ICP board goes corrupt during normal use of the projector (if the ICP firmware version is below 3.0).
2. While upgrading ICP's to solve the specified problem above result sometimes in a non operational ICP, an ICP with corrupt files, a failed upgrade.

#### Cause

1. Root cause of the problem is some critical timing in the ICP firmware that drives the Flash Disk. The chance that the File System can go corrupt is in relation with the amount of power cycles (projector switched OFF/ON) or reboots (software system reset) of the projector. More cycles or reboots lead to a potential higher failure rate of the File System.
2. This problem is eliminated since ICP firmware version 3.0. However, the Flash Disk on the ICP board with version below and till version 3.1 which is not upgraded according to this Info-T, could have had corrupt files which were needed for the upgrade process. In such a case, failing upgrades, non working ICP's, ICP's with corrupt files can be the result.

#### Solution

The problem is eliminated by formatting and repartitioning the Flash Disk **before** upgrading. The procedure in this Info-T describes how to do this and is supposed for the ICP's which have a version below 3.1 or have version 3.1 but were not upgraded according to this Info-T.



**The upgrade process must be performed strictly according to this Info-T. Perform the steps in exactly the same order as described. Failure to do so can cause irreversible damage to the ICP board.**

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**ICP boards which are not operational anymore are recoverable if they can still boot in boot mode and if Ethernet communication to the ICP is still possible.**

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After the procedures in this Info-T are successfully performed, the ICP firmware can be upgraded to higher versions using the default tools.

### Scope

All DP2K and DP4K projector series.

## 1.2 Approvals

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### Modification approved by:

Escalation Manager    R&D Director                      Product Manager                      Quality Manager

If you should have any more questions, or remarks, please do not hesitate to contact our technical support team via the following web site [www.Barco.com/esupport](http://www.Barco.com/esupport).

## 2. DP2K AND DP4K ICP FIRMWARE UPGRADE AND RECOVERY PROCESS



**CAUTION: The upgrade process must be performed strictly according to this Info-T. Perform the steps in exactly the same order as described. Failure to do so can cause irreversible damage to the ICP board.**

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### Overview

- Downloading the upgrade package
- Cloning your projector settings
- Checking if the ICP board is in operational mode
- Starting the ICP board in boot mode (only if operational mode fails)
- Upgrading the ICP firmware
- Restoring your projector settings

**Flowchart for ICP upgrade and recovery**

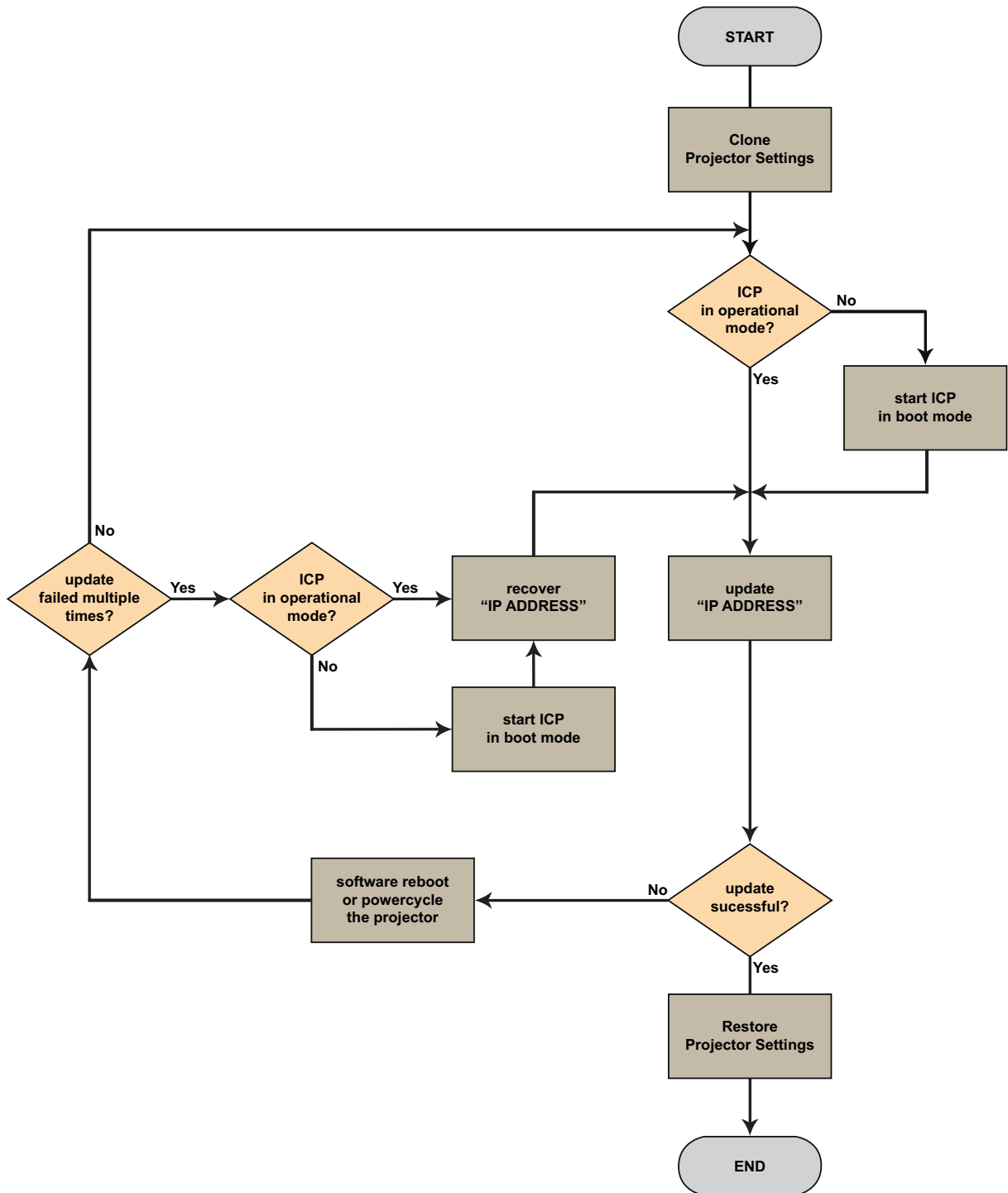


Image 2-1

**2.1 Downloading the upgrade package**

**About the upgrade package**

The upgrade package **ICP DP-xK Update Recovery Tool (R3305045)** contains all the files and software needed to perform the upgrade process:

- ICP and Enigma Control Program
- ICP firmware version 3.1
- Upgrade tool
- Recovery tool
- BaseClone files:
  - dp2kBaseClone.2.4.0.zip
  - dp2kBaseCloneImb.typeA.2.4.0.zip
  - dp4kBaseClone2.4.0.zip
  - dp4kBaseCloneImb.typeA.2.4.0.zip

#### How to download the upgrade package?

1. Go to Barco's partnerzone on <https://my.barco.com>

2. Login into the partnerzone.

If you are not yet registered click on *Sign in here* and follow the instructions. With the created login and password, it is possible to enter the partnerzone.

When your login is correct, the partnerzone start page is displayed.

3. Click the *Support tab*, then the *Drivers & software* icon and select *Digital Cinema projectors*. Choose your DP2K or DP4K projector from the list.

All the available *Application Software*, *Flash Software* and *SNMP MIB files* will be displayed.

4. In the **Flash Software** tab, download the ICP upgrade package: **ICP DP-xK Update Recovery Tool** (R3305045)

5. Unzip the upgrade package in the following directory: `C:\IcpUpdateRecover\`

## 2.2 Cloning your projector settings

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**Make sure that the projector and the update computer are connected to the Ethernet.**

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**The PC's IP Address MUST be within the same subnet as the projector's IP Address in order for communication to be possible. This requires checking the PC's and projector's Subnet-Mask settings.**

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#### How to clone your projector settings?

1. Startup the Communicator software and login as a **Service Technician**.

2. Make a connection with your projector.

3. Go to the tab *Installation* (1) and click on **Advanced** (2).

4. Click on **Cloning** (3).

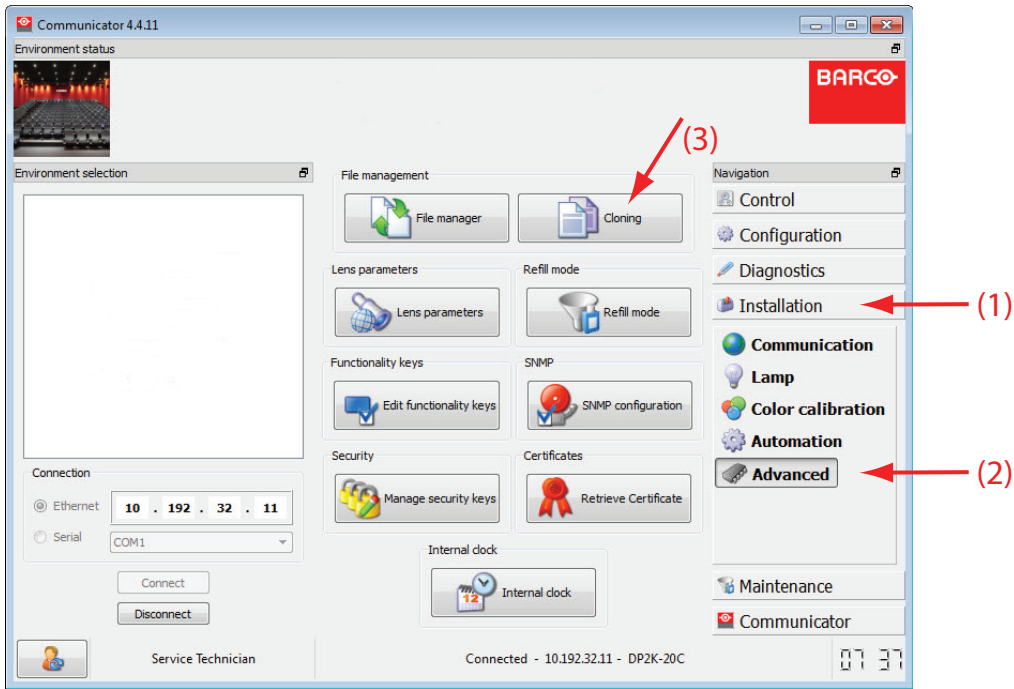


Image 2-2

The *Projector cloning* window opens.

5. Check the radio button next to *Create a clone file from the projector* (4) and click on **Next** (5).

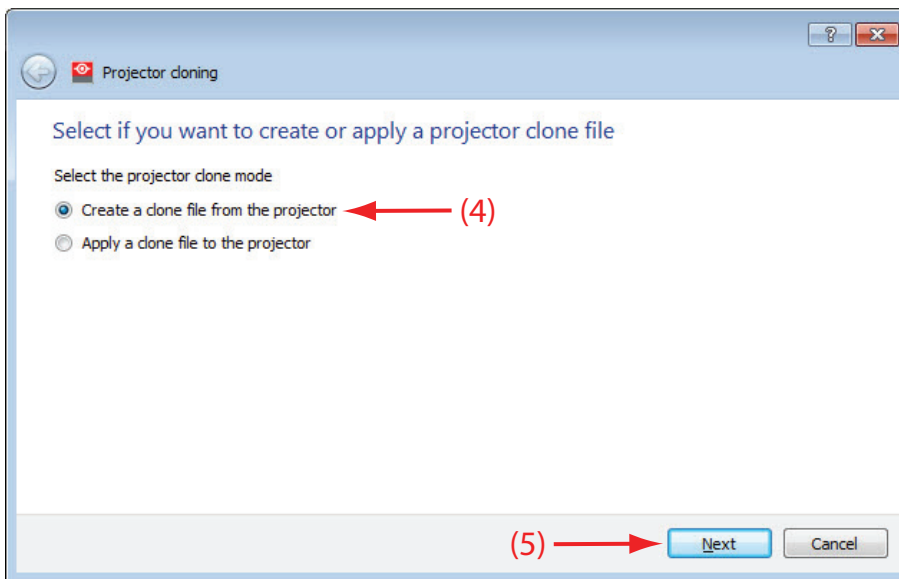


Image 2-3

6. Check the radio button next to *Preset clone* (6) and click on **Next** (7).

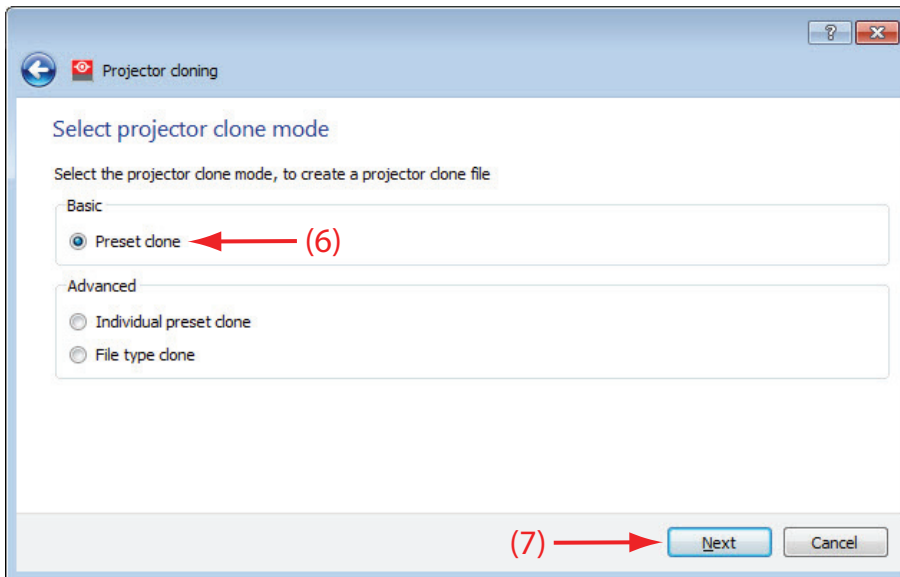


Image 2-4

The software gathers all presets, the pointed files and the locations and displays it for confirmation.

7. Check the check box in front of *Clone setup specific settings* (8).

A message is displayed. Click **Yes** (9) to confirm and click **Next** (10).

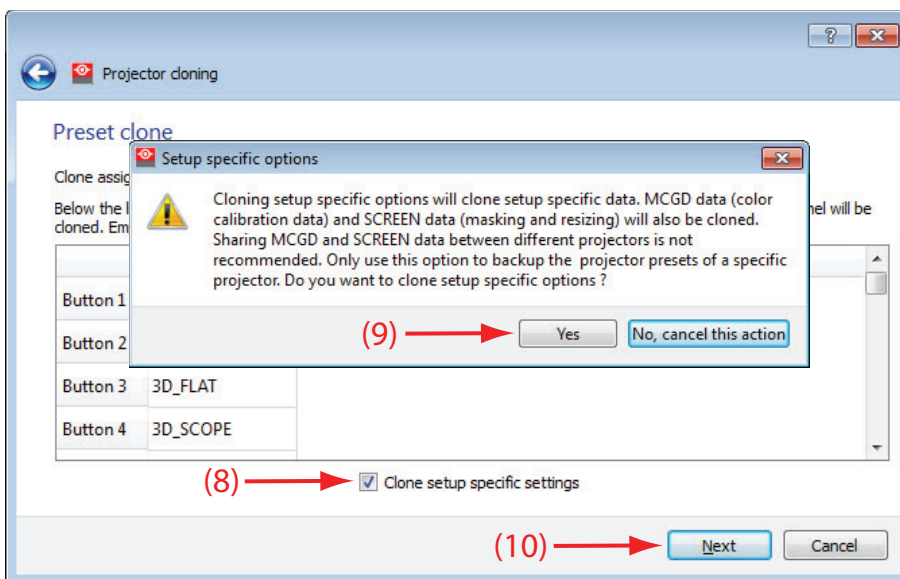


Image 2-5

8. Click **Next** (11).

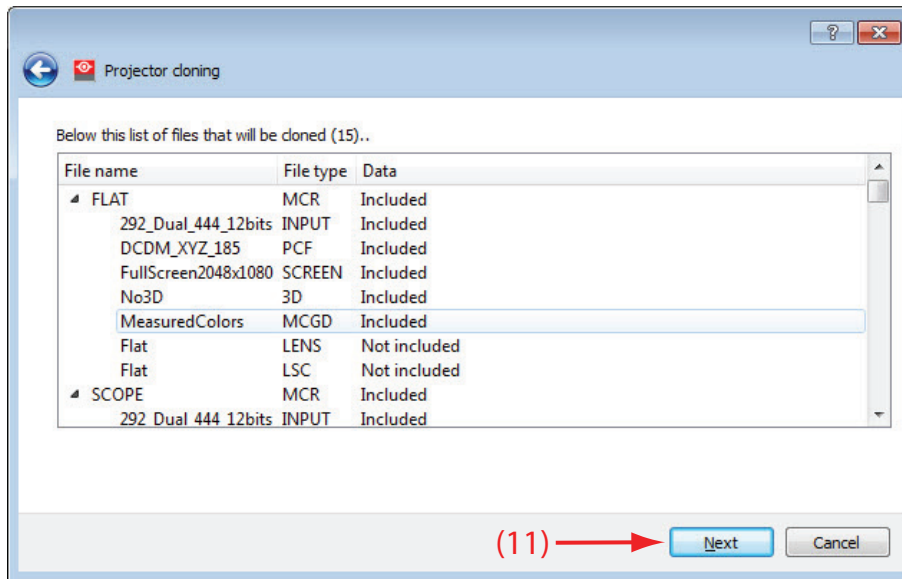


Image 2-6

9. Click on **Browse** (12) and select a location to save the clone file.

**Tip:** Save the clone file to the same directory where you extracted the upgrade package (C:\IcpUpdateRecover).

Click on **Save**.

10. Click on **Create clone file >** (13).

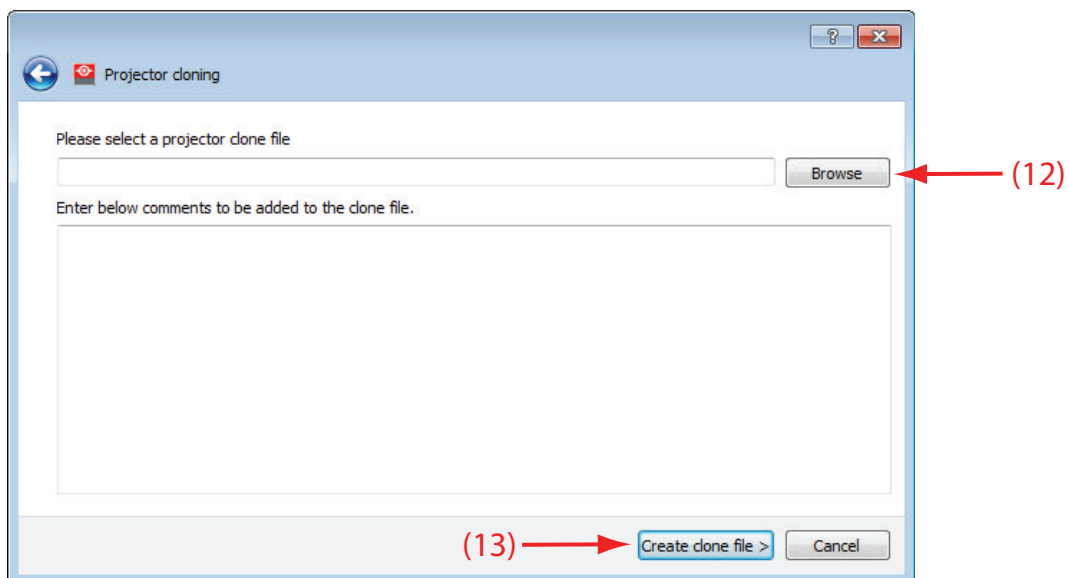


Image 2-7

When all files are transferred, click on **Finish** (14).

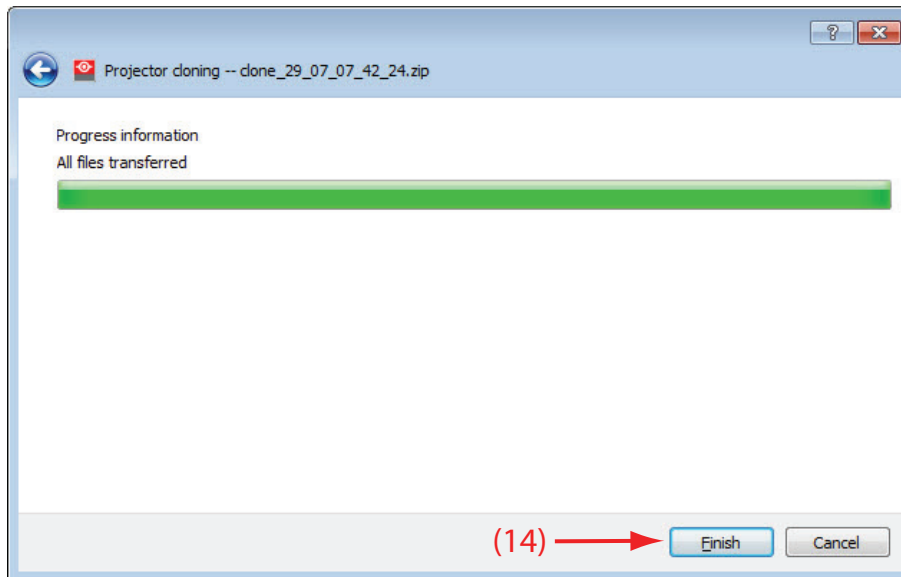


Image 2-8

The clone file is created and stored on the selected location.

## 2.3 Checking if the ICP board is in operational mode

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**Two methods can be used to check the ICP board mode: a remote check and a physical check.**

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### Remote check

1. Startup the *ICP and Enigma Control Program*.

**Tip:** *The ICP and Enigma Control Program is part of the upgrade package. Unzip ICP and Enigma Control Program Setup 1.01(114).zip and execute Install.msi to install the software.*

2. Start with tab page *Connection* (1).

In the *Ethernet configuration* pane, click on the *IP Addr* input field (2a) and fill out the IP address of the projector, or  
Click on **Select** (2b) and select the correct IP address out of the list.

3. In *Connection to ICP* pane, check the check box in front of *External Ethernet Port* (3)

**Note:** *No other fields checked in that pane or in the Connection to Enigma pane.*

4. If a connection is established and **Main App is currently running** (4) is listed in the *Version Info* pane, the ICP board is in operational mode.

5. Uncheck the checkbox in front of *External Ethernet Port* (3). (Otherwise, the communication to the ICP remains locked which prevent the provided program to update the ICP firmware.)



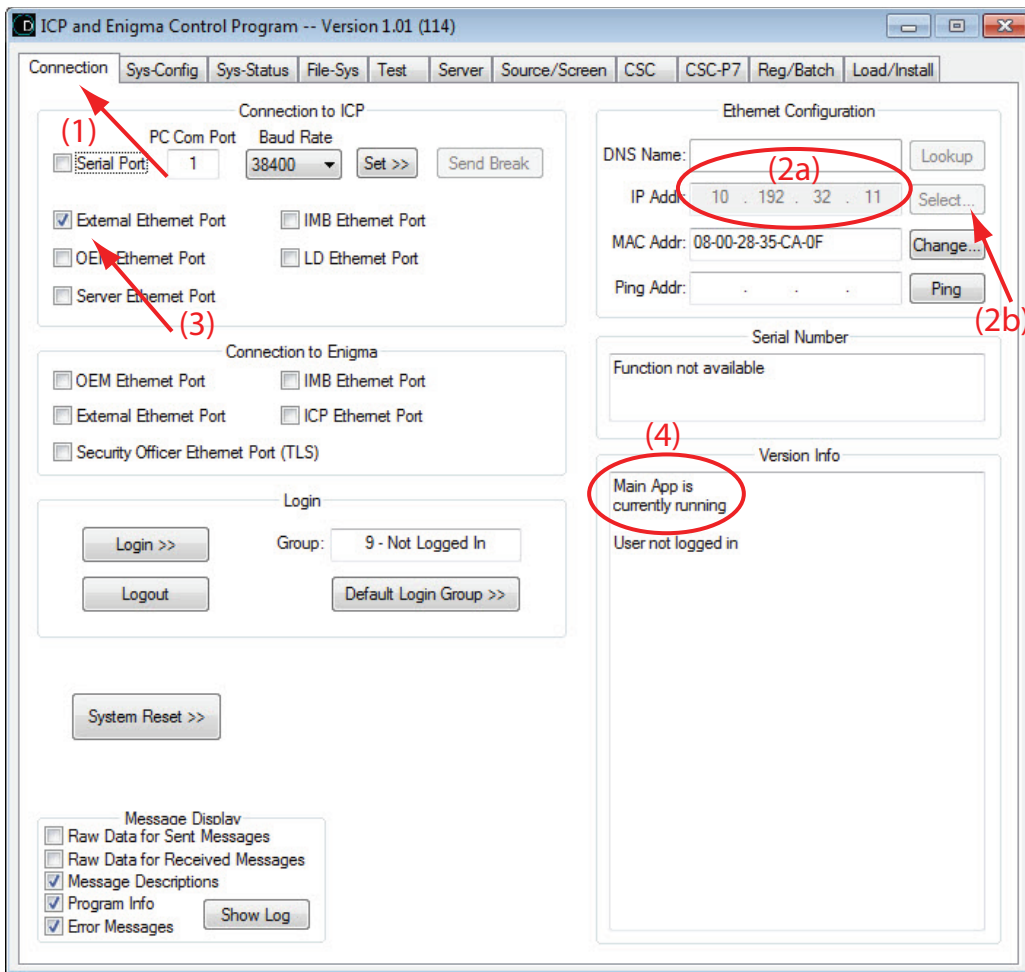


Image 2-9

### Physical check

The ICP board is in operational mode if the following 3 LEDs light green:

- ICP STAT (1)
- FMT STAT (2)
- OS STAT (3)

and the following LED is flashing green:

- SW STAT (4)

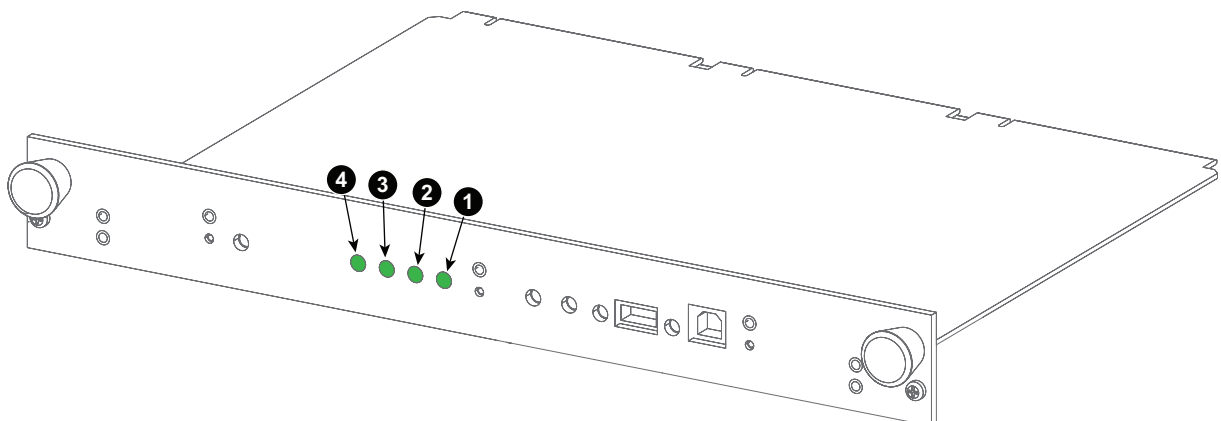


Image 2-10

## 2.4 Starting the ICP board in boot mode (only if operational mode fails)



**WARNING:** The projector must be cooled down before removing any of the projector covers: wait for the cool down cycle to finish after switching the projector to standby (the sound of the fans comes to a very low level) and wait for 15 more minutes before starting any of the procedures below.



**WARNING:** Disconnect the mains power supply to the projector terminals and unplug the power cord at the UPS INLET socket in order to completely cut off the power supply to the projector. Failure to do so can cause serious injury or death.



**CAUTION:** Always wear a wrist band which is connected to the ground while handling the electrostatic discharge (ESD) sensitive parts.

### How to start the ICP board in boot mode?

1. Switch the projector to standby and wait for the cool down cycle to finish. Wait for 15 more seconds before starting any of the procedures below.
2. Disconnect the mains power supply to the projector terminals and unplug the power cord at the UPS INLET socket in order to completely cut off the power supply to the projector.
3. Remove the input cover of the projector and remove the ICP board from the Card Cage.
4. Remove the front panel of the ICP board by removing the 3 screws.

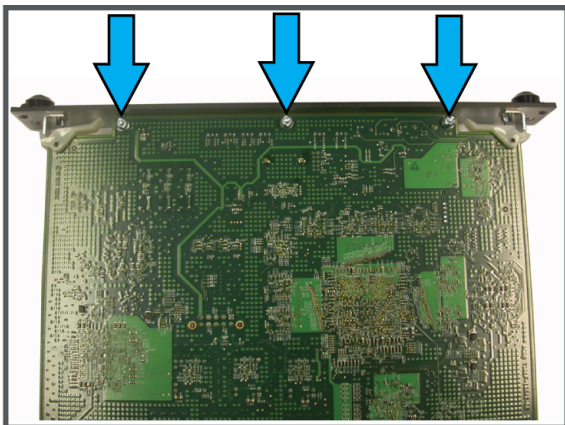


Image 2-11  
ICP board, front panel removal

5. Reinsert the board in the Card Cage.
6. Connect the power supply to the projector and switch the projector on.
7. When the projector is started, press the boot button on the ICP board.

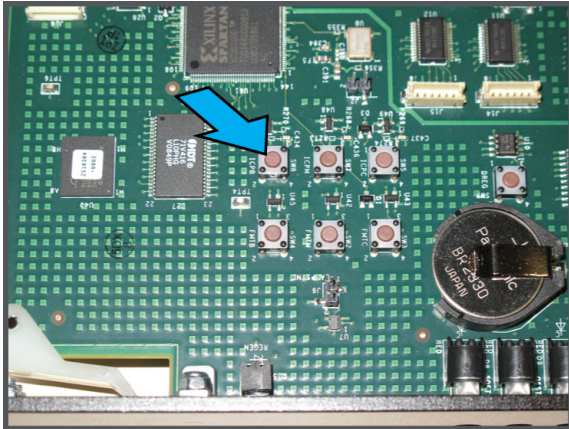


Image 2-12  
Boot mode button.

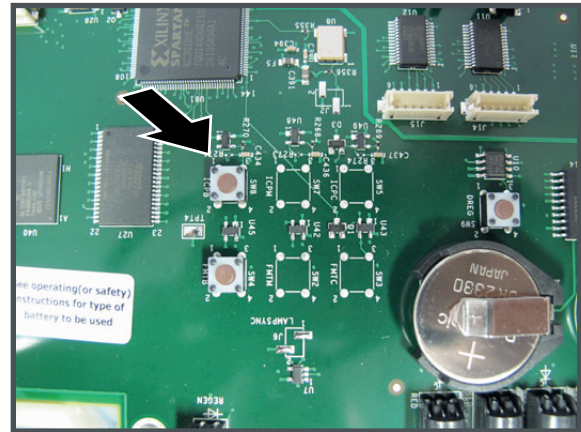


Image 2-13  
Boot mode button (new design ICP board).

The ICP board restarts. When fully restarted, the most right LED lights up as orange and remains orange. The ICP board is in boot mode now.



**When it is not possible anymore to start the ICP board in boot mode, replace the ICP board. Return the failed ICP board to Barco, together with the upgrade log file (if you have one).**

## 2.5 Upgrading the ICP firmware



**CAUTION:** Before upgrading make sure you have cloned your projector settings as all configuration files located on the ICP will be removed.



The upgrade process will take approximately 18 minutes in case of a DP2K projector and 23 minutes in case of a DP4K projector.

### How to upgrade the ICP firmware?

1. Start the Windows command prompt (Start - Run - *cmd*)

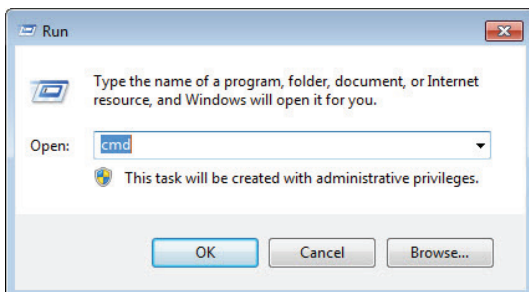


Image 2-14

2. Go to the directory where the upgrade package **ICP DP-xK Update Recovery Tool** (R3305045) was extracted: *C:\IcpUpdateRecover\*
  - a) Browse to your *C:\* directory by typing *cd C:\* and pressing **Enter**.
  - b) Access the upgrade package directory by typing *cd IcpUpdateRecover*
3. Type *update xxx.xxx.xxx.xxx* (where *xxx.xxx.xxx.xxx* is the IP address of the projector to be updated) and press **Enter**.

**Example:** the IP address of the projector to be updated is 10.192.8.62. The command prompt window looks as follows:

```

C:\WINDOWS\system32\cmd.exe - update 10.192.8.62
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\SUPIS>cd C:\
C:\>cd IcpUpdateRecover
C:\IcpUpdateRecover>update 10.192.8.62
C:\IcpUpdateRecover>IcpUpdateRecover.exe -ip 10.192.8.62
+-----+
| ICP Update and Recover Program |
+-----+
serial nr 1190048149
*****
*** Installation information ***
*****
Date info : wo 10. aug 08:46:31 2011
Version updater program: 1.1.3
Device serial number : 1190048149
Parsing update step file ./icp_files/updatesteplist.xml
Number update steps : 13
### Start Step 1 ###
Step action: batchfile
Making connection on host 10.192.8.62
    
```

Image 2-15

4. Verify if the update is successfully.

```

C:\WINDOWS\system32\cmd.exe - update 10.192.8.62
---- Done Step 11 ----
Waiting 45 seconds after this Step.
### Start Step 12 ###
Step action: write_loginlist
Need reconnect & login on host 10.192.8.62
connection to "10.192.8.62" on port "43680"
Connection to device (10.192.8.62) established.
Answer 'TI Login List Length': 3 c4 0 0 0 c4 ed 0
File length package: 2808
Number of packets to upload : 1
Uploading login list data...
---- Done Step 12 ----
Waiting 5 seconds after this Step.
### Start Step 13 ###
Step action: restart
Restarting Projector...
Projector restarted
---- Done Step 13 ----
Update successfully done.
C:\IcpUpdateRecover>echo Exit Code is 0
Exit Code is 0
C:\IcpUpdateRecover>pause
Press any key to continue . . .
    
```

Image 2-16  
Command prompt of a successful update.

```

C:\WINDOWS\system32\cmd.exe - update 10.192.8.62
-----+-----
| ICP Update and Recover Program |
-----+-----
serial nr Unknown
*****
*** Installation information ***
*****
Date info : wo 10. aug 09:26:14 2011
Version updater program: 1.1.3
Device serial number : Unknown
Parsing update step file ./icp_files/updatesteplist.xml
Number update steps : 13
### Start Step 1 ###
Step action: batchfile
Making connection on host 10.192.8.62
connection to "10.192.8.62" on port "43680"
Error: failed to connect to host 10.192.8.62
--- Done Step 1 ---
Waiting 5 seconds after this Step.
Update failed!!! (failure on step 1, action: batchfile, File: 00_LoadBlackUncor
ectedICP.bf)

C:\IcpUpdateRecover>echo Exit Code is -1
Exit Code is -1

C:\IcpUpdateRecover>pause
Press any key to continue . . .

```

Image 2-17  
Command prompt of a failed update.



A log file of the installation can be found in the *log\_update* folder. The filename of the log file contains the serial number of the projector that was upgraded.



If the upgrade process has failed, perform the procedure below (see What to do if the upgrade process has failed?).

#### How to check if the upgrade process was successful?

1. Startup the *ICP and Enigma Control Program*.  
**Note:** The *ICP and Enigma Control Program* is part of the upgrade package. Unzip *icp\_enigma\_control\_program.zip* and execute *Install.msi* to install the software.
2. Start with tab page *Connection* (1).  
In the *Ethernet configuration* pane, click on the *IP Addr* input field (2a) and fill out the IP address of the projector, or  
Click on **Select** (2b) and select the correct IP address out of the list.
3. In *Connection to ICP* pane, check the check box in front of *External Ethernet Port* (3)  
**Note:** No other fields checked in that pane or in the *Connection to Enigma* pane.
4. In *Login* pane, click on **Login** (4) and use the following credentials:
  - User name : Service
  - Password : Heal Thyself
 Click **OK** twice to confirm (5).  
A connection is established with the projector.
5. The *Version Info* displayed should be the same as in the screenshot below (6).

- Uncheck the checkbox in front of *External Ethernet Port* (3). (Otherwise, the communication to the ICP remains locked which prevent the provided program to update the ICP firmware.)

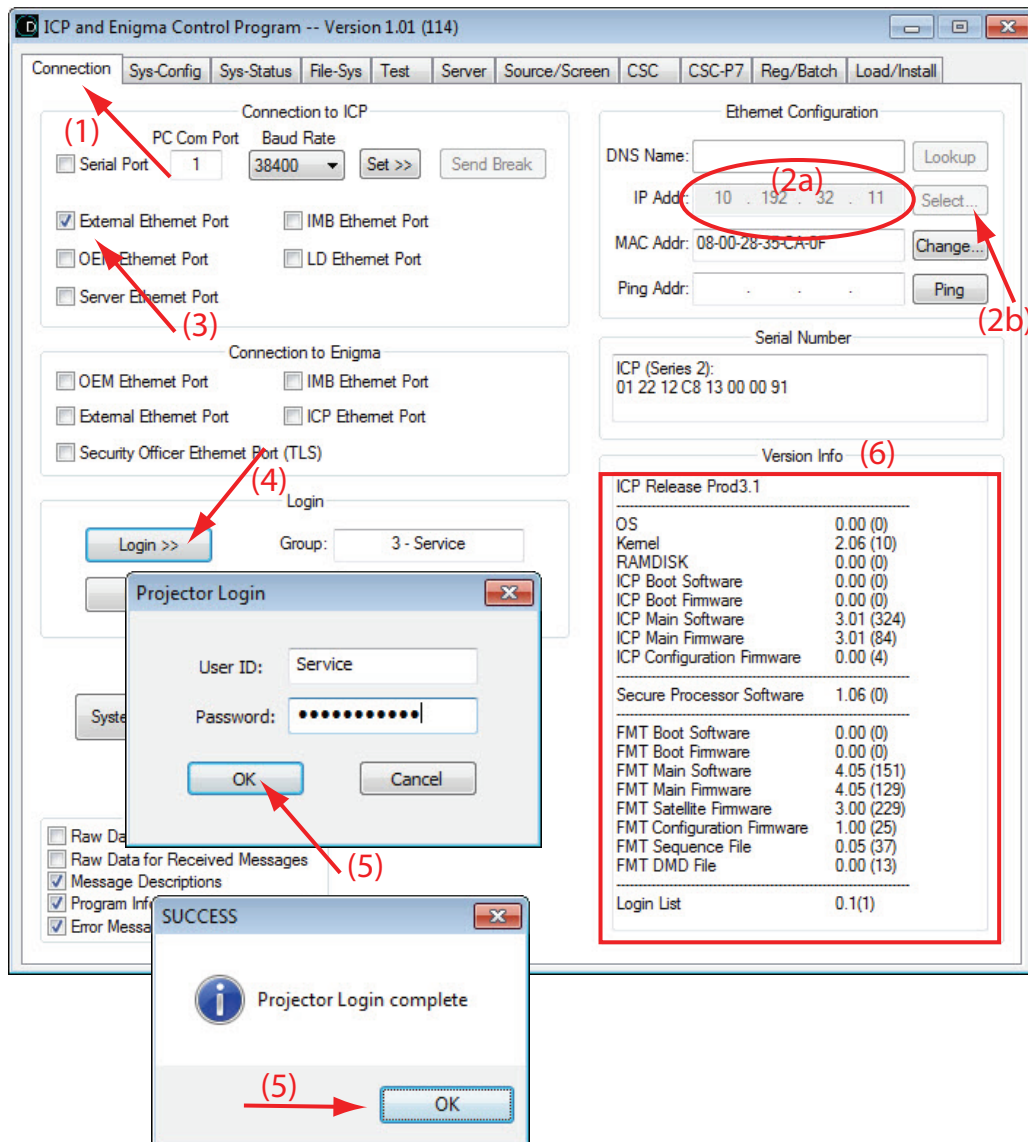


Image 2-18



**If the upgrade process has failed, perform the procedure below (see What to do if the upgrade process has failed?).**

### What to do if the upgrade process has failed?

1. Reboot the projector software:
  - a) Startup the Communicator software and login as a **Service Technician**.
  - b) Make a connection with your projector.
  - c) Go to the tab *Diagnostics* (1) and click on **Tests** (2).
  - d) Click on **Projector** (3).
  - e) Click **Yes** (4) and click **OK** (5) to start the rebooting.

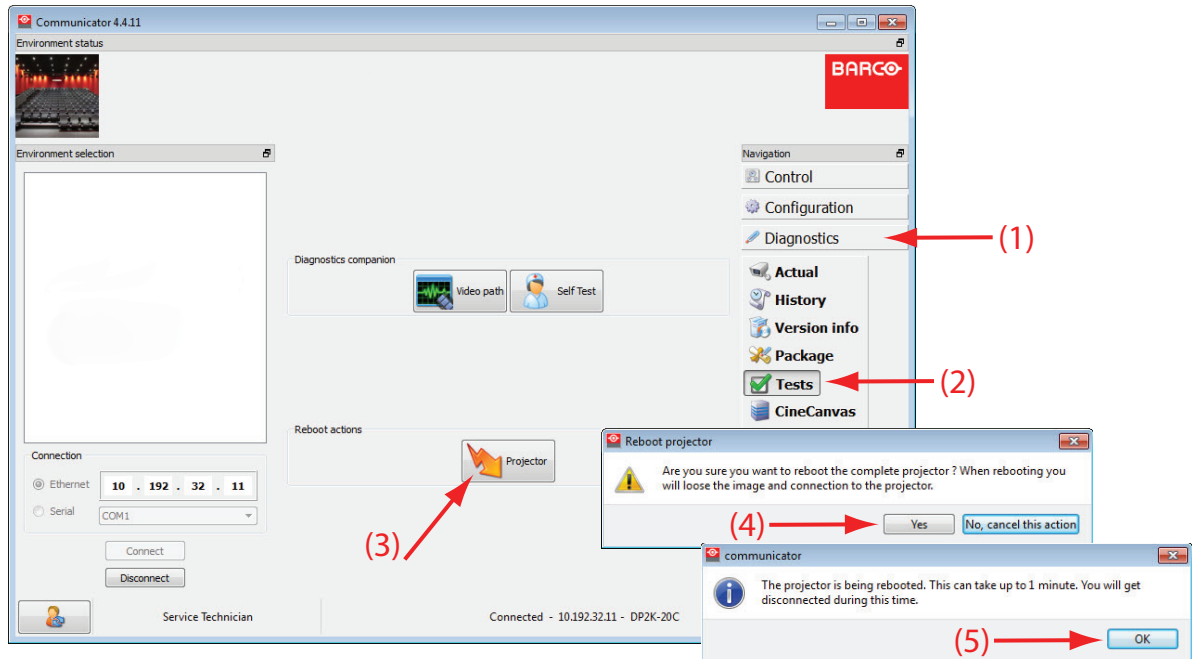


Image 2-19

- f) Wait for 5 minutes and try to make a connection with the projector. If this works, the projector software has restarted successful.
2. Check if the ICP board is in operational mode. See "Checking if the ICP board is in operational mode", page 8 .
  - a) If yes, try again the upgrade process.
  - b) If no, start the ICP board in boot mode (see "Starting the ICP board in boot mode (only if operational mode fails)", page 10) and try again the upgrade process.



**If the upgrade process has failed again, perform the procedure below (see What to do if the upgrade process keeps on failing?).**

### What to do if the upgrade process keeps on failing?

If the upgrade process keeps on failing, the ICP board needs to be recovered. Perform the procedure below.

1. Reboot the projector software:
  - a) Startup the Communicator software and login as a **Service Technician**.
  - b) Make a connection with your projector.
  - c) Go to the tab *Diagnostics* (1) and click on **Tests** (2).
  - d) Click on **Projector** (3).
  - e) Click **Yes** (4) and click **OK** (5) to start the rebooting.

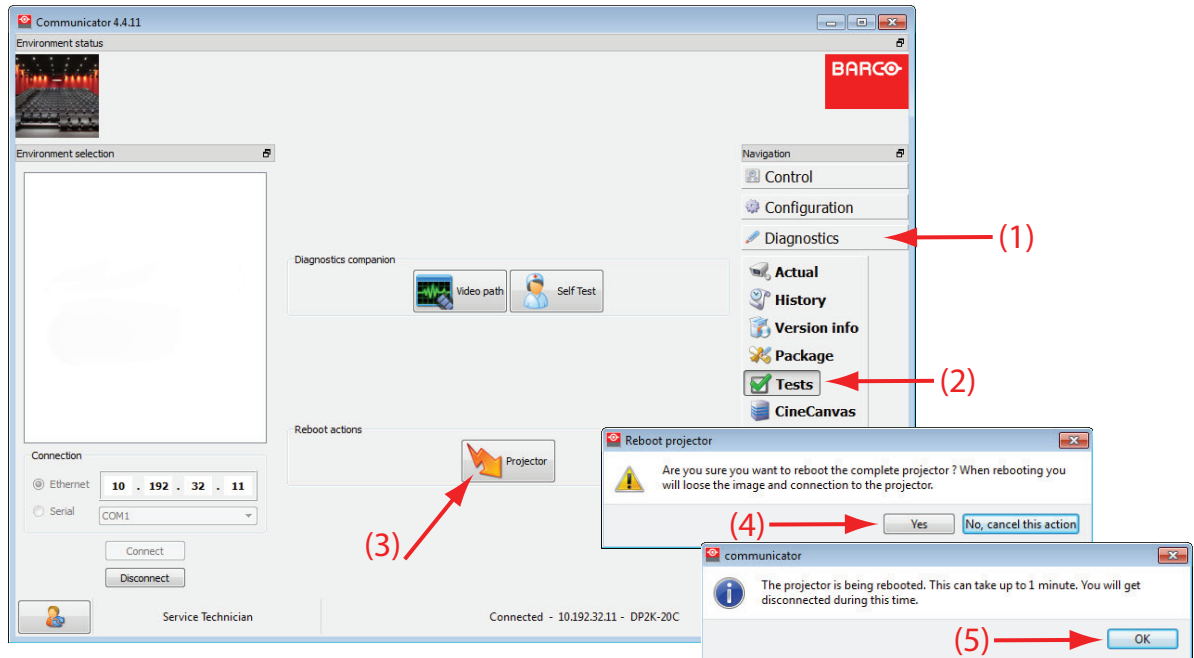


Image 2-20

- f) Wait for 5 minutes and try to make a connection with the projector. If this works, the projector software has restarted successful.
2. Check if the ICP board is in operational mode. See "Checking if the ICP board is in operational mode", page 8 .  
If this is not the case, start the ICP board in boot mode (see "Starting the ICP board in boot mode (only if operational mode fails)", page 10).
3. Start the Windows command prompt (Start - Run - *cmd*)

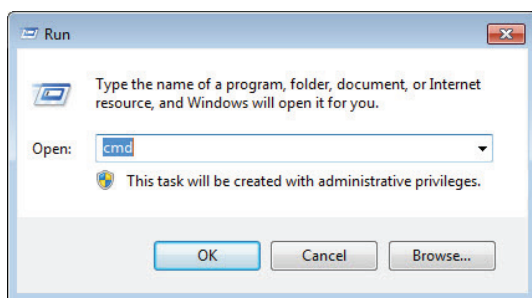


Image 2-21

4. Go to the directory where the upgrade package **ICP DP-xK Update Recovery Tool (R3305045)** was extracted: *C:\IcpUpdateRecover\*
  - a) Browse to your *C:\* directory by typing *cd C:\* and pressing **Enter**.
  - b) Access the upgrade package directory by typing *cd IcpUpdateRecover*
5. Type *recover xxx.xxx.xxx.xxx* (where *xxx.xxx.xxx.xxx* is the IP address of the projector to be recovered) and press **Enter**.

**Example:** The IP address of the projector to be recovered is 10.192.8.62. The command prompt window looks as follows:



```

C:\ C:\WINDOWS\system32\cmd.exe - recover 10.192.8.62
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\SUPIS>cd C:\
C:\>cd IcpUpdateRecover
C:\IcpUpdateRecover>recover 10.192.8.62

C:\IcpUpdateRecover>IcpUpdateRecover.exe -ip 10.192.8.62 -steplist recoverstepli
st.xml
+-----+
| ICP Update and Recover Program |
+-----+
serial nr Unknown
*****
*** Installation information ***
*****
Date info : wo 10. aug 08:39:12 2011
Version updater program: 1.1.3
Device serial number : Unknown
Parsing update step file ./icp_files/recoversteplist.xml
Number update steps : 3
### Start Step 1 ###
Step action: batchfile

```

Image 2-22

If the recovery is successful, try again to upgrade the ICP firmware. See **How to upgrade the ICP firmware?**

```

C:\ C:\WINDOWS\system32\cmd.exe - recover 10.192.8.62
--- Done Step 2 ---
Waiting 35 seconds after this Step.
### Start Step 3 ###
Step action: batchfile
Need reconnect & login on host 10.192.8.62
connection to "10.192.8.62" on port "43680"
Connection to device (10.192.8.62) established.
Parsing II Batch File ./icp_files/04_DiskChipPartition.bf
Info : "Disk partation will occur next. This takes ~45 Seconds. There WILL be
a timeout error. This is normal."
Executing Raw Message...
write II message [cmd1=2, cmd2=ef, cmd3=0, datalen=0
message description: partition the diskchip
Answer of message: 3 ef 0 0 0 ef 91 7c
Delay of 45000 ms...
Info : "Partition operation should be complete."
Info : "Load & Install BASE Filesystem Release NOW."
Info : "After Install complete, WAIT 15 seconds, then run ResetICP."
--- Done Step 3 ---
Waiting 15 seconds after this Step.
Update successfully done.

C:\IcpUpdateRecover>echo Exit Code is 0
Exit Code is 0

C:\IcpUpdateRecover>pause
Press any key to continue . . .

```

Image 2-23

Command prompt of a successful recovery.

If the recovery is not successful, try again the recovery process described above.

```

C:\WINDOWS\system32\cmd.exe - recover 10.192.8.62
+-----+
+ ICP Update and Recover Program +
+-----+
serial nr Unknown
*****
*** Installation information ***
*****
Date info : wo 10. aug 09:22:40 2011
Version updater program: 1.1.3
Device serial number : Unknown
Parsing update step file ./icp_files/recoversteplist.xml
Number update steps : 3
### Start Step 1 ###
Step action: batchfile
Making connection on host 10.192.8.62
connection to "10.192.8.62" on port "43680"
Error: failed to connect to host 10.192.8.62
___ Done Step 1 ___
Waiting 35 seconds after this step
Update failed!!! (failure on step 1, action: batchfile, file: 02_LoadBootModelCH
.hf)

C:\IcpUpdateRecover>echo Exit Code is -1
Exit Code is -1

C:\IcpUpdateRecover>pause
Press any key to continue . . .
    
```

Image 2-24  
Command prompt of a failed recovery.



The ICP board is recoverable as long as the board can be started in boot mode and connecting to the board is possible.



When it is not possible anymore to start the ICP board in boot mode, replace the ICP board. Return the failed ICP board to Barco, together with the upgrade log file (if you have one).

## 2.6 Restoring your projector settings



**CAUTION:** First install the standard BaseClone file delivered by Barco and after that install your own clone file which you created at the start of the upgrade process.

Performing these steps in reverse order will cause loss of your personal settings stored on the projector.

### About the BaseClone file

The BaseClone files are part of the upgrade package. The following BaseClone files are available:

Projector type	BaseClone filename
DP2K projector with Barco HDSDI	dp2kBaseClone.2.4.0.zip
DP2K projector with IMB	dp2kBaseCloneImb.typeA.2.4.0.zip
DP4K projector without Barco HDSDI	dp4kBaseClone2.4.0.zip
DP4K projector with IMB	dp4kBaseCloneImb.typeA.2.4.0.zip

### Installing the BaseClone file

1. Startup the Communicator software and login as a **Service Technician**.
2. Make a connection with your projector.
3. Go to the tab **Installation**(1) and click on **Advanced** (2).
4. Click on **Cloning** (3).

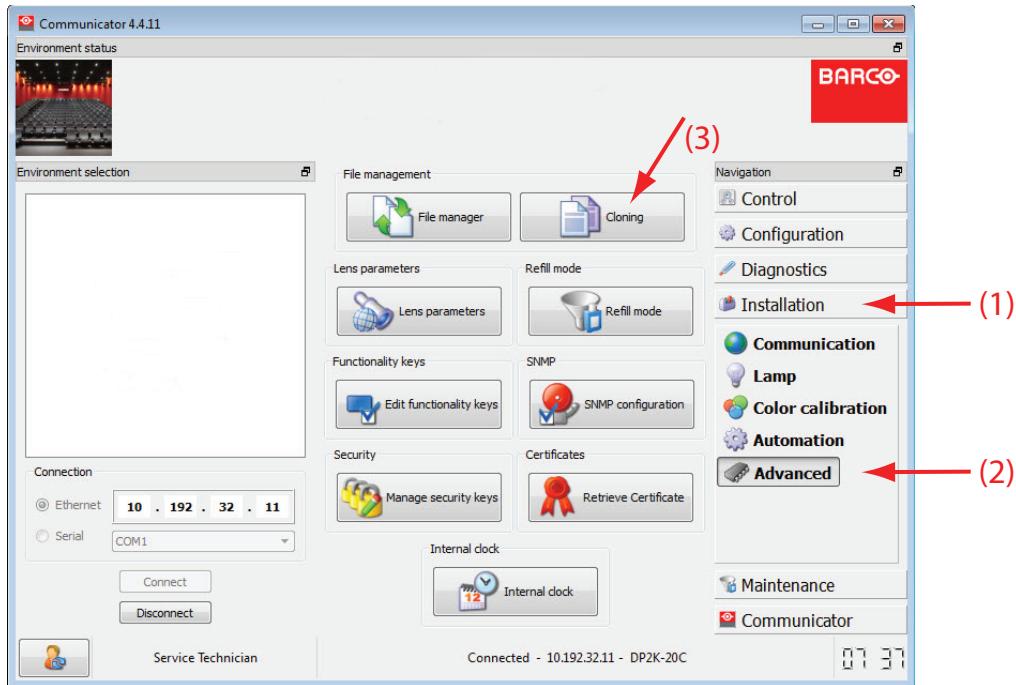


Image 2-25

The Projector cloning window opens.

5. Check the radio button next to *Apply a clone file to the projector* (4) and click on **Next** (5).

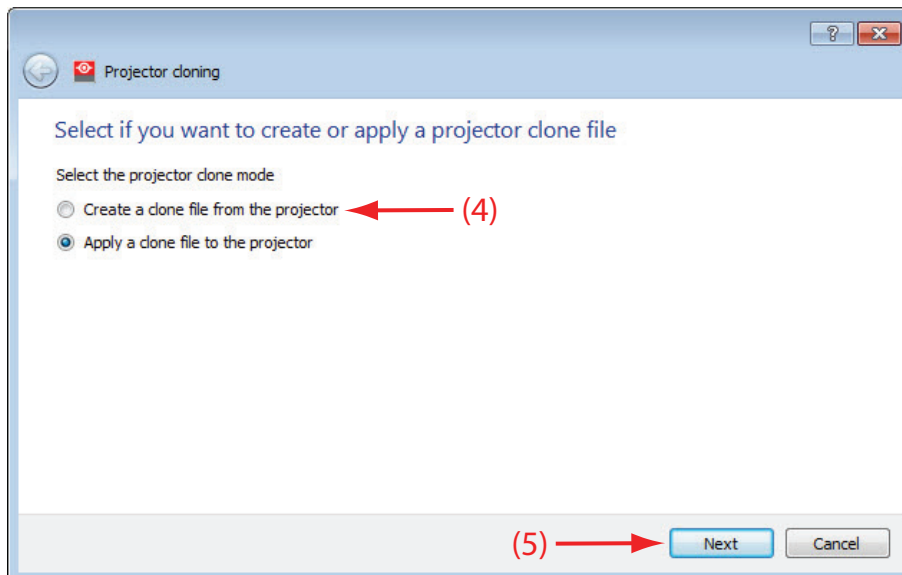


Image 2-26

6. Click on **Select** (6) and select the BaseClone file which is applicable for your projector. Click on **Open** (7).

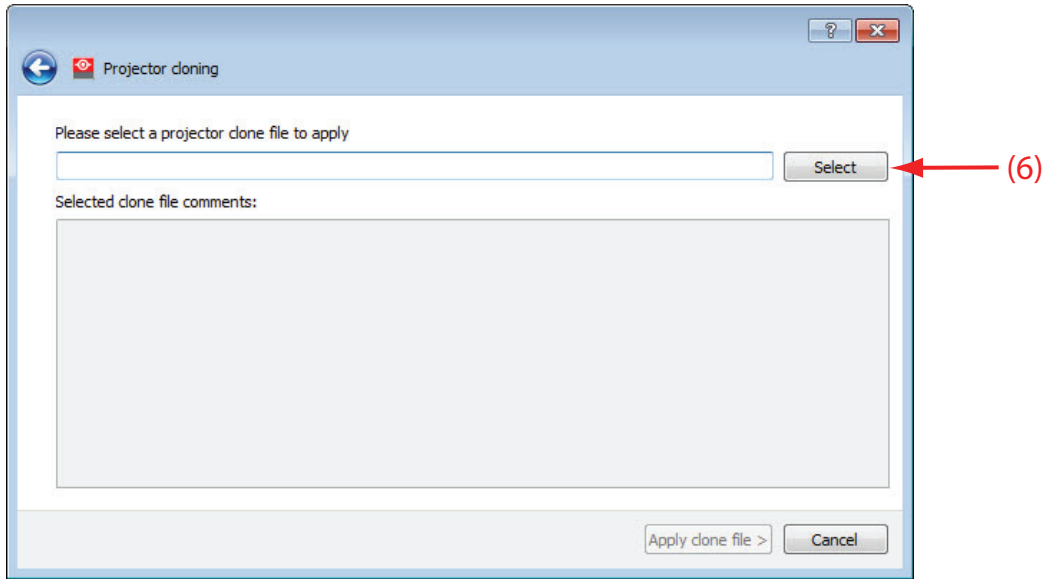


Image 2-27

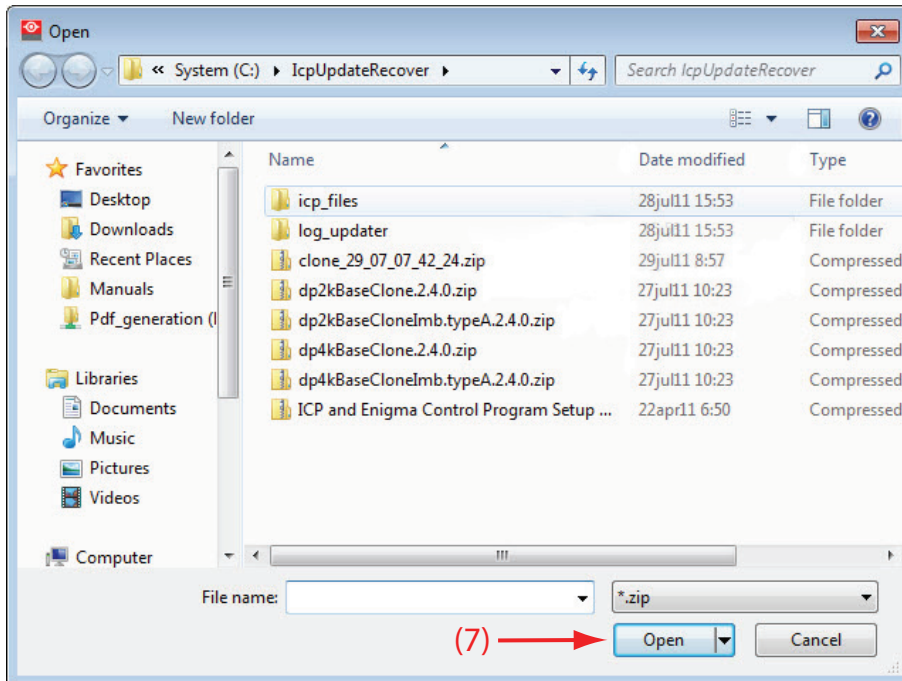


Image 2-28

7. Click on **Apply clone file >** (8).

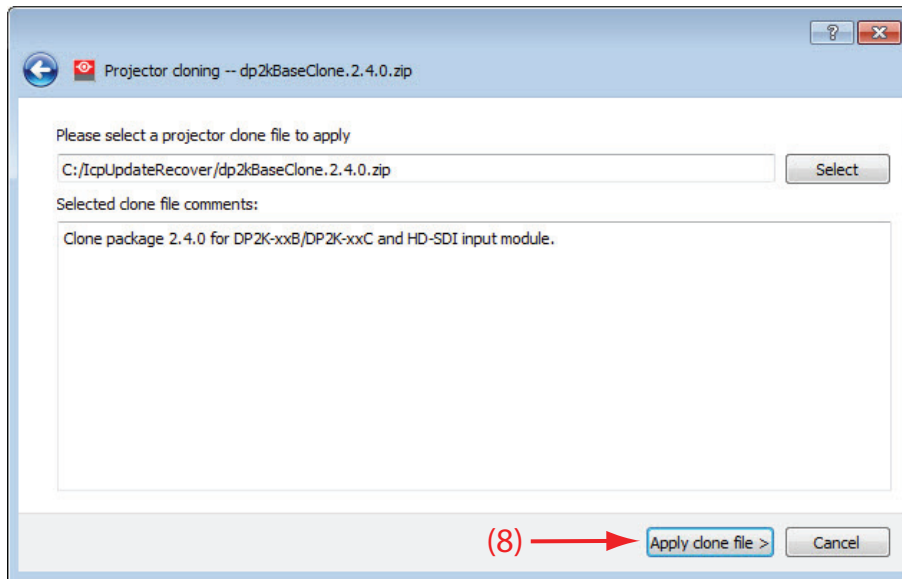


Image 2-29

An overview of all files in the clone file is displayed.

8. Click on **Next** (9).

When all files are transferred, click on **OK** (10) and click on **Finish** (11).

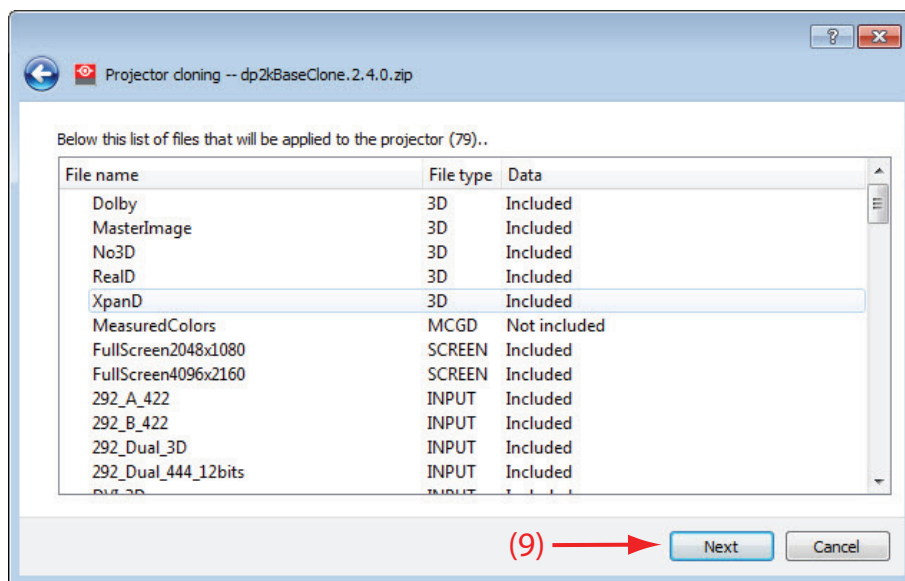


Image 2-30

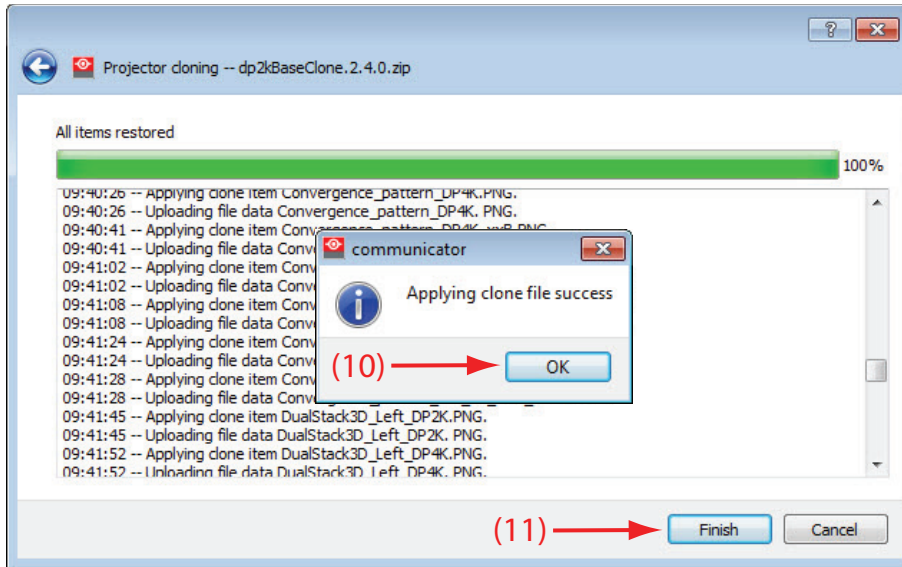


Image 2-31

### Restoring your own projector settings

Perform the same procedure as described above (see **Installing the BaseClone file**), but select the clone file you created at the start of the upgrade process.



**Make sure to restore your own projector settings. Failure to do so will cause all your personal configuration settings on to projector to be lost.**



**During the restore process, you may be asked to overwrite existing files on the projector. Choose Yes to overwrite the files, as these files contain your personal settings.**