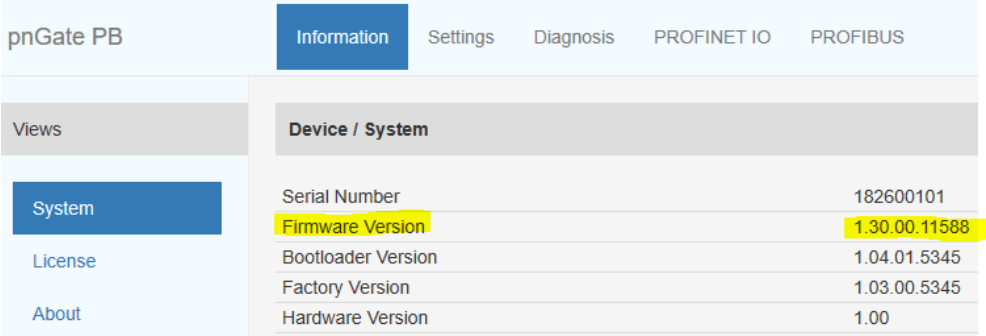
# How-to PROFIBUS capture with xxGate-PB/PA/DP



## 1) Prerequisites

1. Update firmware to the newest version. Old firmware has no 'Capture' function. (below is a table with the current firmware versions 12.07.2023)

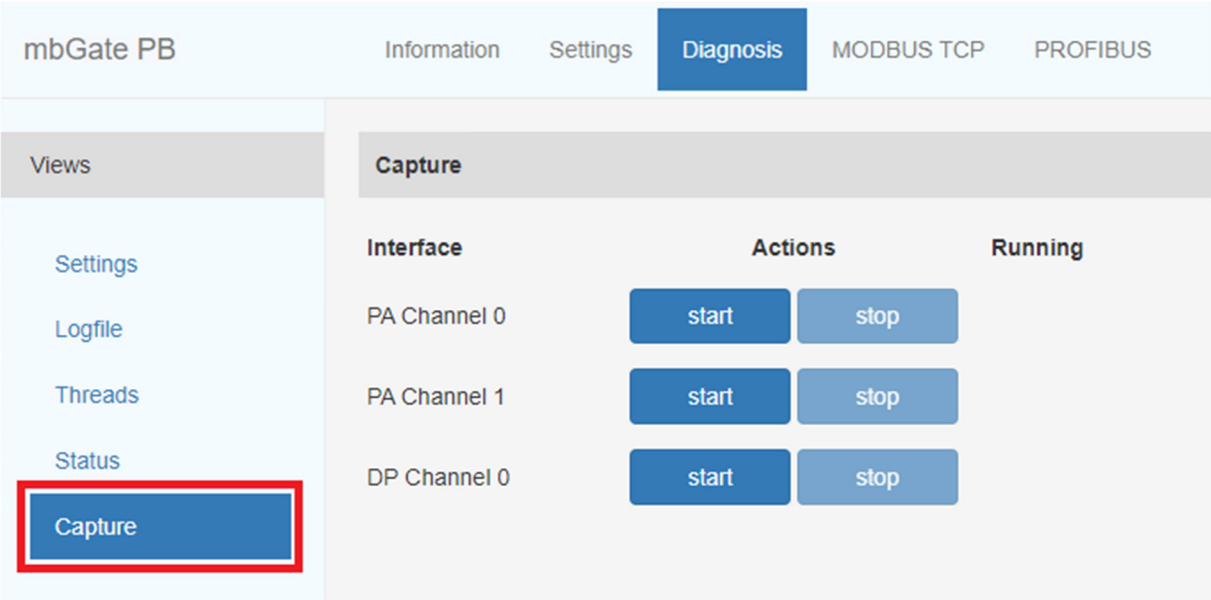
| | |
|---|---|
| pnGate | V1.30 |
| mbGate | V1.20 |
| epGate | V1.10 |



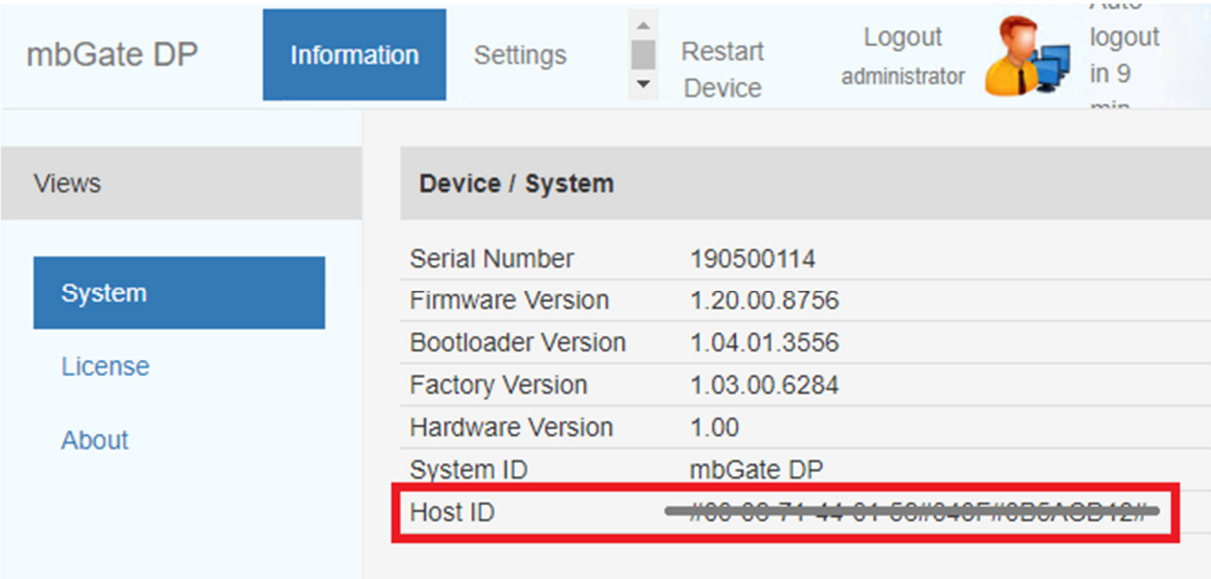

2. A license is required to enable the capture feature on the gateway. Without a license the “Capture” button will not be visible. Product development can create the license for you. (provide them the Host ID of the gateway) The license remains “hidden” after import, meaning that to verify if it was installed or not, check if the “Capture” button is visible (login as diagnosis user).

3.

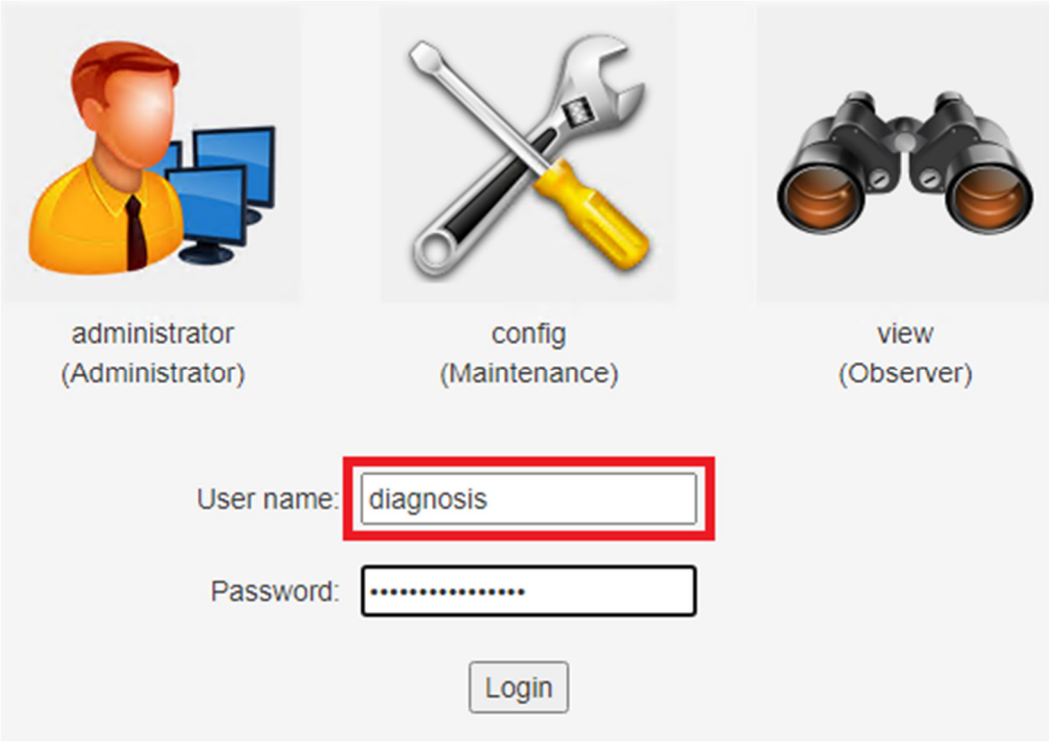
Example screenshot with Capture button visible.




Example screenshot of where to find Host ID.




4. Login as the diagnostics user. Otherwise the capture feature and “Capture” button will not be visible.
   **User name:** diagnosis
   **Password:** ?<fJ#\/$eB2qtGd*




## 2) mbGate and epGate

- On mbGate and epGate the PROFIBUS side goes active directly after the PROFIBUS parameters are applied. Therefore, it is possible to start capturing as soon as the prerequisites mentioned above are met.

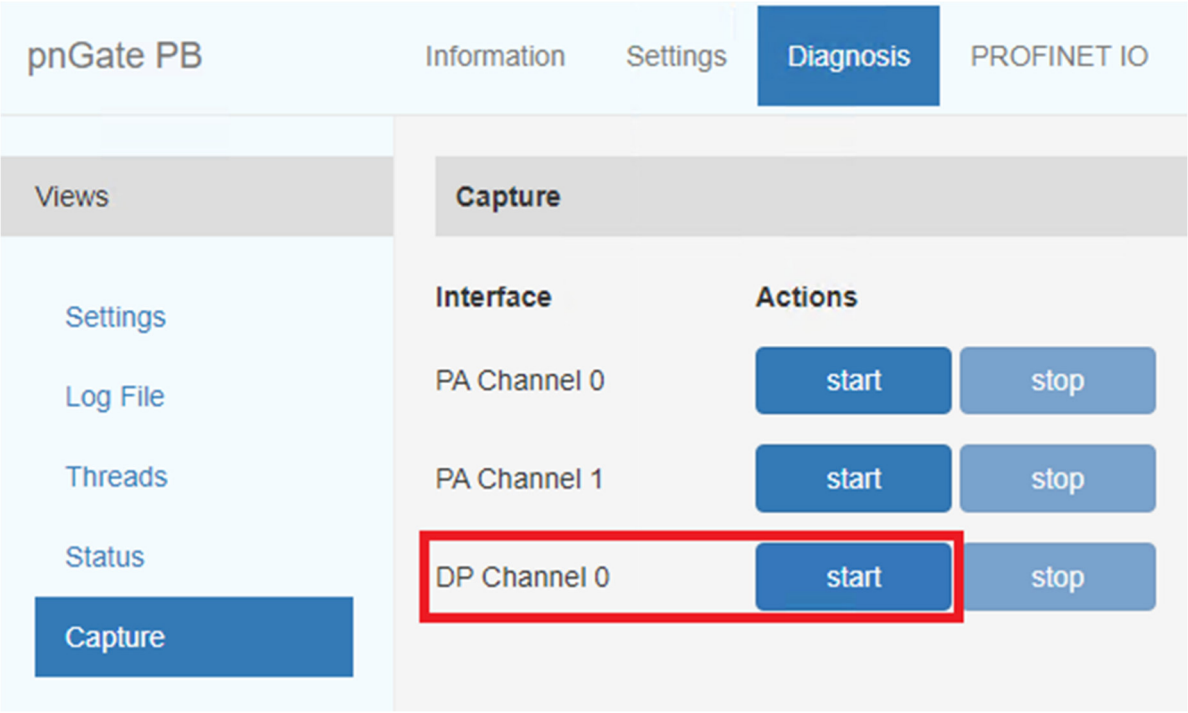
## 3) pnGate

- The pnGate is controlled from PROFINET side and will not go active on PROFIBUS side unless it has a working project and was configured correctly by the PROFINET controller. The capture file *.rpb would be created anyway, but the file might be “empty” containing no datagrams (only a header structure).

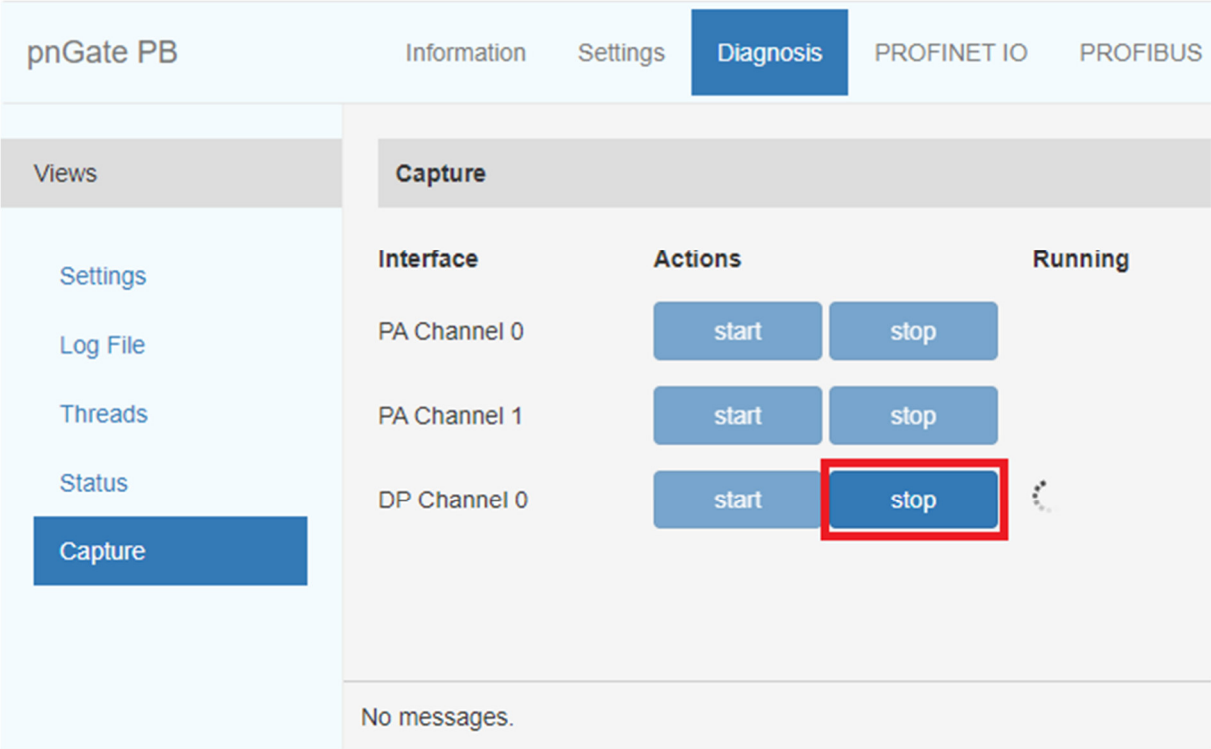
## 4) Capturing

1. Select which Channel to capture the datagrams from.

Example screenshot in which DP Channel 0 is selected for capture by clicking “start”.

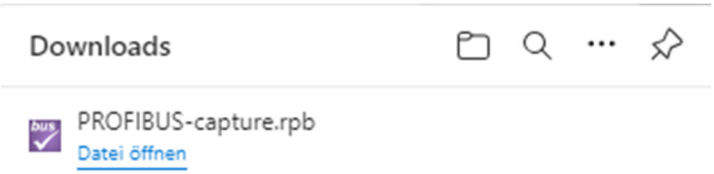



Example screenshot below where a capture is running. Click “stop” and a dialog box should appear where you can select where to save the created capture file. This might differ between some web browsers, otherwise check your computers “Download” folder for the file.



The recordfile (*.rpb) can be found in the windows download section.

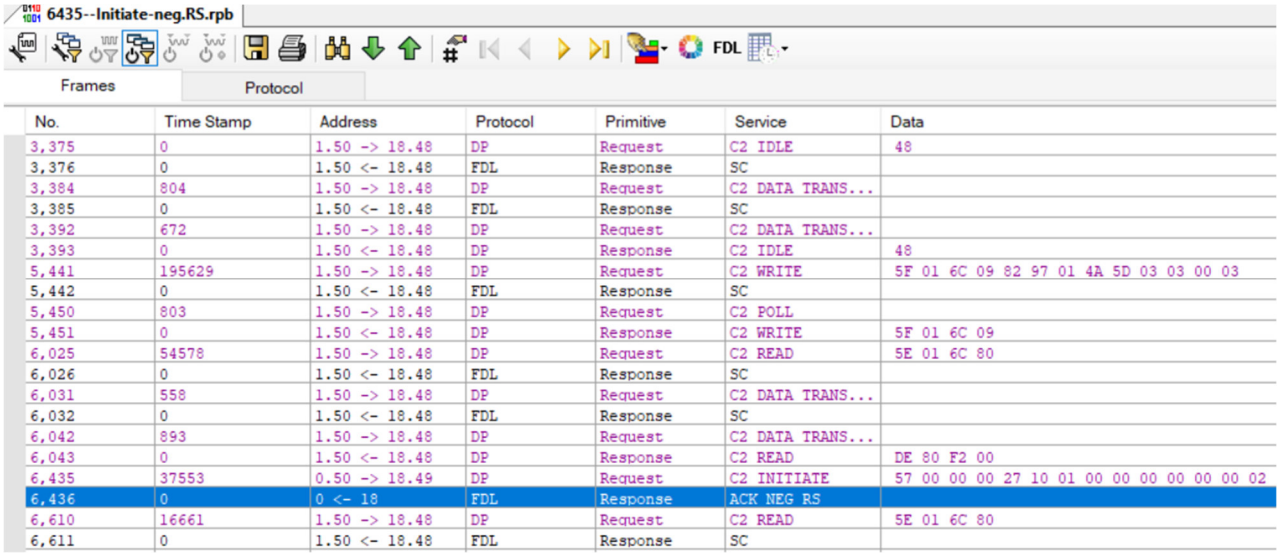
Example pop-up from Edge web browser.




## 5) Analyzing the capture file

1. Install the Softing “PROFIBUS Diagnostics Suite” which is available free of charge. The captured file will be in *.rpb format which is recognized by the software and can be opened with the Diagnostics Suite.

2. Example of a record file:
   This example shows a negative response of slave “18” to the INITIATE of Master “0”.
   Probably the slave supports one C2 connection only.



6435--Initiate-neg.RS.rpb

Frames | Protocol

| No. | Time Stamp | Address | Protocol | Primitive | Service | Data |
|---|---|---|---|---|---|---|
| 3,375 | 0 | 1.50 -> 18.48 | DP | Request | C2 IDLE | 48 |
| 3,376 | 0 | 1.50 <- 18.48 | FDL | Response | SC | |
| 3,384 | 804 | 1.50 -> 18.48 | DP | Request | C2 DATA TRANS... | |
| 3,385 | 0 | 1.50 <- 18.48 | FDL | Response | SC | |
| 3,392 | 672 | 1.50 -> 18.48 | DP | Request | C2 DATA TRANS... | |
| 3,393 | 0 | 1.50 <- 18.48 | DP | Response | C2 IDLE | 48 |
| 5,441 | 195629 | 1.50 -> 18.48 | DP | Request | C2 WRITE | 5F 01 6C 09 82 97 01 4A 5D 03 03 00 03 |
| 5,442 | 0 | 1.50 <- 18.48 | FDL | Response | SC | |
| 5,450 | 803 | 1.50 -> 18.48 | DP | Request | C2 POLL | |
| 5,451 | 0 | 1.50 <- 18.48 | DP | Response | C2 WRITE | 5F 01 6C 09 |
| 6,025 | 54578 | 1.50 -> 18.48 | DP | Request | C2 READ | 5E 01 6C 80 |
| 6,026 | 0 | 1.50 <- 18.48 | FDL | Response | SC | |
| 6,031 | 558 | 1.50 -> 18.48 | DP | Request | C2 DATA TRANS... | |
| 6,032 | 0 | 1.50 <- 18.48 | FDL | Response | SC | |
| 6,042 | 893 | 1.50 -> 18.48 | DP | Request | C2 DATA TRANS... | |
| 6,043 | 0 | 1.50 <- 18.48 | DP | Response | C2 READ | DE 80 F2 00 |
| 6,435 | 37553 | 0.50 -> 18.49 | DP | Request | C2 INITIATE | 57 00 00 00 27 10 01 00 00 00 00 00 00 02 |
| 6,436 | 0 | 0 <- 18 | FDL | Response | ACK NEG RS | |
| 6,610 | 16661 | 1.50 -> 18.48 | DP | Request | C2 READ | 5E 01 6C 80 |
| 6,611 | 0 | 1.50 <- 18.48 | FDL | Response | SC | |