



BINUNLOCK LLC

Automotive software for professional service work

NBT SSH & Storage Workspace 2.1.1

English User Guide

BMW NBT/NBT EVO ENET identification, SSH service operations, and controlled replacement HDD/SSD preparation.

DOCUMENT REVISION 1.0

Qualified service work only.

Read the target-verification and destructive-operation chapters before changing SSH state or preparing a drive.

Contents & document control

APPLICATION NBT SSH & Storage Workspace 2.1.1	PUBLISHER BinUnlock LLC
SUPPORTED UNITS NBT 00001275 · NBT EVO 00001FFD	PUBLISHED 12 August 2026

01 Purpose, scope and supported units	09 Read the head-unit IP and check SSH
02 Safety and operator responsibility	10 Open SSH through the diagnostic procedure
03 Computer, network and workshop requirements	11 Copy details, save the log and close SSH
04 Download, extract and start the application	12 HDD/SSD preparation — preflight and warnings
05 Device activation and license terms	13 HDD/SSD preparation — run and follow-up
06 Main workspace, status and themes	14 Troubleshooting by symptom
07 Safe quick-start sequence	15 Workshop records, privacy and support
08 Discover the gateway and identify the head unit	16 Complete action reference and glossary

DOCUMENT STATUS

This guide applies to version 2.1.1. Replace it when the visible workflow or application version changes.

Purpose, scope and supported units

Use this guide from first launch through the final service record. It applies only to version 2.1.1 and the two listed BMW head-unit bootloaders.

READ FIRST

The screenshots use a controlled local test fixture and demonstration identifiers. No vehicle or customer head unit was contacted to produce this manual.

CURRENT VALIDATION STATUS

Protocol, licensing and local transport tests passed, but a controlled comparison on physical NBT and NBT EVO hardware is still pending. Until that comparison is complete, use the state-changing and HDD/SSD functions only in a controlled qualified-service evaluation, not as an unverified production shortcut.

What the application does

- Discovers a BMW ZGW gateway on the local wired ENET network.
- Connects to and identifies NBT • BTLD 00001275 or NBT EVO • BTLD 00001FFD.
- Reads the head-unit IPv4 address and checks, opens or closes its SSH service.
- Copies SSH connection details and saves a chronological operation log.
- Partitions, formats and mounts a replacement HDD/SSD, then resets the head unit through one SSH session.

What it does not do

- It is not an MGU client and must not be used on an unidentified or unsupported BTLD.
- It does not flash NBT firmware, calculate an E-Sys programming plan, or install maps.
- It does not prove that the selected vehicle, head unit, drive or recovery plan is correct.
- It does not replace BMW service information or a trained technician's judgement.

SUPPORTED TARGETS ONLY

Stop when the detected BTLD is not 00001275 or 00001FFD. Do not use a guessed identity or IP address to bypass this check.

Safety and operator responsibility

Opening SSH changes head-unit service state; preparing a drive is destructive. Verify the target and protect power and networking before any operation.

PERMANENT DATA LOSS

INSTALL / PREPARE HDD OR SSD partitions and formats the drive connected to the head unit. Existing data may be permanently erased.

Before proceeding	Required decision
Authorization	You own the vehicle/head unit or are explicitly authorized to service it.
Vehicle identity	The VIN, selected ZGW, detected BTLD and work order refer to the same target.
Drive identity	The intended replacement HDD/SSD is connected; no irreplaceable drive is exposed.
Power	A regulated workshop support supply can remain stable for the complete operation.
Network	A wired ENET path is stable; sleep, adapter power saving and competing tools are disabled.
Recovery	Required E-Sys/IBAD files, backups and the post-format recovery plan are ready.

- Do not use Wi-Fi as the vehicle link, change adapters, switch a VPN, or allow Windows to sleep during an operation.
- Do not expose ENET diagnostics or SSH to a public or untrusted network.
- Close SSH after the authorized work. Leaving it open can create diagnostic or debug-related problems.
- After an error, preserve the log and establish the last completed stage before repeating anything.

NO BLIND RETRIES

A failed storage job may already have partitioned or formatted the drive. Never assume that no change occurred merely because the final success dialog did not appear.

Computer, network and workshop requirements

Prepare the Windows computer and vehicle link before starting. Most avoidable failures begin with an unstable route, an incorrect IP or missing runtime support.

Category	Requirement	Why it matters
Operating system	Windows 7 SP1, Windows 10 or Windows 11	The application is a 32-bit .NET Framework WinForms program.
Runtime	Microsoft .NET Framework 4.8	Required to launch the application.
Display	1024×768 or greater	Keeps the complete adaptive workspace usable.
Vehicle link	Known-good BMW ENET cable and active IPv4 Ethernet adapter	Discovery and diagnostics use the wired vehicle network.
Power	Regulated workshop-grade support supply	Prevents a head-unit reset during security or storage work.
Computer	AC power; sleep/hibernation disabled	The four-step job must not be interrupted.
Other software	Close E-Sys, ISTA and other active diagnostic sessions	Competing sessions can consume responses or reset the connection.

Purpose	Protocol	Port
ZGW discovery	UDP	6811
ENET diagnostics	TCP	6801
Head-unit SSH	TCP	22

If Windows Firewall asks for access, allow the application only on the trusted/private workshop network. Ordinary use does not normally require Administrator rights.

OFFLINE OPERATION

Licensing and vehicle operations are verified locally. Internet is used only outside the workflow to obtain a license from the official bot or when the BinUnlock favicon opens the website.

Download, extract and start the application

Use the official package and extract it completely before the first workshop job.

- 1 Download `BinUnlock_NBT_SSH_Storage_Workspace_2.1.1.zip` from the approved BinUnlock link.
- 2 Extract the complete archive to a normal writable local folder. Do not run the EXE inside the ZIP preview.
- 3 Keep `NBT_SSH_Storage_Workspace_2.1.1.exe` together with the files supplied in the package.
- 4 Start the application as the normal workshop user; Administrator rights are not normally required.

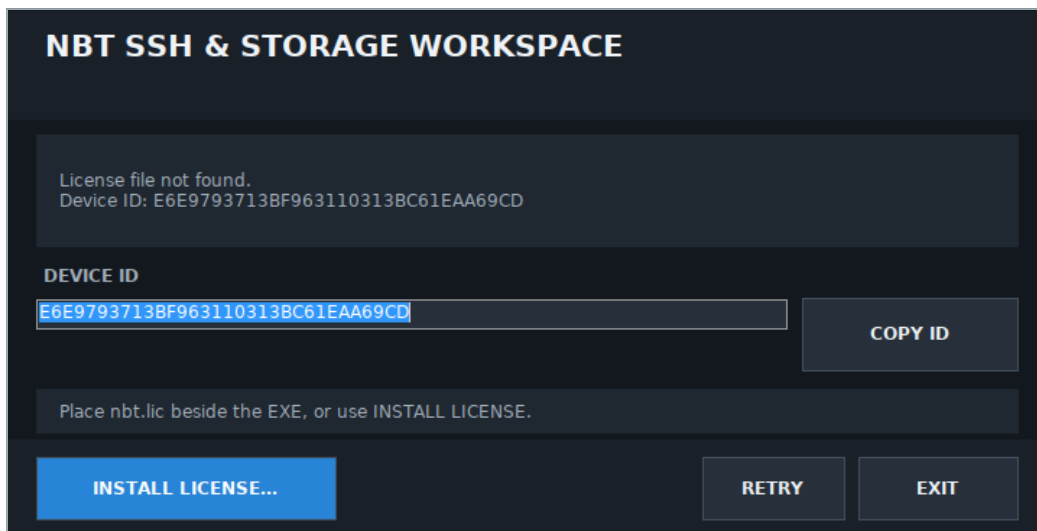
Current official package: [download NBT SSH & Storage Workspace 2.1.1.](#)

DOWNLOAD PROBLEM

If the archive is incomplete or Windows cannot extract it, download the package again from the official link instead of adding files from another source.

Device activation and license terms

The Device License window appears when the application cannot find a valid license for the current computer.



First start with a demonstration Device ID. The screenshot contains no real customer identifier.

- Validation message and current status.
- The 32-character Device ID bound to this computer.
- COPY ID sends the identifier to the clipboard.
- INSTALL LICENSE... imports the unmodified `nbt.lic`.
- RETRY validates a portable license placed beside the EXE.

- 1 Select **COPY ID**, send the complete Device ID to the official activation bot, and choose 10 days, 30 days or permanent.
- 2 Save the returned file as `nbt.lic` without editing it.
- 3 Select **INSTALL LICENSE...**; alternatively place `nbt.lic` beside the EXE and select **RETRY**.
- 4 Confirm the header shows **LICENSE • PERMANENT, 1 DAY LEFT** or **N DAYS LEFT**.

Available terms: 10 days, 30 days, or Permanent. Previously issued v1 licenses are treated as permanent.

If the activation-bot address was not supplied with the software, obtain the official current link through binunlock.com; do not send the Device ID to an unknown third party.

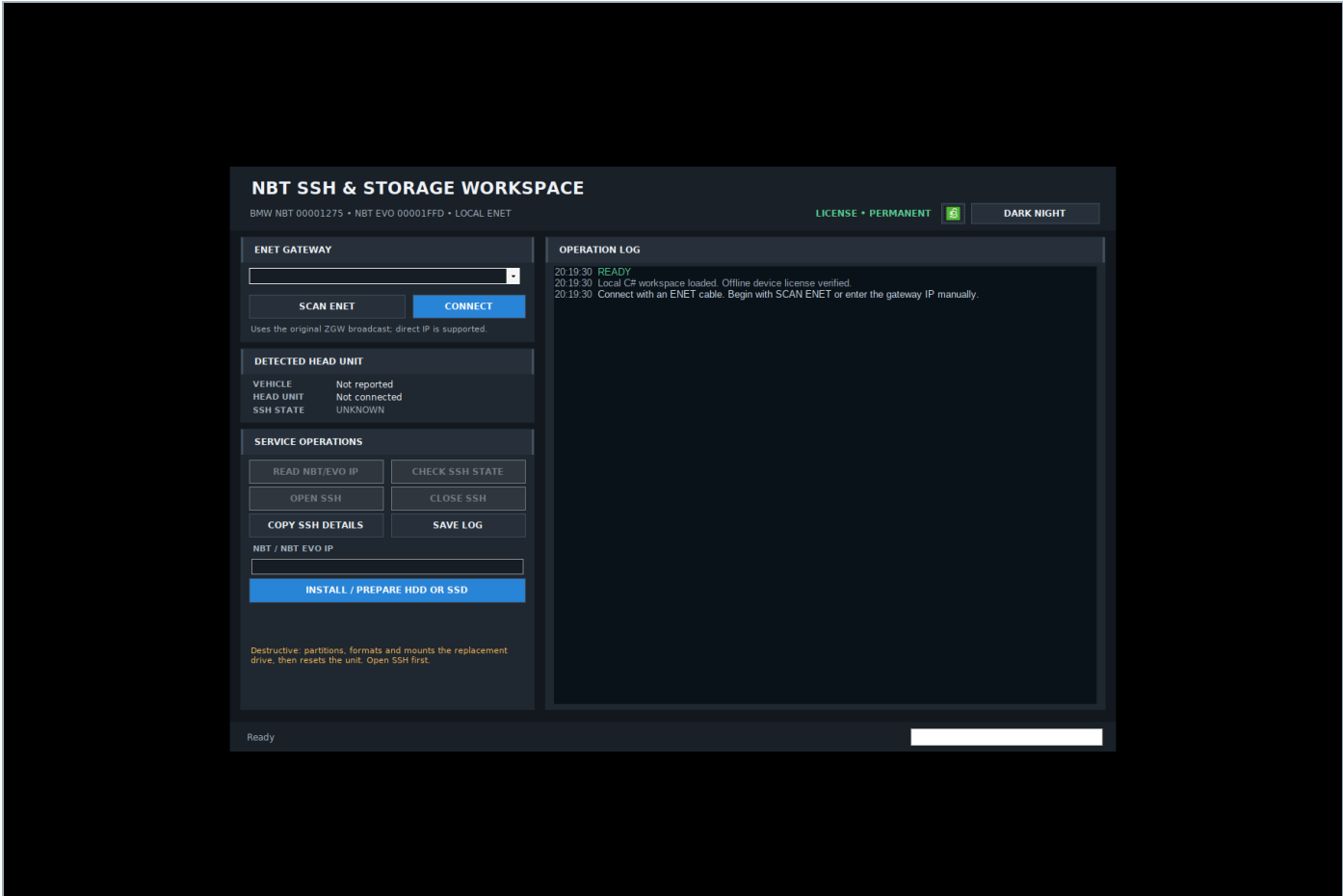
PORTABLE LICENSE PRIORITY

A license beside the EXE takes priority over the installed user-local copy. Remove or replace an old invalid portable `nbt.lic` before troubleshooting a newly installed license.

- Timed licenses are rechecked before each new operation, not only at startup.
- Keep Windows date, time and time zone correct. Moving the clock backwards can block operations.
- A hardware/virtual-machine change may produce a new Device ID. Do not publish, edit or remove the active license.

Main workspace, status and themes

The adaptive workspace keeps the gateway, detected head unit, service actions, operation log and current progress visible together.



The complete activated workspace in DARK NIGHT mode.

- Gateway scan, manual address and connection controls.
- Read, check, open, close, copy and save actions.
- Destructive HDD/SSD action.
- License state, BinUnlock favicon and theme selector.
- Vehicle, supported head unit and SSH state.
- Manual or detected NBT/NBT EVO IP.
- Chronological operation log.
- Current operation and progress bar.

NBT SSH & STORAGE WORKSPACE

BMW NBT 00001275 • NBT EVO 00001FFD • LOCAL ENET

LICENSE • PERMANENT

DAY LIGHT

ENET GATEWAY

SCAN ENET

CONNECT

Uses the original ZGW broadcast; direct IP is supported.

DETECTED HEAD UNIT

VEHICLE	Not reported
HEAD UNIT	Not connected
SSH STATE	UNKNOWN

SERVICE OPERATIONS

READ NBT/EVO IP

CHECK SSH STATE

OPEN SSH

CLOSE SSH

COPY SSH DETAILS

SAVE LOG

NBT / NBT EVO IP

INSTALL / PREPARE HDD OR SSD

Destructive: partitions, formats and mounts the replacement drive, then resets the unit. Open SSH first.

OPERATION LOG

20:22:35 READY
20:22:35 Local CF workspace loaded. Offline device license verified.
20:22:35 Connect with an ENET cable. Begin with SCAN ENET or enter the gateway IP manually.

Ready

The same workflow in DAY LIGHT mode. Theme changes presentation only.

Area	Meaning
ENET GATEWAY	Detected ZGW selection or a manually entered IPv4 address.
DETECTED HEAD UNIT	Vehicle VIN when discovered, supported BTLD identity and SSH state.
SERVICE OPERATIONS	Actions available after a supported unit is identified.
NBT / NBT EVO IP	Head-unit SSH host, read diagnostically or entered after independent verification.
OPERATION LOG	Local timeline of status, progress and errors; it remains in memory until saved.
Bottom bar	Current operation and progress. Wait while controls are temporarily disabled.

- Select the green BinUnlock favicon to open <https://binunlock.com> in the default browser.
- Select **DARK NIGHT** or **DAY LIGHT**, or press **Ctrl + Shift + T**, to change theme without restarting.
- The theme choice is saved for the current Windows user.

Safe quick-start sequence

Follow the same order on every unfamiliar vehicle. Identify and read first; make service-state changes only after the target is certain.

- 1 Connect regulated support power, the ENET cable and computer AC power.
- 2 Close other diagnostic programs and disable sleep, hibernation and VPN switching.
- 3 Select **SCAN ENET**, then match the complete VIN to the work order; or enter a separately verified ZGW IP.
- 4 Select **CONNECT** and confirm **NBT • BTLD 00001275** or **NBT EVO • BTLD 00001FFD**.
- 5 Select **READ NBT/EVO IP** and independently verify the returned head-unit address.
- 6 Select **CHECK SSH STATE** before deciding whether **OPEN SSH** is required.
- 7 Perform the authorized work. Save the log whenever diagnosis or recovery evidence may be needed.
- 8 Select **CLOSE SSH**, verify the state when required, and select **DISCONNECT** when finished.

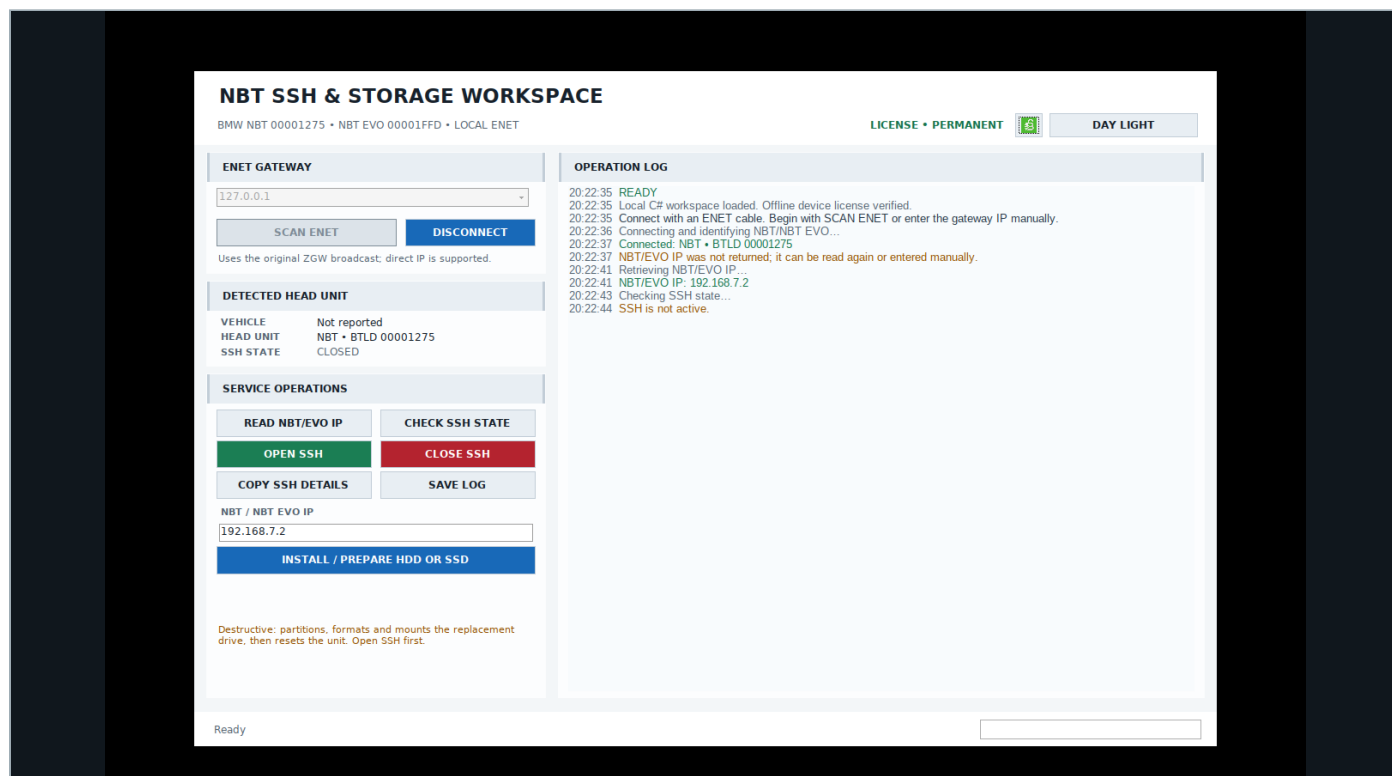
STOP CONDITIONS

Stop when the VIN is wrong, the BTLD is unsupported, power or networking is unstable, the IP is uncertain, another tool owns the session, or the recovery plan is incomplete.

Discover the gateway and identify the head unit

Automatic discovery is preferred because it can associate the ZGW response with a VIN. Direct gateway IP entry remains available for a controlled bench or known network.

- 1 Select **SCAN ENET**. The application broadcasts on the active local IPv4 adapters.
- 2 When entries appear, select the one whose VIN matches all 17 characters of the current vehicle.
- 3 If no gateway responds, check cable, link LEDs, wake state, IPv4 adapter, firewall and VPN routes. A known ZGW IP can be typed directly.
- 4 Select **CONNECT** and wait for identification to finish.
- 5 Confirm the detected head unit is one of the two supported BTLD values. Service buttons become available and **CONNECT** changes to **DISCONNECT**.



A supported NBT identified against a controlled local documentation fixture — no vehicle connected.

- Selected or manually entered ZGW address.
- Supported NBT identity and reported vehicle data.
- The log records the exact target and connection result.
- CONNECT** changes to **DISCONNECT**.
- Service actions are enabled after identification.

MANUAL IP LIMITATION

A manually entered gateway does not supply discovery VIN data, so **VEHICLE** may remain **Not reported**. Independently verify the target before any state-changing action.

Read the head-unit IP and check SSH

The ZGW gateway IP and the head-unit SSH IP are different roles. Read or verify the head-unit address before copying credentials or preparing storage.

- 1 With a supported unit connected, select **READ NBT/EVO IP**.
- 2 Confirm the returned address appears in **NBT / NBT EVO IP** and in the operation log.
- 3 If reading fails but a known address is available, enter it manually only after independent verification.
- 4 Select **CHECK SSH STATE**.
- 5 Read **SSH STATE** and the matching log line: **SSH is active.** or **SSH is not active.**

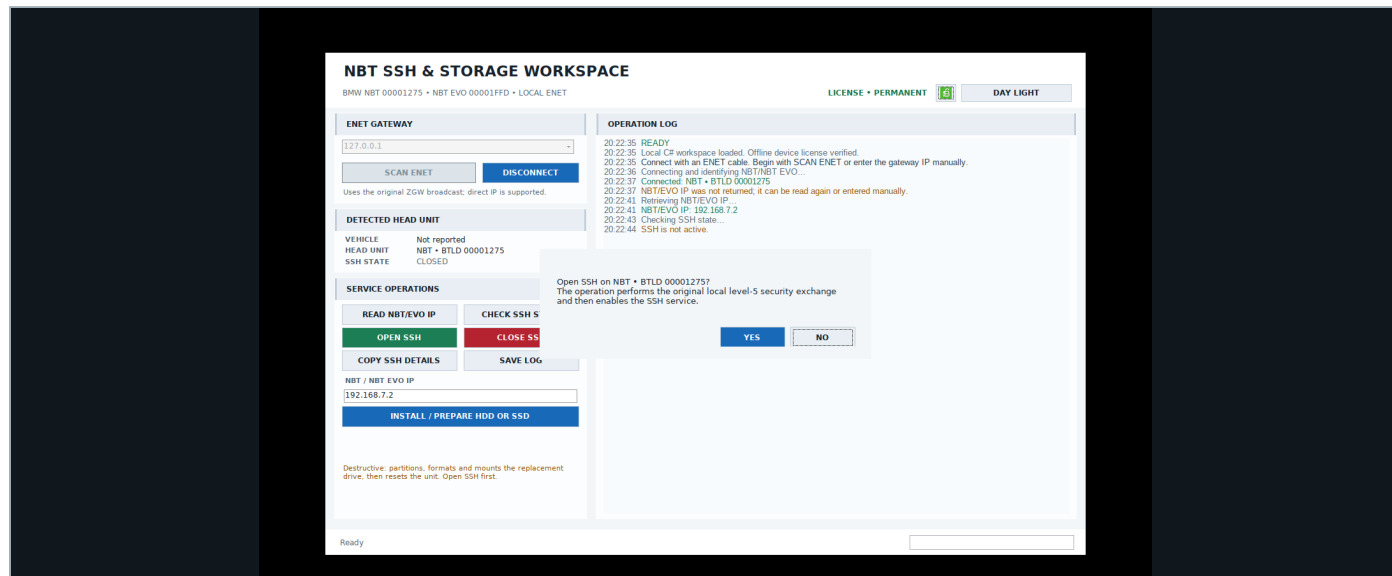
State	Meaning / next action
UNKNOWN	No state check has completed in the current session.
CLOSED	SSH is not active; use OPEN SSH only after confirming the target.
OPEN	SSH is active; do not repeat the open procedure unnecessarily.

ADDRESS VERIFICATION

COPY SSH DETAILS does not validate the address. Never copy or use credentials until the NBT/NBT EVO IP is known to belong to the intended head unit.

Open SSH through the diagnostic procedure

OPEN SSH performs the original local level-5 security exchange. Keep ENET and power stable through all six progress stages.



The final target confirmation before the diagnostic security exchange.

- The identified NBT/NBT EVO target.
- Description of the level-5 procedure.
- Yes begins the operation; No leaves the unit unchanged.

- 1 Confirm the correct supported head unit is displayed.
- 2 Select **OPEN SSH** and read the target confirmation.
- 3 Select **Yes** only when the vehicle, BTLD, power and network are correct.
- 4 Wait while the application reads identification, enters the diagnostic session, completes the security exchange and enables SSH. Do not interrupt ENET or power.
- 5 On success, confirm **SSH fully opened.** in the log and **SSH STATE OPEN** in the unit panel.

SUCCESS INDICATORS

The log ends with **SSH fully opened.**, the unit panel changes to **SSH STATE OPEN**, and the progress bar returns to the ready state.

WHEN OPEN SSH REPORTS AN ERROR

Save the log and run **CHECK SSH STATE** before deciding whether to retry. A transport error does not by itself prove whether the final service-state request was accepted.

Copy details, save the log and close SSH

The copy and log controls create local workshop information. Closing SSH is a separate service action and should be verified when the final state matters.

Copy SSH details

- After verifying the head-unit IP, select **COPY SSH DETAILS**.
- The clipboard receives host, TCP port 22, the service user and password.
- The button does not open a terminal, test the login or verify the address.
- Treat the clipboard contents as service credentials; do not publish them with VIN or customer information.

Save the operation record

- 1 Select **SAVE LOG**.
- 2 Keep the default filename **NBT_Workspace_log.txt** or use a vehicle-specific filename.
- 3 Choose a writable support folder and retain Before/After files separately.
- 4 Review VINs, IP addresses, fingerprints and command output before sharing the log publicly.

Close SSH

- 1 After authorized SSH/storage work, select **CLOSE SSH**.
- 2 Confirm the close dialog and wait for **SSH close command accepted**.
- 3 Select **CHECK SSH STATE** if the closed state must be proven.
- 4 Select **DISCONNECT** when diagnostic work is complete.

MANUAL-IP STORAGE MODE

After a standalone manual-IP storage job, reconnect and identify the supported head unit over ENET before using **CLOSE SSH** or **CHECK SSH STATE**; those diagnostic buttons require an identified session.

ACCEPTED IS NOT VERIFIED

The close command being accepted and a later state check are separate results. Use **CHECK SSH STATE** when confirmation is important.

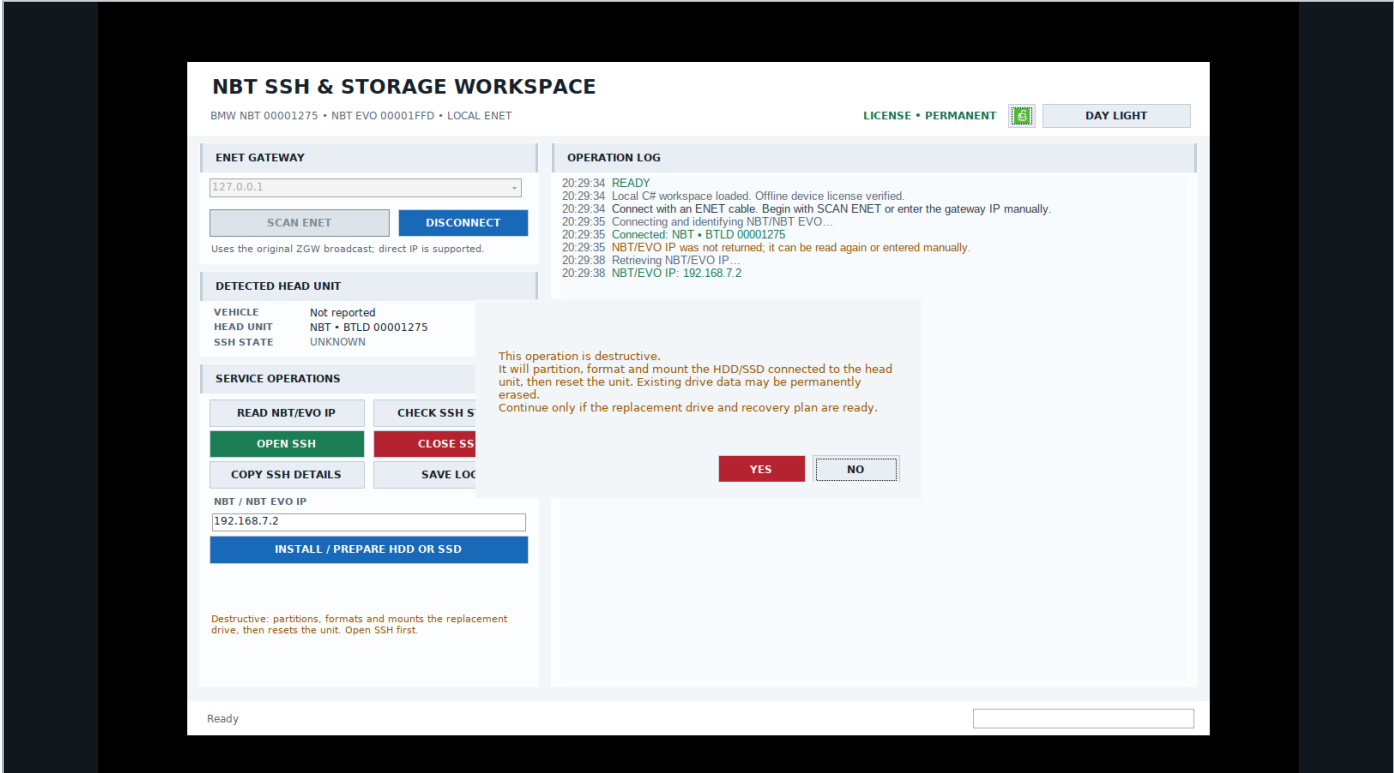
HDD/SSD preparation — preflight and warnings

The standalone storage path can use a manually entered head-unit IP without an active ENET session, but SSH must already be open and every recovery prerequisite must be ready.

CONTROLLED EVALUATION ONLY

A complete comparison on physical NBT and NBT EVO hardware is still pending. Do not treat the destructive path as broadly validated production service until that comparison is recorded.

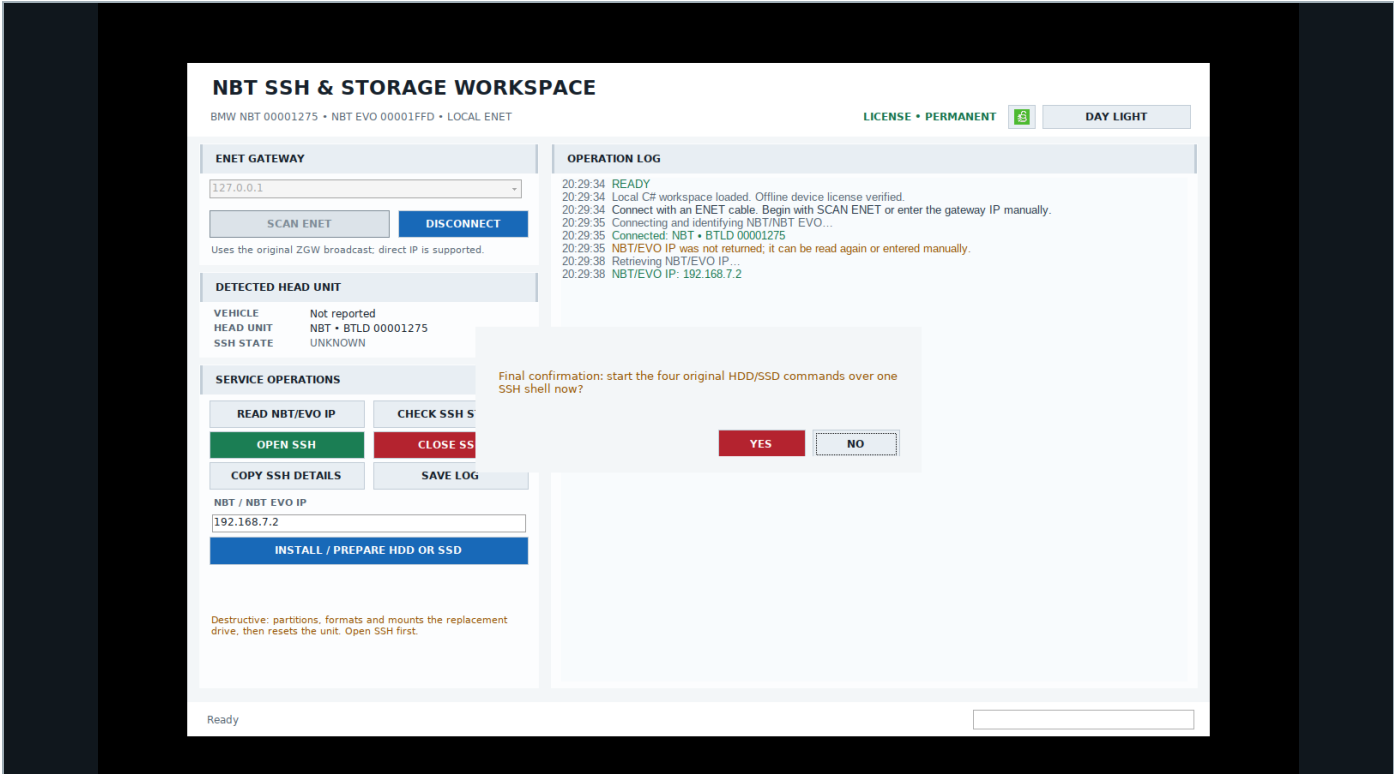
Preflight item	Required state
Head unit	Supported NBT/NBT EVO identified or independently verified on a controlled bench.
IP address	Correct NBT/NBT EVO SSH host entered in the dedicated field.
SSH	Opened and preferably confirmed with CHECK SSH STATE.
Replacement drive	Correct HDD/SSD physically attached; erasure is authorized.
Power/network	Stable for partition, format, mount and reset.
Recovery files	Required E-Sys/IBAD material and post-format procedure available.
Records	Relevant pre-work log already saved.



The first destructive-operation warning. No storage command has been sent yet.

- The operation partitions, formats and mounts the attached drive.
- Existing data can be permanently erased.
- Yes advances to the final confirmation; No exits safely.

Final confirmation



The final confirmation immediately before one SSH shell runs all four stages.

- Four original storage commands will be used.
- The stages run over one continuous SSH shell.
- Proceed only with stable power, networking and a recovery plan.

LAST SAFE EXIT

Selecting No in either warning sends no storage command. After the final Yes, protect power and networking and follow the live log rather than attempting to cancel casually.

HDD/SSD preparation — run and follow-up

The application opens one SSH connection and one interactive shell, then waits for a completion marker from each of four ordered stages.

Stage	Purpose	Operator action
1 / 4	Partition the replacement drive	Monitor; do not interrupt.
2 / 4	Format the drive	Monitor; existing data is being erased.
3 / 4	Mount the prepared drive	Wait for the completion marker.
4 / 4	Reset the head unit	Allow the unit to reboot fully.

- The workflow advances only after all four current completion markers are received.
- The operation log includes the SSH host-key fingerprint, stage output and completion lines.
- Do not remove power, unplug ENET, close the program or launch another service tool while active.

EXPECTED SUCCESS

The final dialog confirms receipt of all four stage markers and instructs you to reflash NBT/EVO with E-Sys or the required IBAD files before returning the unit to service.

REVIEW EACH STAGE OUTPUT

A marker confirms that the shell reached the end of that stage; it does not independently validate the partition table, filesystem, mount or reset result. Review the output before every marker for errors and validate the drive/head unit after the job.

After a successful job

- Allow the reset/boot to finish, then reflash NBT/NBT EVO with E-Sys or the required IBAD files.
- Complete drive adaptation/validation and install maps by USB where applicable.
- Verify normal head-unit function, close SSH and save the final log.

If the job fails

- Keep regulated power connected unless electrical safety requires immediate isolation.
- Save the log; record the last **STEP n/4 done**, exact error, IP and time.
- Assume the drive may have changed; inspect its state and choose recovery from evidence rather than restarting blindly.
- Escalate with the complete log when the accepted state is uncertain.

NO SUCCESS DIALOG

If the success dialog did not appear, the application did not confirm all four stages. That is not proof that none of the earlier stages changed the drive.

Troubleshooting by symptom

Work from the earliest failed prerequisite. Preserve evidence and correct the route or entitlement before repeating a state-changing operation.

Symptom	Recommended action	Do not do
EXE does not start / integrity error	Re-extract the official package and try the unchanged EXE again.	Do not patch it or download random helper DLLs.
License file not found	Use INSTALL LICENSE... or place an unmodified <code>nbt.lic</code> beside the EXE.	Do not rename unrelated licenses.
License belongs to another computer	Copy the current Device ID and request a license for it.	Do not edit HWID fields.
License expired / future issue time	Renew the license or correct Windows UTC time and time zone.	Do not roll the clock backwards.
New license still rejected	Remove an older portable <code>nbt.lic</code> beside the EXE; it has priority.	Do not alter protected state files.
No ENET gateway found	Check power, wake state, cable/link, IPv4 adapter, firewall and VPN; enter a verified ZGW IP if known.	Do not guess a vehicle target.
Gateway connection fails	Verify the ZGW IP, close other diagnostic tools and confirm TCP 6801 is available.	Do not hammer CONNECT.
SSH buttons disabled	Connect and wait for a supported BTLD to be identified.	Do not attempt storage on an unidentified unit.
IP read fails	Reconnect and retry, or enter a separately verified head-unit address.	Do not confuse ZGW IP with NBT IP.
OPEN SSH fails	Keep power stable, save the log, reconnect if required and check SSH state before retrying.	Do not assume the final state.
Storage SSH connection fails	Verify SSH is open, the IP is correct and TCP 22 is reachable.	Do not proceed on another IP.
HDD/SSD marker timeout	Preserve power and the log; identify the last confirmed step and inspect the resulting state.	Do not blindly restart all four stages.
Log cannot be saved	Choose a writable folder under the current Windows user.	Do not close before retaining needed evidence.
Layout appears cramped	Resize the window; use at least 1024×768 and restart only when idle after a DPI change.	Do not alter operational steps to fix display scaling.

STARTUP ERROR FILE

When startup fails, the application attempts to write `%TEMP%\NBT_Workspace_startup_error.txt`. Include it with the application version, but never publish `nbt.lic` or service credentials.

Workshop records, privacy and support

A complete record makes the service decision reproducible and preserves the evidence needed after an interrupted security or storage operation.

Record	Suggested content
Application identity	Version 2.1.1 and the official package source.
Vehicle identity	Full VIN, selected ZGW IP and detected NBT/NBT EVO BTLD.
Network state	NBT/EVO IP, adapter, connection method and timestamp.
SSH work	Initial state, action taken, final state and saved operation log.
Storage work	Drive identity, approval, last/completed step, E-Sys/IBAD follow-up and final validation.
Failure evidence	Complete dialog text, screenshot, progress, supply/network state and Windows version.

- Store VINs and customer data only in the protected work-order system required by your policy and jurisdiction.
- Review or redact logs before posting them publicly; they can contain VIN, IP and SSH fingerprint data.
- Do not send `nbt.lic` or service credentials to third parties.
- Keep pre-work and post-work logs as separate files; never overwrite the only Before record.

USEFUL SUPPORT PACKAGE

Send the application version, Windows version, selected gateway, detected BTLD, last action, complete error text, screenshot, saved log and last confirmed HDD/SSD step. A cropped error dialog alone is not enough.

Official product and support site: <https://binunlock.com/>. The same fixed address opens from the green favicon in the application.

Complete action reference and glossary

Use this final section as a quick index after the complete workflow and safety requirements are understood.

Action	Class	Result
SCAN ENET	DISCOVERY	Searches local IPv4 adapters for ZGW gateway responses.
CONNECT / DISCONNECT	CONNECTION	Identifies a supported unit or closes the diagnostic socket.
READ NBT/EVO IP	READ	Reads and fills the head-unit IPv4 address.
CHECK SSH STATE	READ	Reports OPEN or CLOSED when the diagnostic check completes.
OPEN SSH	CONTROL	Runs the confirmed six-stage local security procedure and enables SSH.
CLOSE SSH	CONTROL	Sends the confirmed SSH-close operation.
COPY SSH DETAILS	LOCAL	Copies the current host and service credentials to the clipboard.
SAVE LOG	FILE	Saves the visible log, default <code>NBT_Workspace_log.txt</code> .
INSTALL / PREPARE HDD OR SSD	DESTRUCTIVE	Runs partition, format, mount and reset over one SSH shell.
BinUnlock favicon	LINK	Opens https://binunlock.com .
DARK NIGHT / DAY LIGHT	DISPLAY	Switches and persists the current-user theme.

Glossary

Term	Meaning in this guide
BTLD	Bootloader software-part identifier used to distinguish the supported NBT generations.
ENET	BMW Ethernet diagnostic connection.
ZGW	BMW central gateway discovered or entered as the diagnostic endpoint.
NBT / NBT EVO IP	Head-unit network address used for SSH; not necessarily the ZGW address.
SSH	Secure Shell service used for the authorized storage workflow.
IBAD	Head-unit data/programming files referenced by the required post-format recovery process.
HWID / Device ID	Computer identifier to which the offline license is bound.
Completion marker	Per-stage shell output that confirms the application may advance to the next storage stage.

FINAL CHECK

Before leaving the job: confirm the intended target, save the final log, close SSH, disconnect cleanly, finish required E-Sys/IBAD/map work and validate normal head-unit function.