

# LVHN eKVM Remote Update – Operator User Manual

## Configuration Custody Notice

Ionic Health engineering exclusively manages all eKVM configuration, firmware, and software changes, including patch execution via the jumper server. LVHN operations is solely responsible for provisioning, hardening, and maintaining the Windows jumper server. cross-domain actions require written approval from both teams.

## Network Visibility Scope

Operators only require connectivity through the LVHN jumper server; Ionic Health does not inspect or manage LVHN internal network segments beyond that demarcation.

## 1. Audience and Scope

This manual guides Ionic Health operators through the end-to-end process of updating eKVM devices via the LVHN-managed Windows jumper server. All instructions assume the operator has approved change tickets and VPN credentials issued by LVHN.

## 2. Pre-Window Checklist

Step	Validation	Responsible
Confirm change ticket approval.	ServiceNow status = “Approved”	Ionic PMO
Verify maintenance window time and device list.	Change ticket attachments	Ionic Operator
Ensure VPN credentials + MFA token are active.	LVHN IAM confirmation	Ionic Operator
Confirm ACL change request executed.	Connectivity test to jumper server (TCP 3389)	LVHN Network
Download latest firmware/software hashes.	Ionic release portal	Ionic Operator

### 3. Quick Navigation Diagram

flowchart TD

```
A[Preparation Complete?] -->|No| B[Pause & Resolve Gaps]
A -->|Yes| C[Connect via VPN]
C --> D[Launch RDP to Jumper Server]
D --> E[Verify Package Integrity]
E --> F[Execute Update Procedures]
F --> G[Run Post-Update Validation]
G --> H[Collect Evidence + Logs]
H --> I[Close Change Ticket]
```

### 4. Connecting to the Environment

1. Launch LVHN SSL VPN client and authenticate with username, password, and MFA.
2. Confirm tunnel status shows maintenance VLAN access (per LVHN VPN guide).
3. Open Remote Desktop Connection:
  - Host: `jumper-server-01.lvhn.local`
  - Credentials: JIT account provided for the window.
  - Verify NLA prompt to ensure secure channel.

### 5. Integrity Validation

sequenceDiagram

```
participant Op as Operator
participant JS as Jumper Server
participant Repo as Ionic Repository

Op->>JS: Start PowerShell (Run as Admin)
JS->>Repo: Invoke-WebRequest (HTTPS)
JS->>JS: Compute SHA-256 hash
JS->>Op: Display hash comparison results
Op->>Op: Log outcome in evidence sheet
```

Example command:

```
$expectedHash = "<SHA256_FROM_RELEASE_PORTAL>"
$binaryPath = "C:\eKVM\Packages\eKVM-Firmware-3.2.1.exe"
(Get-FileHash -Path $binaryPath -Algorithm SHA256).Hash -eq $expectedHash
```

### 6. Executing the Update

Follow docs/procedures/MOP-eKVM-Update.md Section 5. Key checkpoints: - Snapshot current eKVM configuration using WinRM script. - Run firmware installer silently: `powershell Start-Process $binaryPath -ArgumentList "/quiet /norestart" -Wait` - Monitor installation logs under `C:\eKVM\Logs`.

## 7. Post-Update Validation

Validation	Command / Action	Expected Result
Device reachable	Test-NetConnection <eKVM-IP> -Port 5986	TcpTestSucceeded: True
Version check	Get-Item "\\<eKVM-IP>\C\$\Program Files\Ionic\eKVM\version.txt"	Matches release version
Service health	Get-Service -ComputerName <eKVM-IP> Ionic*	Status = Running
Event logs	Filter Windows Event Viewer for errors post-update	No critical errors

## 8. Evidence Collection

- Export PowerShell transcript: Start-Transcript / Stop-Transcript
- Capture hash verification screenshots.
- Download RDP session logs (if enabled) to evidence folder.
- Append SIEM query results demonstrating log ingestion.

## 9. Change Ticket Closure Workflow

```
flowchart LR
    Start((Maintenance Complete)) --> Evidence[Assemble Evidence Bundle]
    Evidence --> Review[Peer Review Evidence]
    Review --> OK{All Requirements Met?}
    OK -- No --> Remediate[Document Follow-up Actions]
    OK -- Yes --> Submit[Update Change Ticket]
    Submit --> Approval[LVHN Change Reviewer Approval]
    Approval --> End((Close Ticket))
```

### Required Attachments

- PowerShell transcripts
- Hash verification results
- eKVM version validation screenshot/log
- SIEM confirmation logs
- Incident notes (if anomalies occurred)

## 10. Troubleshooting Reference

Symptom	Possible Cause	Resolution
Cannot reach jumper server	VPN tunnel or ACL inactive	Re-open change ticket with LVHN network; confirm schedule
Hash mismatch	Corrupted download or wrong package	Re-download; confirm hash from release portal; escalate to Ionic QA
Patch script timeout	WinRM throttling or service hang	Restart WinRM service on eKVM ( <code>winrm quickconfig</code> ), re-run script
Logs missing in SIEM	Event forwarding service stopped	Restart Windows Event Forwarding service; notify LVHN SOC

## 11. References

- `docs/procedures/MOP-eKVM-Update.md`
- `docs/solution/Functional-Solution-Design.md`
- `runbooks/RDP-Hardening-Guide.md`
- `runbooks/WinRM-Setup-and-File-Transfer.md`