



Firmware for EDR-810 Series Release Notes

Version: v5.3	Build: Build_19090614
Release Date: Sep 06, 2019	

Applicable Products

EDR-810 Series

Supported Operating Systems

N/A

New Features

- Supports 12-digit production serial number with SNMP MIB.
- Added the command “show usage” to display instant CPU and memory utilization.

Enhancements

- Upgrade syslog agent for memory usage improvement and implement memory usage monitoring for syslog agent with log event.
- Show ARP table in web console and the command line interface.
- The prefix of the command line interface is changeable according to the device’s hostname.

Bugs Fixed

- Boot-up time optimization with continuous ping response.
- The customized function code (e.g. function code 90) in Modbus policy whitelist was dropped when enabling “Drop Malformed Packet”.
- Incorrect display of port description in the command line interface.
- The HTTP URL buffer overflow issue caused privilege escalation for command injection (BDU:W-2019-0011) (BDU:W-2019-0014).
- The HTTP cookie buffer overflow issue caused privilege escalation for command injection (BDU:W-2019-0012) (BDU:W-2019-0013).
- The command injection by crafted operation that led to RCE vulnerability in web console.
- Invalid “save” command in the command line interface.
- Incorrect “admin” login failure log message if the default admin account was removed.
- Abuse of the ping feature to execute unauthorized commands (CVE-2019-10969).
- Unauthenticated users could retrieve system logs from the device, which may allow sensitive information disclosure. Log files must have previously been exported by a legitimate user. (CVE-2019-10963).
- SACK Panic vulnerability (CVE-2019-11477, CVE-2019-11478, and CVE-2019-11479).
- Improper input validation (CVE-2019-10969).
- Improper access control of the log information (CVE-2019-10963).
- DVMRP did not work properly after importing the configuration file or after rebooting the system.
- The exported configuration file did not contain the “Source IP-MAC Binding” of the policy settings.
- The exported configuration file did not display the correct source MAC address when the first digit of the source MAC address was “0”.
- The Layer 2 policy rule did not filter the BPDU-type packets (e.g. RSTP) correctly when the function “Arp-Flood” of DOS protection was enabled.
- The Modbus policy did not filter the function 6 correctly.
- The “Source MAC Address” information of the L3 policy was displayed in the command line interface.
- Supports “Fiber Check” (SFP DDM).
- Some typos on the web GUI.
- Radius authentication for the web console login works improperly under some special conditions.



- Incorrect prompt message after configuring the maximum log in sessions in the command line interface.
- The “show ip http-server” command gets the incorrect prompt message from the maximum login sessions.

Changes

N/A

Notes

N/A



Version: v5.1	Build: 19031409
Release Date: Mar 17, 2019	

Applicable Products

N/A

Supported Operating Systems

N/A

New Features

N/A

Enhancements

N/A

Bugs Fixed

- The EDR-810 stopped sending IGMP querier after a certain period of time and caused a problem with multicast streaming.
- There was an RSTP compatibility issue with Moxa's EDS-408A Series.
- The configuration file could not be automatically loaded from the ABC-02 after rebooting.
- MXview displayed incorrect "Port utilization" information from the EDR-810 device.
- After the EDR-810 was rebooted, the IPsec VPN did not work properly.
- The console function stopped working after the "Time & Date" web page was entered in the web console.
- There was incorrect packet filtering behavior by "Drop Malformed Packets" in the Modbus Policy function.

Changes

N/A

Notes

N/A

Version: 5.0	Build: N/A
Release Date: Aug 30, 2018	

Applicable Products

N/A

Supported Operating Systems

N/A

New Features

- Support 12 digits serial number in EDR-810 HW revision v2.0.0
- Support VPN and VRRP LED in EDR-810 HW revision v2.0.0
- MIB ifadminstatus supports port setting.

Enhancements

- Support default reoute in "Static Route" function.
- Support "STP Topology Changed" in Event log.
- Support "RSTP Topology Changed" notification in System Event Setting.
- Upgrade to OPENSSSL v1.0.2 package.
- System reboot when out-of-memory is detected.
- Support service port setting in Modbus firewall.
- Show error message to remind wrong old password.
- Time zone formate of exported event log.
- Add RSTP path cost setting check mechanism.

Bugs Fixed

- Fix CVE-2015-0235, CVE-2018-16282.
- Fix XSS attack vulnerability.
- Switching function failure but serial console is workable.
- System information isn't sync in real time with Syslog event.
- "Keep certificate" function isn't supported in model EDR-810-2GSFP and EDR-810-2GSFP-T.
- EventlogEntry has conflicting syntax after compiling MIB.
- When system reboot, system will send Turbo ring v2 topology change event log.
- Gibberish shown in Web GUI.
- DHCP and NAT setting through Quick Stting Profile isn't valid.
- Packet loop caused by trunk port link off and link on.
- After importing configuration file, trunk port will shut down.
- Packet counter statics can't show fiber interface packet amount information.
- User can't use MIB file to read event log.
- RSTP configuration import failure.
- Unstable network connection caused by the same virtual IP and interface IP.
- "Bandwidth Utilization" display mode always show 0%
- In Web GUI and CLI, the display of RSTP edge port status isn't sync.
- User can't get ring master MAC address through MIB file.
- Abnormal VRRP behavior due to VRRP virtual IP isn't updated in routing table
- System looping caused by bridge priority change
- Low RSTP convergence speed.
- There is possibility that VRRP can't work normally with VLAN ID over 15.
- VRRP setting isn't sync with VLAN setting.
- With RSTP enable, there is possibility that system looping will happen when system has link on/off or reboot.
- After trunk port disabling, MAC address table won't sync up.



- Turbo Ring function won't be disabled after RSTP configuration is imported.
- When using link-off port to set VRRP, the VRRP status shows master other than init.
- LLDP port event won't update in real time when port link down.
- CLI can't disable tracking interface of VRRP.
- Network interface of VRRP doesn't sync with VLAN interface setting.
- Export configuration file after removing WAN interface. And then use this configuration file to import in the system, but system shows MTU configuration import failure.
- Firewall blacklist can't support Modbus function code 5, 6, 8, 21, 22.
- Firewall rule with master query and slave response in Modbus function code 20 are invalid.

Changes

- Rename RSTP "Port Cost" parameter to "Path Cost".

Notes

N/A



Version: v4.2	Build: Build_18041013
Release Date: N/A	

Applicable Products

EDR-810-2GSFP, EDR-810-2GSFP-T, EDR-810-VPN-2GSFP, EDR-810-VPN-2GSFP-T

Supported Operating Systems

N/A

New Features

- Firewall supports source MAC address filter.
- Supports MTU defined by user and MTU for PRP packet.
- Supports ping track and preempt delay function in VRRP.
- Supports port status monitoring function in Web UI.
- Supports DHCP option 012 hostname.

Enhancements

- User interface enhancement.
- Supports hash algorithm SHA-256 in OpenVPN.
- Supports Advanced Encryption Standard for SNMP v3.
- Upgraded to OpenVPN package v2.4.3.
- Cancelled these SSH algorithms for higher security level: Ciphers aes128-ctr, aes192-ctr, aes256-ctr, MACs hmac-ripemd160,hmac-sha2-256, hmac-sha2-512.
- Supports option to keep "Certificate Management" and "Authentication Certificate" configuration when resetting to factory default.
- System information including router name and router location will sync with public MIB file.
- Cancelled secLocalNextHop and ipsecRemoteNextHop information in private MIB file.
- EDR-810 IPsec VPN support certificate uses SHA-256 hash algorithm.
- Strengthened SSL certificate security level with 2048 bit key length with SHA-256 hash algorithm.
- EDR-810 user account and password can be stored in Web browser cookies using SHA-256 hash algorithm.
- Optimized fast bootup work flow to improve instability of fast bootup function.

Bugs Fixed

Bootup process fails when rebooting EDR-810 and causes un-recoverable status.

Changes

- Web GUI user experience enhancement.
- Changed default privilege of SNMP "public" community to read only.
- Changed IPsec log event content.

Notes

N/A



Version: v4.1	Build: Build_17030317
Release Date: N/A	

Applicable Products

EDR-810-2GSFP, EDR-810-2GSFP-T, EDR-810-VPN-2GSFP, EDR-810-VPN-2GSFP-T

Supported Operating Systems

N/A

New Features

- Compliant with IEC 62443-4-2 level 2.
- Allows users to input “/” and “\” characters for the PPPoE username.
- Supports ifAdminStatus MIB information as device’s port setting.
- Supports 1-1 NAT redundancy of two routers by VRRP binding.
- Supports setting a virtual MAC address for each interface.
- Supports Modbus protocol version 1_1b (address range: 0-65535).
- Added city feature in the time zone settings for CLI commands.
- Supports RADIUS CHAP authentication.
- Integrated the certificate database for IPsec, OpenVPN, and X.509.
- The ABC-02-USB interface can be disabled.
- Web panel shows the real-time status of the router as indicated by the LEDs.
- IPsec supports multiple local subnets and remote subnets.
- Supports AES encryption method for SNMP V3.
- Displays all protocol types (HEX) in the firewall event log.
- Supports “@” character in the SMTP account settings from web console.
- Improved PPPoE performance.
- Supports special characters, “^0-9a-zA-Z_@!#\$%^&*().-+”\$, as part of the account password.
- Removed the limitation on configuration imports between standard temperature and wide temperature models.
- Allows the IGMP querier to input the querier interval from 12 seconds to 300 seconds.

Enhancements

N/A

Bugs Fixed

- Relay warning configuration was not correct after exporting or importing the configuration file.
- Configuration import/export issues with the functions of Modbus Filtering, VLAN settings, VRRP settings, static routing settings, and RSTP settings.
- Management VLAN configuration showed an error after upgrading from previous firmware versions to version 3.x.
- With the ABC-02-USB inserted, VRRP did not work properly after booting up.
- Link-on and link-off operations of the WAN port caused the static route policy to disappear.
- After changing the password of “admin” from the serial console, users could not log in to the router with that account.
- No encryption of password-type information in the exported configuration file.
- Web content did not display correctly in some browsers.
- SNMP service sometimes stopped working and needed to reboot the router to recover.
- Sent out IGMP querier packet with the incorrect source interface.
- Removed unused residual web pages from the system.
- “User” privilege was allowed to export configuration files.
- Time zone setting had a problem.
- Users could not clear SMTP email settings in the router from the web console.
- Fixed SNMP OID “ifAdminStatus” status.



- The “Cold start” event was sometimes not recorded in the system log.
- Changed the default settings of preemption delay from 5 seconds to 120 seconds to enhance the stability of VRRP.
- Improved VRRP stability.
- HTTPS interface control was not effective after upgrading from version 1.0 to version 3.x.
- Incorrect filtering operation of the Modbus slave response message to function code 05, 06, 14, 15, 16, 20, 22, 24, and 43.
- Change of interface settings caused the VRRP configuration to be removed.
- Incorrect display of device IP address in MXview when 1:1 NAT function of the router was enabled.
- IGMP table did not show the correct information.
- Password policy settings did not export and import correctly.
- IPsec DPD would stop reconnecting after a certain period of time.
- IPsec tunnel rebuild time was too long after disconnecting the WAN interface for a long time.
- IPsec did not retry to connect the remote VPN server when the IPsec Phase 1 status was down. (Phase 2 status was still established.)
- IPsec sometimes did not work when the VPN local subnet was the same as the N-1 NAT local subnet.
- Failed to access EDR’s service through an IPsec tunnel when port forwarding (same as EDR’s service port) NAT was enabled.
- NAT function did not take effect in the “Interface Type Quick Setting”.

Changes

N/A

Notes

- The change of an interface’s VLAN ID and switching between static mode and DHCP mode still causes the removal of related VRRP rules. Other changes, including IP address, subnet mask, gateway, and virtual MAC address, do not cause any change in VRRP configuration.



Version: v3.13	Build: Build_16051215
Release Date: Dec 18, 2017	

Applicable Products

EDR-810-2GSFP, EDR-810-2GSFP-T, EDR-810-VPN-2GSFP, EDR-810-VPN-2GSFP-T

Supported Operating Systems

N/A

New Features

- Supports "@" character for email account setting.

Enhancements

N/A

Bugs Fixed

- Removed the extra 4-byte padding for packets passing through the EDR-810 in zone-based bridge mode.
- Importing the configuration of "Port-based bridge mode enabled" setting to a default EDR-810 would incorrectly become "Port-based bridge mode disabled".
- Improving the router uptime for the operation of zone-based firewall mode after importing the configuration file.

Changes

N/A

Notes

N/A



Version: v3.9	Build: Build_16012113
Release Date: N/A	

Applicable Products

EDR-810-2GSFP, EDR-810-2GSFP-T, EDR-810-VPN-2GSFP, EDR-810-VPN-2GSFP-T

Supported Operating Systems

N/A

New Features

N/A

Enhancements

- Change of interface IP address, netmask, or gateway that caused the firewall policy to disappear.
- When the NTP server and SNMP server are enabled by the administrator, the services will be regarded as authorized services and available at LAN side.
- Default cost of RSTP at GbE fiber ports changed to 20000.

Bugs Fixed

- MXview could not read the router's IPsec status.
- Inserting NAT rules to Index 1 would occasionally cause the NAT function to not work properly.

Changes

N/A

Notes

N/A



Version: v3.8	Build: Build_15123114
Release Date: N/A	

Applicable Products

EDR-810-2GSFP, EDR-810-2GSFP-T, EDR-810-VPN-2GSFP, EDR-810-VPN-2GSFP-T

Supported Operating Systems

N/A

New Features

- Supports GOOSE message pass-through in bridge mode firewall (all ports need to be in bridge mode).
- Supports cybersecurity notifications for monitoring in MXview v2.7 or later and MXview ToGo.
- Users can determine if the EDR-810 responds to “Ping Request” from WAN interface.
- Supports 3 privileges, System Admin, Configuration Admin, and User, in user account settings.

Enhancements

- Removed authority of “User” privilege to display account information.
- Removed SSL web connection due to higher security request (allow TLS only).

Bugs Fixed

- The ABC-02 LED display behavior on the EDR-810 Series front panel.
- Broadcast packets caused abnormal event logs when enabling the Trust-Access Log function.
- EDR-810 does not respond to the “SNMP Walk” command for the LLDP table.
- NTP client could not synchronize time correctly with Windows XP Embedded NTP Server.
- Fixed several configuration import and export problems.
- Fixed several CLI commands for IPsec configuration.

Changes

N/A

Notes

- MXview v2.7 ready in Q1, 2016.



Version: v3.7	Build: Build_15092315
Release Date: N/A	

Applicable Products

EDR-810-2GSFP, EDR-810-2GSFP-T, EDR-810-VPN-2GSFP, EDR-810-VPN-2GSFP-T

Supported Operating Systems

N/A

New Features

- Supports X.509 certificate issued by CA (certificate authority).
- Supports CSR (Certificate Signing Request).
- Supports certificate management for each IPsec tunnel.
- Added tunnel established time in IPsec Status monitoring.

Enhancements

- Added new IPsec event logs: Phase 1 setting does not match the remote gateway configuration, Phase 2 setting does not match the remote gateway configuration, PFS setting does not match, Issuer CA not found, X.509 certificate expired, Policy does not allow PSK, Policy does not allow RSASIG, Ignore initial aggressive message, Phase 2 Start.

Bugs Fixed

- Daylight saving time was double counted in the system.
- Mismatch of management VLAN ID when a configuration file was imported.

Changes

N/A

Notes

N/A



Version: v3.6	Build: Build_15071611
Release Date: N/A	

Applicable Products

EDR-810-2GSFP, EDR-810-2GSFP-T, EDR-810-VPN-2GSFP, EDR-810-VPN-2GSFP-T

Supported Operating Systems

N/A

New Features

- Supports MXview and MXconfig v2.2 for firewall device display and mass configuration.

Enhancements

- New design for setting wizard in one page for configuring WAN, LAN and Bridge port types.
- Removed password display in OpenVPN user management page due to security concerns.

Bugs Fixed

- VRRP configuration import/export problem.
- Configuration import/export had a problem when the WAN interface was set to “Disable”.
- Redundancy Status display was incorrect on the webpage after importing a configuration file with Turbo Ring V2 enabled.
- Sometimes the NAT web page would not display correctly.
- Moved HTTP and HTTPS service control to User Interface Management and removed them from the System Information webpage.
- OpenVPN “Server-to-User configuration export” sometimes could not be exported as a file.
- RSTP port status was not correctly displayed.
- LLDP display was incorrect in PROFINET environments.
- Firewall event log time did not synchronize with the Time Zone setting.
- Sometimes the firewall event log time was incorrect when the Trusted Access function was enabled.
- VPN event log had unreadable information for failure to establish connection.
- NAT-T did not work properly.
- IPsec would sometimes not initiate the tunnel establish process in firmware v3.5 (previous versions before v3.5 do not have this issue).
- Incorrect UDP checksum when direct-broadcast forwarding with “Source IP Overwrite” enabled.

Changes

N/A

Notes

N/A



Version: v3.5	Build: Build_15041411
Release Date: N/A	

Applicable Products

EDR-810-2GSFP, EDR-810-2GSFP-T, EDR-810-VPN-2GSFP, EDR-810-VPN-2GSFP-T

Supported Operating Systems

N/A

New Features

- OpenVPN Client/Server.

Enhancements

- IGMP Snooping improvement for IGMPv3.
- Fine tuned bootup sequence to prevent data traffic from passing through firewall before system is ready.
- More details in phase 1 and phase 2 IPsec VPN event log.

Bugs Fixed

- Sometimes the NAT function would not work after repeated rebooting due to the LAN interface issue; Two RSTP roots would appear in a network.
- RSTP interoperability with CISCO's RSTP.
- Enabling "Setting Check" caused loss of NAT and Firewall rules after clicking the "Confirm" button.
- Enabling "Setting Check" resulted in the WAN interface not being configurable after clicking the "Confirm" button.
- Exported "Enabled" static routing rules changed to "Disabled" after importing.
- Exported "Disabled" static routing rules changed to "Enabled" after importing.
- Exported configuration file did not include the "Disabled" parameter of the firewall rules.
- Exported configuration file had the incorrect "Bridge Interface Name" after using the "Bridge Routing Quick Setting Wizard".
- Exported configuration file does not include "Port Description".
- Empty or duplicated routing rule names would cause failure when importing configurations. Names for routing rules must be input in the web console to avoid this issue.
- "IP-Port Binding" configuration was not correctly exported.
- Exported configuration files caused non-VPN models to fail to import the same file again.
- Removed the HTTP and HTTPS control from system configuration.

Changes

N/A

Notes

N/A



Version: v3.4	Build: Build_14123117
Release Date: N/A	

Applicable Products

EDR-810-2GSFP, EDR-810-2GSFP-T, EDR-810-VPN-2GSFP, EDR-810-VPN-2GSFP-T

Supported Operating Systems

N/A

New Features

- Exporting and importing of CLI-based text configuration files with optional file encryption.
- Supports “Show running-config” CLI command.
- Firewall event log to local storage, Syslog server, and SNMP trap server.
- VPN event log to local storage, Syslog server, and SNMP trap server.
- Transparent firewall (bridge mode firewall).
- Bridge Routing Quick Setting for easy bridge port configuration.
- Supports 10 different L2TP clients.
- Proxy ARP (configurable by CLI command).
- Supports VPN tunnel view in MXview v2.1 or later.
- User-defined text message banner at Web Login page.

Enhancements

- Separated Modbus TCP commands of “Modbus Request” and “Modbus Response” in Modbus Filtering for stronger protection of Modbus devices.
- “PLC address (Base 1)” option when filtering Modbus address range.
- Allow “x.x.x.0” and “x.x.x.255” as IP addresses in firewall policy settings.

Bugs Fixed

- After the “admin” account was removed, users could still log in through the “admin” account.
- When account names had the same prefix or postfix (ex. admin or myadmin), the web login authentication would sometimes work incorrectly.
- “LLDP auto topology” problem that occurred in MXview.
- “RSTP root” display problem in MXview.
- Web display of “time zone +11” when configuring EDR to “time zone +10”.
- Continuously clicking the “Apply” button on the NAT settings page caused NAT to stop working.
- LAN interface sometimes did not work properly after rebooting.
- Continuous “Login retry failure” events would sometimes cause the web console to stop working.
- When the VLAN ID was larger than 2047, IGMP snooping did not work properly.

Changes

N/A

Notes

N/A



Version: v3.3	Build: N/A
Release Date: N/A	

Applicable Products

EDR-810-2GSFP, EDR-810-2GSFP-T, EDR-810-VPN-2GSFP, EDR-810-VPN-2GSFP-T

Supported Operating Systems

N/A

New Features

N/A

Enhancements

- Changed behavior of Modbus TCP filtering to "stateless firewall" mode.

Bugs Fixed

- System could lock up, causing software functions to stop working and preventing access to management consoles.
- Turbo Ring became unstable after the system was rebooted.
- "User" privilege could change WAN/LAN settings through the "Quick Routing Setting Wizard."
- Unstable Turbo Ring V2 status in some situations.
- 1:1 NAT would not work properly after rebooting the system.
- System sometimes failed to detect SFP fiber modules.
- Description of SFP fiber modules was incorrectly displayed in the CLI console.
- "Trust Access" function blocked new added LAN interfaces.

Changes

N/A

Notes

N/A



Version: v3.2	Build: N/A
Release Date: N/A	

Applicable Products

EDR-810-2GSFP, EDR-810-2GSFP-T, EDR-810-VPN-2GSFP, EDR-810-VPN-2GSFP-T

Supported Operating Systems

N/A

New Features

- Multicast routing protocols: Static multicast routing, DVMRP, and PIM-SM/SSM.
- New routing protocol: OSPF.
- Supports ABC-02-USB.
- Broadcast forwarding: IP broadcast forwarding for 255.255.255.255 broadcast address, and IP-directed broadcast for subnet broadcast address (e.g. 192.168.1.255/24).
- VPN connection error logs.
- Supports MXview plug-in kit.

Enhancements

N/A

Bugs Fixed

- L2TP over IPsec connection between a Windows system and the EDR-810 was disconnected every 58 minutes, which was due to a failure in the rekey operation.
- When enabling the “Accessible IP” function, users could not establish an L2TP connection to the EDR-810.

Changes

N/A

Notes

N/A



Version: v3.1	Build: N/A
Release Date: N/A	

Applicable Products

EDR-810-2GSFP, EDR-810-2GSFP-T, EDR-810-VPN-2GSFP, EDR-810-VPN-2GSFP-T

Supported Operating Systems

N/A

New Features

- Users can disable “Utility Search”, “Telnet Console”, “SSH Console”, “HTTP Console”, and “HTTPS Console”, or change the service ports of the above consoles.
- Supports up to 10 user-defined login accounts for consoles.

Enhancements

N/A

Bugs Fixed

- WAN communication was interrupted when the gateway of the WAN interface had an IP address with 12 digits, for example, 111.114.212.254, or similar IP addresses. This issue was a likely cause for unstable communication through VPN or through routing.
- Could not accept special characters for web console login through a RADIUS server. This issue mostly happened with the RADIUS server on Windows 2008 Server and Windows 2012 Server when special characters were requested by the two platforms.
- Could not export Root CA from EDR-810’s internal CA generator. This issue happened when users used EDR-810’s internal IPsec certificate generator to create certificates for IPsec VPN clients.
- The LAN-WAN columns of the NAT table were displayed incorrectly in the CLI terminal.
- LAN DHCP server did not assign DNS to DHCP clients.
- "Multiple commands" function of Modbus filtering failed if there was a legal command in between illegal commands in one Modbus TCP packet.
- Web service stopped working after quick refreshing the web console.
- When "Accessible IP" is enabled, the IPsec VPN connection could not be established.
- Multicast streams came into VLANs that the IGMP Snooping setting were disabled for, causing abnormal behavior for IGMP Snooping operations.

Changes

N/A

Notes

N/A



Version: v3.0	Build: N/A
Release Date: N/A	

Applicable Products

EDR-810-2GSFP, EDR-810-2GSFP-T, EDR-810-VPN-2GSFP, EDR-810-VPN-2GSFP-T

Supported Operating Systems

N/A

New Features

- Added new product model: EDR-810-VPN.
- RSTP and Turbo Ring V2 for network redundancy.
- Multiple user accounts.
- User account with RADIUS authentication.
- IP-Port Binding.
- Port mirror in.
- Multicast function (Static multicast MAC and IGMP Snooping).
- Traffic control (QoS, CoS, DSCP, and Rate Limit).
- MAC table display.

Enhancements

N/A

Bugs Fixed

N/A

Changes

- Changed default password to "moxa".

Notes

N/A



Version: v1.0	Build: N/A
Release Date: N/A	

Applicable Products

EDR-810-2GSFP, EDR-810-2GSFP-T

Supported Operating Systems

N/A

New Features

- First release for the EDR-810 Series.

Enhancements

N/A

Bugs Fixed

N/A

Changes

N/A

Notes

N/A