Cyber Security Advisory #07/2020

Multiple Vulnerabilities in GateManager

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Executive Summary

CVE-2020-14500  GateManager Improper HTTP Request Handling Vulnerability
An improper HTTP request handling vulnerability in B&R GateManager 4260 and 9250 versions <9.0.20276 and GateManager 8250 versions <9.2.620276048 allows remote, unauthenticated users to overwrite arbitrary data and to perform remote code execution.

CVE-2020-14508  GateManager Off-By-One Error Vulnerability
An off-by-one error vulnerability in B&R GateManager 4260 and 9250 versions <9.0.20276 and GateManager 8250 versions <9.2.620276048 allows remote, unauthenticated users to impact availability and to perform remote code execution.

CVE-2020-14510  GateManager Default Telnet Credentials Vulnerability
A default Telnet credentials vulnerability in B&R GateManager 4260 and 9250 versions <9.0.20276 and GateManager 8250 versions <9.2.620276048 allows remote, authenticated users to execute commands as root.

CVE-2020-14512  GateManager Credential Storage Weakness Vulnerability
A credential storage weakness vulnerability in B&R GateManager 4260 and 9250 versions <9.0.20276 and GateManager 8250 versions <9.2.620276048 allows remote, authenticated users to obtain sensitive user account data.

Affected Products

Affected products: GateManager
Affected versions:
• GateManager 4260 and 9250 <v9.0.20276
• GateManager 8250 <v9.2.620276048

The following versions are not affected:
• GateManager 4260 and 9250 v9.0.20276 and higher
• GateManager 8250 v9.2.620276048 and higher

Vulnerability ID

CVE-2020-14500  GateManager Improper HTTP Request Handling Vulnerability
CVE-2020-14508  GateManager Off-By-One Error Vulnerability
CVE-2020-14510  GateManager Default Telnet Credentials Vulnerability
CVE-2020-14512  GateManager Credential Storage Weakness Vulnerability
Vulnerability Severity
The severity assessment is based on the FIRST Common Vulnerability Scoring System (CVSS) v3.1.

CVE-2020-14500  GateManager Improper HTTP Request Handling Vulnerability
CVSS v3.1 Base Score: 10.0 (Critical)

CVE-2020-14508  GateManager Off-By-One Error Vulnerability
CVSS v3.1 Base Score: 8.1 (High)

CVE-2020-14510  GateManager Default Telnet Credentials Vulnerability
CVSS v3.1 Base Score: 9.8 (Critical)

CVE-2020-14512  GateManager Credential Storage Weakness Vulnerability
CVSS v3.1 Base Score: 9.1 (Critical)

Corrective Actions or Resolution
The described vulnerabilities have been fixed in the following product versions:
- GateManager 4260 and 9250 v9.0.20276
- GateManager 8250 v9.2.620276048

Vulnerability Details

CVE-2020-14500 GateManager Improper HTTP Request Handling Vulnerability

Description
When processing HTTP headers, the GateManager HTTP request handler applies a subset of input validation only. Upon receipt of specially crafted HTTP requests, the request handler performs an out-of-bounds write operation.

Impact
An unauthenticated adversary can overwrite arbitrary data, potentially leading to remote code execution on vulnerable GateManager instances.

Fix
The HTTP request handler now fully validates the HTTP header field in question.

Workarounds and Mitigations
B&R has not identified any specific workarounds or mitigations for this vulnerability. Security solutions like Intrusion Prevention Systems and Web Application Firewalls may be able to prevent exploitation of this vulnerability by blocking exploit traffic before it reaches GateManager instances. Further details are provided in our Cyber Security guidelines – see section "Supporting information and guidelines" below.
CVE-2020-14508 GateManager Off-By-One Error Vulnerability

Description
When processing HTTP requests with certain properties, a memory cleanup bug is triggered in GateManager.

Impact
An unauthenticated adversary can crash the GateManager service, potentially leading to remote code execution on vulnerable GateManager instances.

Fix
The memory cleanup bug has been fixed.

Workarounds and Mitigations
B&R has not identified any specific workarounds or mitigations for this vulnerability.

CVE-2020-14510 GateManager Default Telnet Credentials Vulnerability

Description
The Telnet service includes a command execution feature intended for debug purposes only.

Impact
An authenticated adversary can run arbitrary commands with root privileges.

Fix
The command execution feature has been removed from the Telnet service.

Workarounds and Mitigations
B&R has not identified any specific workarounds or mitigations for this vulnerability.
CVE-2020-14512 GateManager Credential Storage Weakness Vulnerability

Description
GateManager lacks strong access control and strong encryption regarding stored credentials of privileged user accounts.

Impact
An authenticated adversary may be able to decrypt credentials of privileged user accounts stored on GateManager instances.

Fix
The credential storage weaknesses have been eliminated.

Workarounds and Mitigations
B&R has not identified any specific workarounds or mitigations for this vulnerability.

Supporting information and guidelines
The B&R Cyber Security webpage provides further information including Cyber Security guidelines. Please find these resources here: https://www.br-automation.com/en/service/cyber-security/

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Document History

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