CHIPKIN
Zonex GenX and RM
FS-8705-120
Automation System

CHIPKIN Zonex GenX and RM FS-8705-120 Automation System Instruction Manual

Contents

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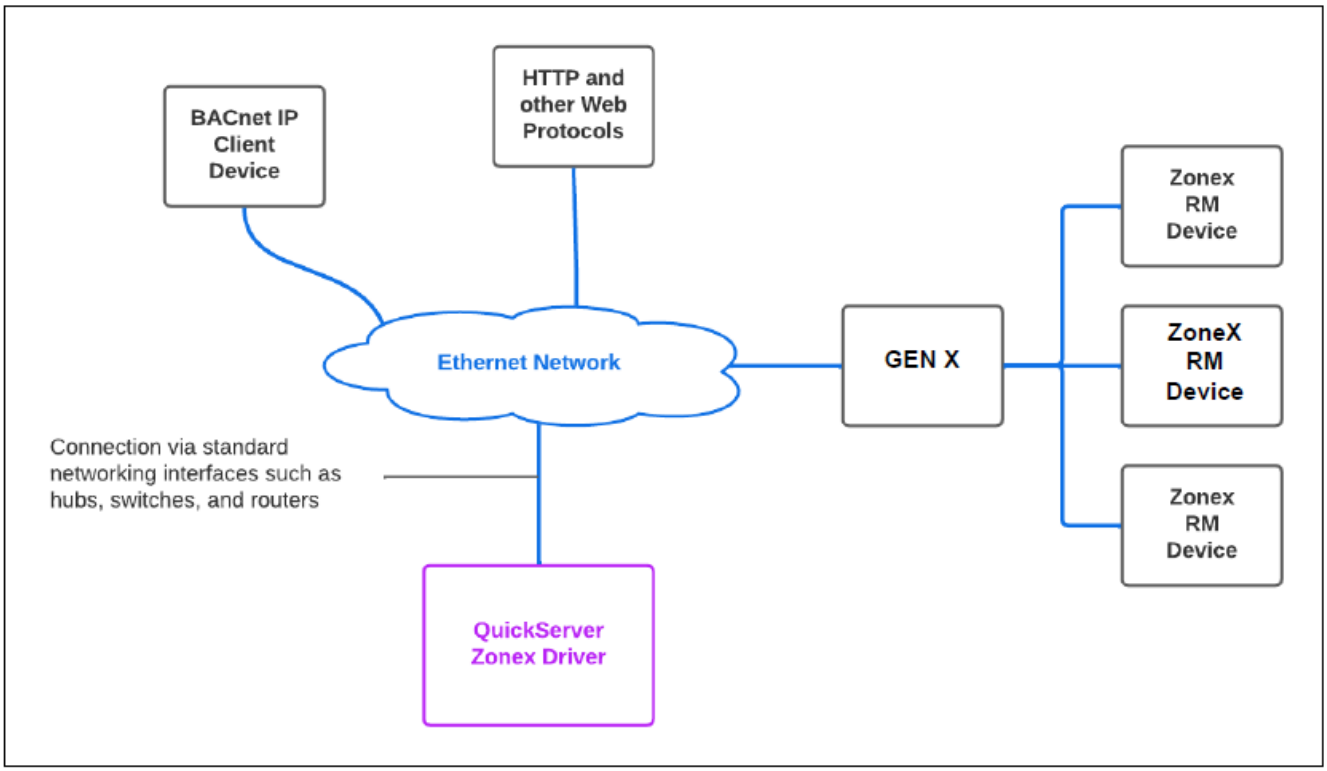
CHIPKIN Zonex GenX and RM FS-8705-120 Automation System

Zonex Description

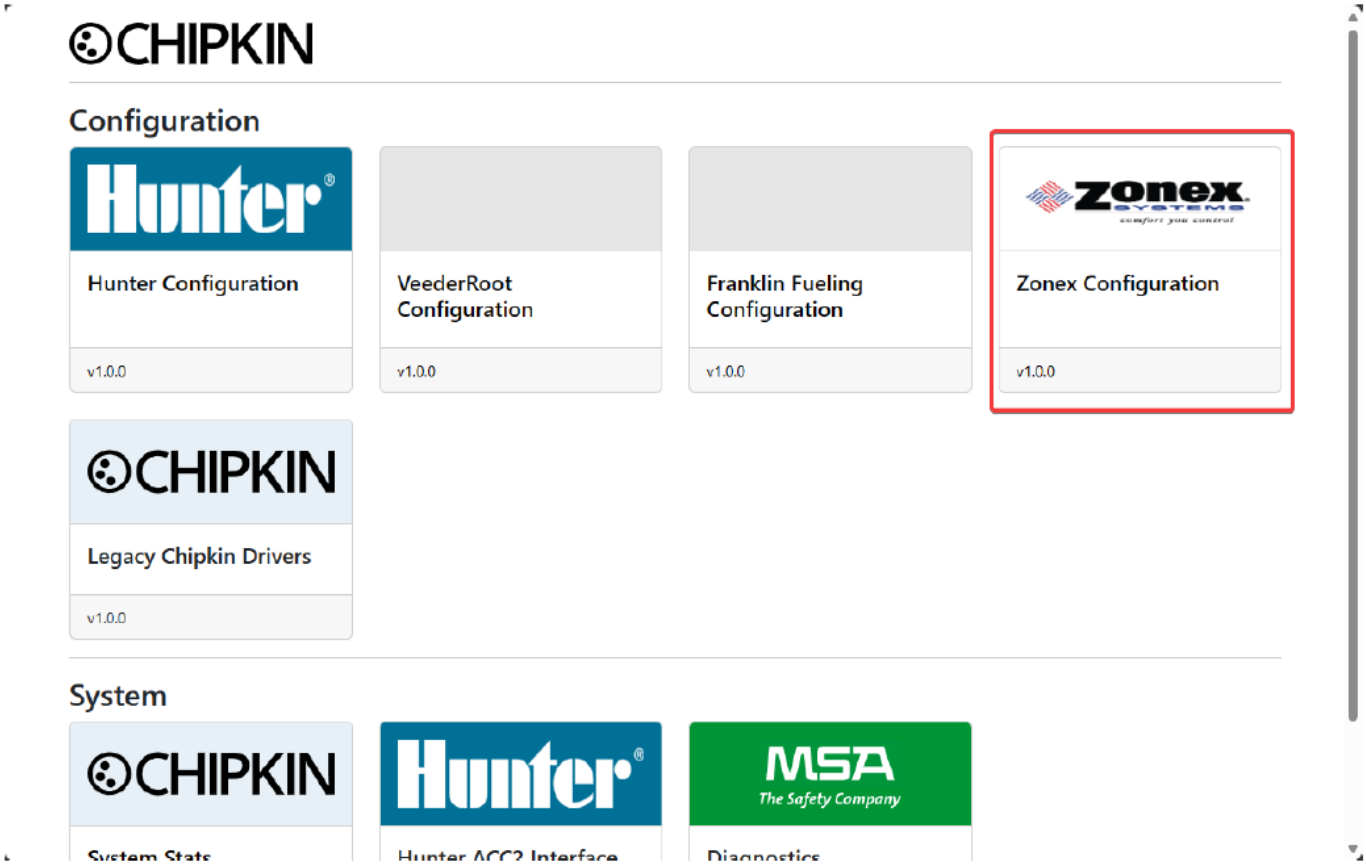
The Zonex Driver allows the FieldServer to poll and set data from Zonex devices over Ethernet using the HTTP protocol. The Zonex Driver uses HTTP request. The driver was developed to communicate with Zonex web-server enabled devices, specifically GenX and RM devices. The FieldServer acts as an HTTP Client. When configured the FieldServer polls for data from Zonex GenX and RM devices. This data is stored on the FieldServer to be mapped to BACnet IP or simply to be viewed. The Zonex driver will also periodically attempt to write any changes that were made to writable BACnet IP objects. The information that follows describes how to expand upon the factory defaults provided in the configuration files included with the FieldServer.

Connection Diagram

This block diagram lists describes how the FieldServer connects to Zonex devices and makes the data available over BACnet IP



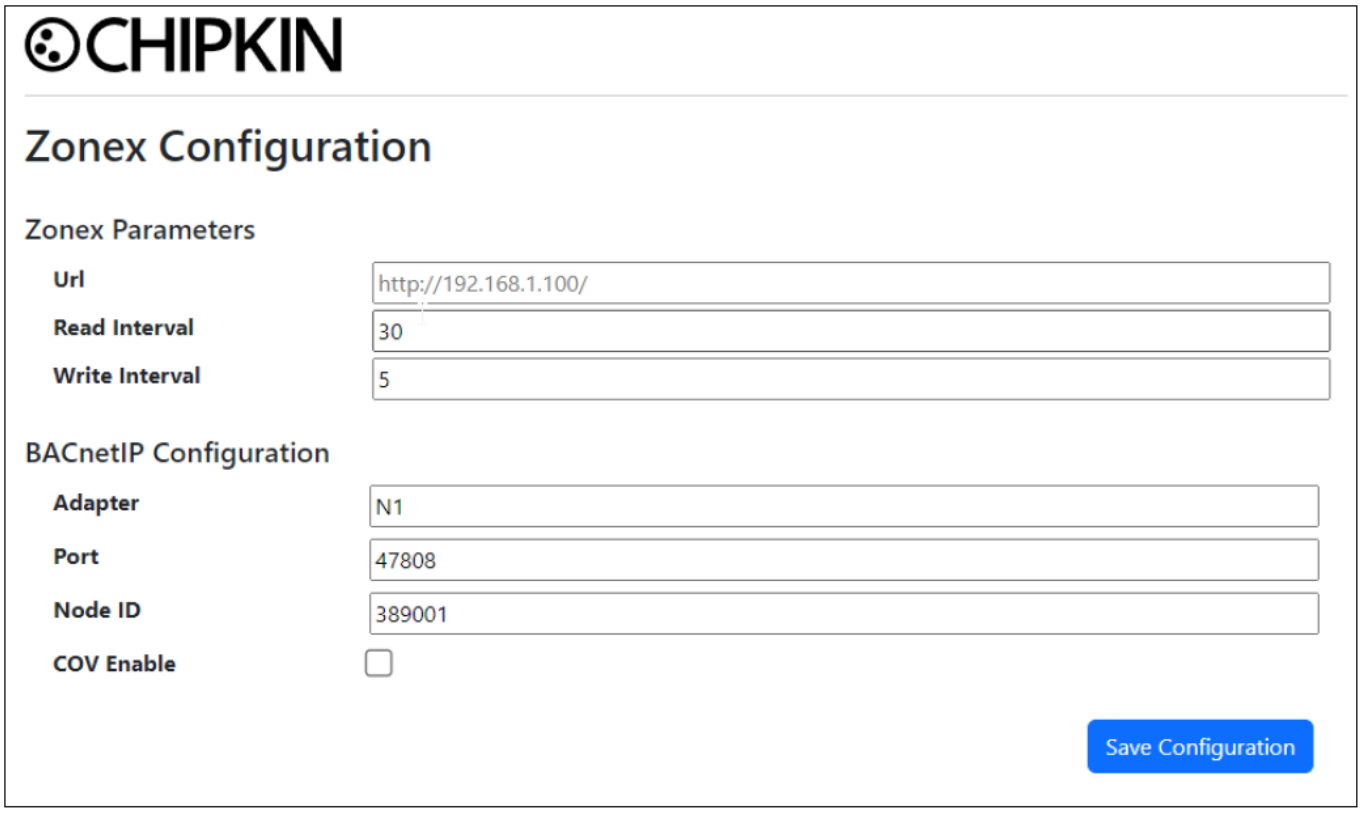
Zonex Configuration



To configure the FieldServer, follow the instructions below to auto-generate the Zonex polling and write tasks as well as the BACnet IP Server configuration

Meta-Configurer

On the Zonex Configuration page, use the form to fill out the details required to connect to the Zonex web server as the general BACnet information to assign to the FieldServer.



Zonex Parameters

Name	Function	Legal Values
Url	The url of the Zonex web server	Text, must be a valid Url (include the http://)
Read Interval	How often to poll the Zonex web server for data (in seconds)	1-3600, **30**
Write Interval	How often to write values to the Zonex web server when data has changed via BACnet (in seconds)	1-3600, **5**

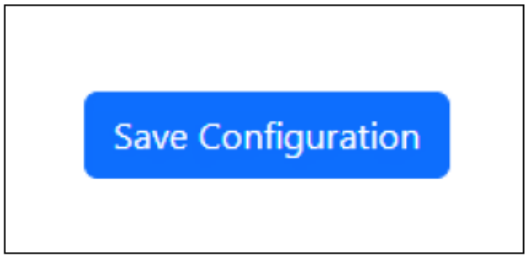
- Bolded values are defaults

BACnet IP Configuration

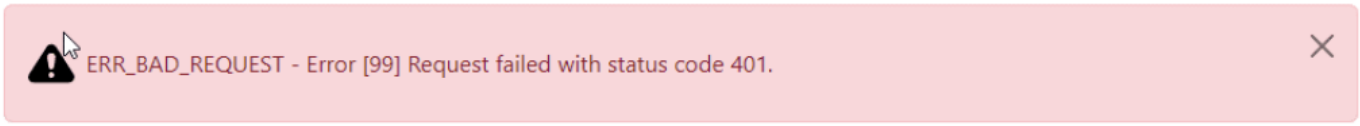
Name	Function	Legal Values
Adapter	The FieldServer network adapter to use for BACnet IP Communication	**N1** (or N2 if using a 2 port FieldServer)
Port	The UDP port to use for BACnet IP	Any legal IP port value (1 – 65535); **47808**
Node ID	The BACnet Device Identifier to assign to this Field Server acting as a BACnet Server device	0-4194302; **389001**
COV Enable	Enables or disables COV (Change of Value) for this BACnet device	Checked = enabled, **Unchecked = disabled**

- Bolded values are defaults

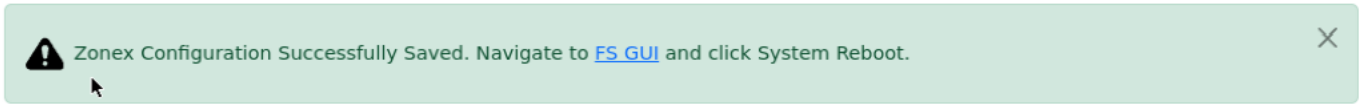
Saving the Server Configuration
When the configuration is complete, click on the “Save Configuration” button to save. The FieldServer will query the Zonex web server and build both the Zonex Configurtion as well as the BACnetIP Server Configuration based on the findings.



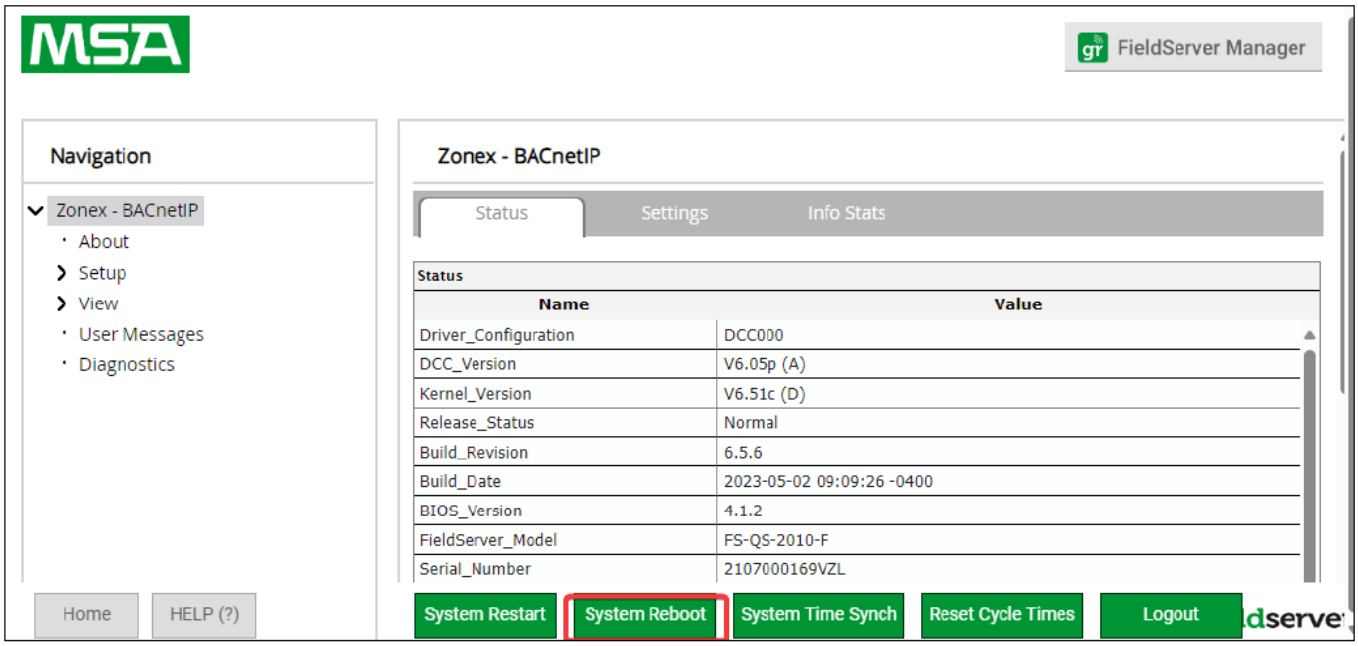
If an error occurs, an error message will appear at the top of the web page in a red banner. For example:



If the configuration was generated successfully, a success message will appear at the top of the web page in a green banner, prompting the user to return to the MSA Diagnostic page to perform a System Reboot for the changes to take effect



Click on the link to return to the FS GUI page and click the System Reboot:

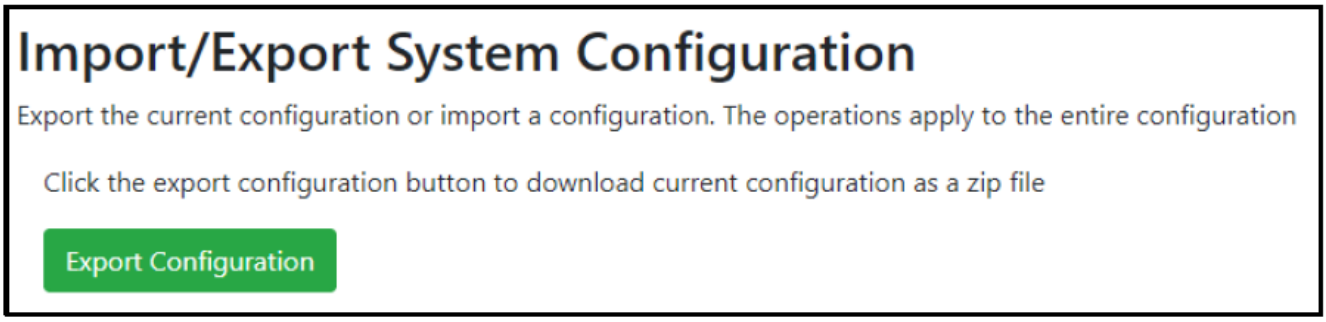


Importing and Exporting Configurations

It is possible to export the current configuration to back it up or simply to make some edits.

How to Export the Configuration

1. Click the Export Configuration button.



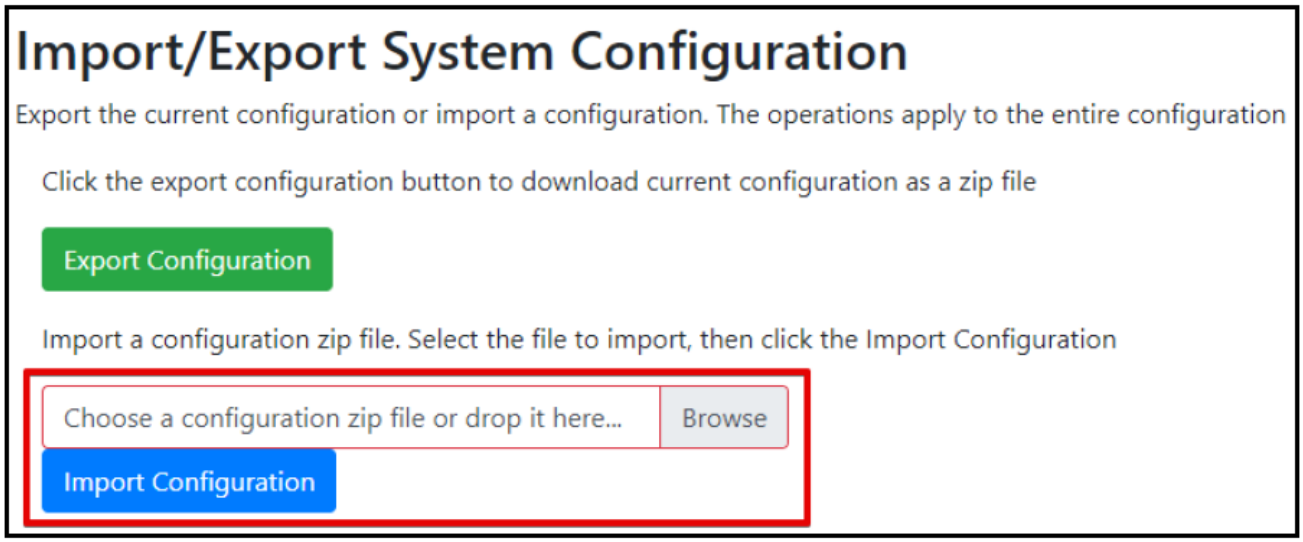
How to Import the Configuration

The file to import the configuration must be a zip file. The zip file should contain the following folders:

- ae – this folder contains any configuration files for the Zonex configuration
- pe – this folder contains one config.csv file for the pe configuration. To make sure the folder directory is correct, do an Export first, then extract the files, edit them, then zip them up again.

To import the configuration:

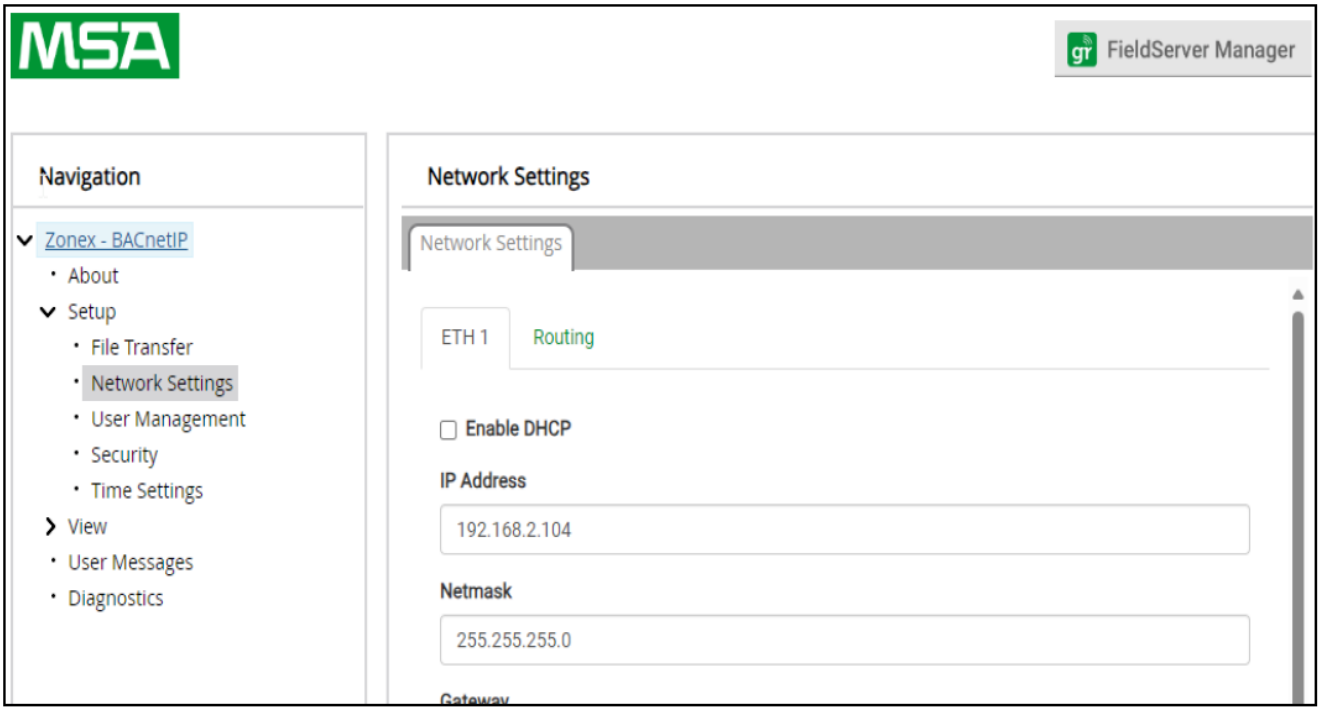
1. Click the “Browse” button in the “Import/Export System Configuration” section and select the zip file containing the configuration to import.
2. Click the “Import Configuration” button and wait for the configuration to finish importing.
3. If successful, a success message will appear prompting a reboot of the Fieldserver for the changes to take effect.



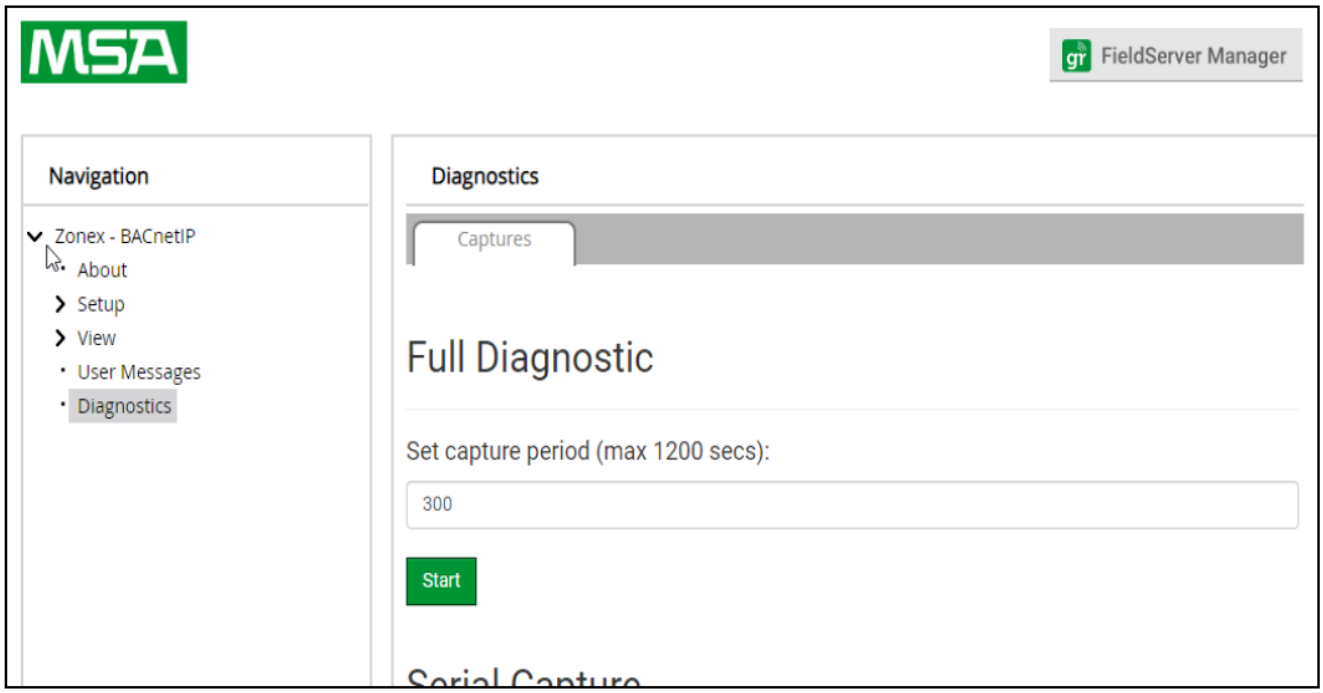
Appendix A – Troubleshooting

Appendix A.1 – Debugging a Zonex Connection

- If the FieldServer is not receiving any data, verify the URL of the Zonex web server.
- Verify the network and ensure that the FieldServer has direct access to the Zonex web server (either both devices are on the same subnet, or the network has been setup to allow for proper routing)
- Double check the FieldServer Network settings in the FS GUI (MSA Diagnostics page)



- Verify comms by taking a wireshark log or a FieldServer diagnostics log.



Appendix B – Example Configurations

Zonex Configuration

```
{
  "Zonex": {
    "connections": [
      {
        "type": "ethernet",
        "name": "Ethernet",
        "parameters": {
          "port": "n1"
        }
      }
    ],
    "nodes": [
      {
        "connection": "Ethernet",
        "name": "GET_Status",
        "url": "http://127.0.0.1:8081/status.xml",
        "type": "Read",
        "cacheData": true,
        "scanInterval": "30"
      },
```

```
    {
      "connection": "Ethernet",
      "name": "POST_Status",
      "url": "http://127.0.0.1:8081/post.htm",
      "type": "Write",
      "scanInterval": "5"
    }
  ],
  "tasks": [
    {
      "node": "GET_Status",
      "databroker": {
        "pe": {
          "name": "DA_GENX_SYS_DIA",
          "offset": 0,
          "length": 28
        }
      },
      "name": "SysDiagnosticID",
      "type": "Diagnostic",
      "writeNode": ""
    },
    {
      "node": "GET_Status",
      "databroker": {
        "pe": {
          "name": "DA_GENX_STAT_1",
          "offset": 0,
          "length": 61
        }
      },
      "name": "StatDataID1",
      "type": "StatData",
      "writeNode": "POST_Status"
    }
  ]
 }
}
```


Appendix C – BACnet IP Objects

The following table contains the BACnet IP Objects generated in the Meta-Configurer. The configuration uses the

BACnet Object Instance of the objects to sort the objects.

Note: Depending on the configuration of the Zonex devices, there can be a large amount of generated BACnet objects which could cause the discovery of this BACnet device to take a long time.

Supported Object Types:

- AI = Analog Input
- AV = Analog Value
- BI = Binary Input
- BV = Binary Value
- MI = Multi-State Input
- MV = Multi-State Value

Name	Object Type	Object Instance	Notes
SysDiagnotistic Data Points			
Genx_SysDiag_Leaving Air	AI	0	
Genx_SysDiag_Return Air	AI	1	
Genx_SysDiag_Outside Air	AI	2	
GenX_SysDiag_Stat1 Comm Status	MI	3	Communication OK = 1 Communication Error = 2
GenX_SysDiag_Stat2 Comm Status	MI	4	Communication OK = 1 Communication Error = 2
GenX_SysDiag_Stat3 Comm Status	MI	5	Communication OK = 1 Communication Error = 2
GenX_SysDiag_Stat4 Comm Status	MI	6	Communication OK = 1 Communication Error = 2
GenX_SysDiag_Stat5 Comm Status	MI	7	Communication OK = 1 Communication Error = 2
GenX_SysDiag_Stat6 Comm Status	MI	8	Communication OK = 1 Communication Error = 2
GenX_SysDiag_Stat7 Comm Status	MI	9	Communication OK = 1 Communication Error = 2
GenX_SysDiag_Stat8 Comm Status	MI	10	Communication OK = 1 Communication Error = 2
GenX_SysDiag_Stat9 Comm Status	MI	11	Communication OK = 1 Communication Error = 2

GenX_SysDiag_Stat10 Comm Status	MI	12	Communication OK = 1 Communication Error = 2
GenX_SysDiag_Stat11 Comm Status	MI	13	Communication OK = 1 Communication Error = 2
GenX_SysDiag_Stat12 Comm Status	MI	14	Communication OK = 1 Communication Error = 2
GenX_SysDiag_Stat13 Comm Status	MI	15	Communication OK = 1 Communication Error = 2
GenX_SysDiag_Stat14 Comm Status	MI	16	Communication OK = 1 Communication Error = 2
GenX_SysDiag_Stat15 Comm Status	MI	17	Communication OK = 1 Communication Error = 2
GenX_SysDiag_Stat16 Comm Status	MI	18	Communication OK = 1 Communication Error = 2
GenX_SysDiag_Stat17 Comm Status	MI	19	Communication OK = 1 Communication Error = 2
GenX_SysDiag_Stat18 Comm Status	MI	20	Communication OK = 1 Communication Error = 2
GenX_SysDiag_Stat19 Comm Status	MI	21	Communication OK = 1 Communication Error = 2
GenX_SysDiag_Stat20 Comm Status	MI	22	Communication OK = 1 Communication Error = 2
Genx_SysDiag_AC Status	MI	23	Off = 1, Vent = 2, Cool =3, Heat = 4, Changeover = 5, Air balance = 6,
Genx_SysDiag_FDD/ADR	MI	24	No alert = 1, FDD alert = 2, ADR = 3 FDD & ADR = 4
SysConfig Data Points			
GenX_SysCon_Fan Mode	BV	30	Active = On, Inactive = Auto

StatDataID Data Points # represents the Damper number attached to GENX (1-20)			
Genx_StatDataID#_LockStatus	MV	#000	Unlock = 1, Lock +/-2 Degrees = 2, Lock = 3
Genx_StatDataID#_CurrentRoomTemperature	AI	#001	
Genx_StatDataID#_OccupiedCool	AV	#002	
Genx_StatDataID#_OccupiedHeat	AV	#003	
Genx_StatDataID#_PriorityVote	AV	#004	
Genx_StatDataID#_ZoneStatus	MV	#005	Off = 1, Vent = 2 Cool = 3 Heat = 4
Genx_StatDataID#_ZoneCall	MV	#006	Off = 1, Vent = 2 Cool = 3 Heat = 4
Genx_StatDataID#_AutoMode	MV	#007	Off = 1, Auto on (heat/cool) = 2, Cool only = 3, Heat only = 4
Genx_StatDataID#_StatType	MI	#008	EztouchX = 5, SATouch = 6,
Genx_StatDataID#_LeavingAir	AI	#009	
Genx_StatDataID#_ADR	BV	#010	Active = Enable Inactive = Disabled
RMD Data Points # represents the RM number (1-20)			
RM#_RMD_Leaving Air	AI	#00000	
RM#_RMD_Return Air	AI	#00001	

RM1_RMD_Stat1 Comm Status	MI	#00002	Communication OK = 1 Communication Error = 2

RM1_RMD_Stat2 Comm Status	MI	#00003	Communication OK = 1 Communication Error = 2
RM1_RMD_Stat3 Comm Status	MI	#00004	Communication OK = 1 Communication Error = 2
RM1_RMD_Stat4 Comm Status	MI	#00005	Communication OK = 1 Communication Error = 2
RM1_RMD_Stat5 Comm Status	MI	#00006	Communication OK = 1 Communication Error = 2
RM1_RMD_Stat6 Comm Status	MI	#00007	Communication OK = 1 Communication Error = 2
RM1_RMD_Stat7 Comm Status	MI	#00008	Communication OK = 1 Communication Error = 2
RM1_RMD_Stat8 Comm Status	MI	#00009	Communication OK = 1 Communication Error = 2
RM1_RMD_Stat9 Comm Status	MI	#00010	Communication OK = 1 Communication Error = 2
RM1_RMD_Stat10 Comm Status	MI	#00011	Communication OK = 1 Communication Error = 2
RM1_RMD_Stat11 Comm Status	MI	#00012	Communication OK = 1 Communication Error = 2
RM1_RMD_Stat12 Comm Status	MI	#00013	Communication OK = 1 Communication Error = 2
RM1_RMD_Stat13 Comm Status	MI	#00014	Communication OK = 1 Communication Error = 2
RM1_RMD_Stat14 Comm Status	MI	#00015	Communication OK = 1 Communication Error = 2
RM1_RMD_Stat15 Comm Status	MI	#00016	Communication OK = 1 Communication Error = 2
RM1_RMD_Stat16 Comm Status	MI	#00017	Communication OK = 1 Communication Error = 2
RM1_RMD_Stat17 Comm Status	MI	#00018	Communication OK = 1 Communication Error = 2

RM1_RMD_Stat18 Comm Status	MI	#00019	Communication OK = 1 Communication Error = 2
RM1_RMD_Stat19 Comm Status	MI	#00020	Communication OK = 1 Communication Error = 2

RM1_RMD_Stat20 Comm Status	MI	#00021	Communication OK = 1 Communication Error = 2
RM#_RMD_AC Status	MI	#00022	Off = 1, Vent = 2, Cool =3, Heat = 4, Changeover = 5, Air balance = 6,
RM#_RMD_FDD/ADR	MI	#00023	No alert = 1, FDD alert = 2, ADR = 3 FDD & ADR = 4
RMC Data Points # represents the RM number (1-20)			
RM#_RMC_Fan Mode	BV	#00030	Active = On, Inactive = Auto
RMS Data Points # represents the RM (1-20) $$ represents the Damper number attached to RM # (01-20)			
RM#_RMS$$_LockStatus	MV	#$$000	Unlock = 1, Lock +/-2 Degrees = 2, Lock = 3
RM#_RMS$$_CurrentRoomTemperature	AI	#$$001	
RM#_RMS$$_OccupiedCool	AV	#$$002	
RM#_RMS$$_OccupiedHeat	AV	#$$003	
RM#_RMS$$_PriorityVote	AV	#$$004	

RM#_RMS$$_ZoneStatus	MV	#$$005	Off = 1, Vent = 2 Cool = 3 Heat = 4
RM#_RMS$$_ZoneCall	MV	#$$006	Off = 1, Vent = 2 Cool = 3

			Heat = 4
RM#_RMS$$_AutoMode	MV	#$$007	Off = 1, Auto on (heat/cool) = 2, Cool only = 3, Heat only = 4
RM#_RMS$$_StatType	MI	#$$008	EztouchX = 5, SATouch = 6,
RM#_RMS$$_LeavingAir	AI	#$$009	
RM#_RMS$$_ADR	BV	#$$010	Active = Enable Inactive = Disabled

Revision History

This table summarizes the update history for this document. Please contact Chipkin for an updated version of this document if required.

DATE	RESP	DOC. REV.	COMMENT
21 Feb 2024	AF	1	Created initial document
05 Mar 2024	AF	2	Fixed Import/Export configuration url
18 Apr 2024	AF	3	Removed Schedule data points Added Fan Mode point for RM
01 May 2024	AF	4	Removed ReturnAir, Humidiity, and Occuipied Mode from StatData and RMD points Added Stat1-20 Error Code from SysDiagnosticID and RMD Removed some Stat Type values
02 May 2024	AF	5	Updated Error Code data point values
10 May 2024	AF	6	Updated images and data point description text

Specifications

- **Product Name:** Zonex GenX and RM FS-8705-120
- **Manufacturer:** Chipkin – Enabling Integration
- **Driver Version:** 1.0.5
- **Document Revision**: 6

Product Information

The Zonex Driver allows the FieldServer to poll and set data from Zonex devices over Ethernet using the HTTP protocol. It communicates with Zonex web-server-enabled devices, specifically GenX and RM devices. The FieldServer acts as an HTTP Client, polling for data and storing it to be mapped to BACnet IP or viewed. It can also write changes to writable BACnet IP objects.

Connection Diagram
This block diagram illustrates how the FieldServer connects to Zonex devices and makes the data available over BACnet IP.

Frequently Asked Questions

Q: What are the default read and write intervals for Zonex parameters?
A: The default read interval is 30 seconds, and the default write interval is 5 seconds.

Q: How can I enable or disable COV for the BACnet device?
A: You can enable or disable COV by checking or unchecking the corresponding checkbox in the adapter settings.

Documents / Resources

	**CHIPKIN Zonex GenX and RM FS-8705-120 Automation System** [pdf] Instruction Manual FS-8705-120, FS-8705-120, Zonex GenX and RM FS-8705-120 Automation System, Zonex GenX and RM FS-8705-120, Automation System, System

References

- **User Manual**