

Niagara 4 Driver for Galaxy User Guide

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Change log

4.8

• Build for 4.8.0.110



Driver Overview

The SAFECONTROL Driver for Galaxy is written using Tridium's BFramework, for use in Niagara 4 or later.

The driver provides support for communication with Galaxy control panels using SIA Protocol Revision 1.05 and TCP through network. The driver's main purpose is to serve as gateway to Galaxy control panel for Tridium Supervisor 4 or JACE8000 stations (and OEM variations i.e. Centra Line, Trend, ...).

The driver allows you to send commands to groups, zones and read their statuses, to control outputs and to read users and set their codes.

This help is also connected to the objects in Workbench / Coach NX and you can use the "Guide on target" function in the help or right menu to get more information.

Prerequisites for integration

- 1. Correctly installed modules with the driver, see chapter "Installation" for more details.
- 2. Active license and certificate for the driver on the target platform, see chapter "Licensing" for more details.
- 3. JACE 8000 or PC with Tridium Supervisor 4 must be connected to internet.

Installation

Source files are available for download from SAFECONTROL license web ((<u>https://license.safecontrol.cz</u>). Extract the **galaxy.zip** archive and copy all included *.jar files to your Niagara modules directory, which is typically **C:\Niagara\Niagara-4.x.xx.modules**.

For correct behaviour it is necessary to install *.jar files on the client platform (Workbench PC) as well as on the target platform (JACE8000 or Supervisor).

Note: Close the Niagara Workbench after inserting all the modules in the folder. Next time you start the Niagara Workbench the driver will be loaded in Niagara Workbench and will be immediately available for use.



Licensing

Demo license is limited up to 90 days and purchased licenses are not time limited.

You can ask for license via SAFECONTROL license web (<u>https://license.safecontrol.cz</u>) or by sending e-mail to <u>sales@safecontrol.cz</u>. Purchased license will be generated via Niagara-Central license web where it will be available for download together with safecontrol.certificate file. You can also download license online in Niagara Workbench from license manager view, see picture bellow:

File Edit Sarch Bookmarks Tools Window Height Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Nav Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer Image: Castastizer	🚰 Niagara Workbench		- 🗆 X
Constant of the constant	File Edit Search Bookmarks Tools	Window Help	
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22.185.7/227 (refd) Padrom Center Manager Nav Icense Manager Hot Address 52.185.7227 May Hota: DESTOR-FITADDA (doi: But 717AH-814E 4819-DDIA-28E7 Bund ID Ib.117.05.17 Tridum/EAL Energies Cetificates Platform Safecontrol.com/ficate (adecontrolnew expires) Tridum.24E4-4819-DDIA-28E7 Bund ID Tridum/BEA Energies International (adecontrol.46-new expires) Tridum.24E4-4819-DDIA-28E7 Bund ID Tridum.24E4-2800-WITHID DIA/CCCCRE 2500 PDINT Tridum PME4-4819-BDIA-28E7 Bund ID Import Licerse Import Licerse Bund ID Bund ID Import Licerse Bund ID Dumpers Import Licerse Bund ID<			
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O December A O		Tennet Tennet Tennet Tennet Tennet Tennet Tennet	

Figure 1: License import via License manager

Order codes

• DR-SC-GLX – Driver for Galaxy control panel

Basic config guide

- 1. Connect JACE 8000 or PC with Tridium Supervisor 4 to the internet.
- 2. Configure Galaxy control panel
- 3. Add new GalaxyNetwork to your Drivers node.
- 4. Correctly configure newly added GalaxyNetwork
- 5. Add GalaxyDevice under GalaxyNetwork
- 6. Add desired points under GalaxyDevice.

For more in-depth help read following chapters.



Setup guide

Configuring Galaxy control panel

For driver to function correctly the Galaxy control panel needs to be set up correctly.

Set SIA IP address to IP address of device where driver is running.

Set mode to direct access under Remote Access tab.

🖄 V6 Application						- • •
<u>Eile Edit V</u> iew Connect	Panel Communication	ns Logs <u>H</u> elp				
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Navigation Window 🛛 📮 🗙	Ethernet					
Users User Codes	4 General Rem	ote Access of Reporting of Triggers				4
System Users	Module Config		Comm Fail			
Zones -	IP Address	192 . 168 . 1 . 71	Number Of Attempts	1		
Zones Assemble Zones	Gateway IP Address	192 . 168 . 1 . 1	_ Line fail			
Outputs •1	Network Mask	255 . 255 . 255 . 0	Network	Off 🔹		
RIO Outputs	Site Name	ĂS	Signal	Primary 💌		
Keypad Outputs Schedule Output	Autotest		Encrypt			
Header Outputs	Hours	12	Alarm Report	Alam Mon		
Groups •	Minutes	45	Remote Access	SIA Control		
Group Mode Group Parameters	Interval	0 hours	Backup Module	Off		
Group Communications	Heartbeat		SIA Control			
Links 🔺	Hours	0	SIA IP Address	192 . 168 . 1 . 231		
Links	Minutes	0				
Communications •	ISOM		GPRS Network			
Internal Telecomms	Enable		Access Point Name			
ISDN	Server URL	https://isom.galaxy.mymaxproc				
Ethernet Internal RS222	Server Port	443	Login			
External RS232	Proxy IP / URL					
Global System Options	Proxy Port	0	Password			
System Parameters Summer Time	Proxy User		Roaming			
Quick Menu	Proxy Password		. John y			
Remote Access	DNS IP 1					
Schedules	DNS IP 2					
Holidays		,				
Access Template						
Hardware						
RIO						
Audio •						
Audio						
Acc. Name - GD	Acc. Num -	Panel Type - Galaxy 264	Panel Version - 7.	03 Comm. Medium - Eth	ernet Comm. Status - Offline	User - Manager

Figure 2: Galaxy panel SIA IP address configuration



管 V6 Application							
<u> </u>	Panel Communications Logs	<u>H</u> elp					
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Navigation Window # ×	thernet						
Users 1	General / Remote Access	Reporting Triggers					4
User Codes = System Users	- Remote Access	·					
Zones	Times	Any Time 💌					
Zones	Mode	Direct Access					
Assemble Zones	Call IP Address 1	· · · ·	Port Number 1	10001			
Outputs 1	Call IP Address 2		Port Number 2	10001			
RIO Outputs Keypad Outputs	Call IP Address 3		Port Number 3	10001			
Schedule Output	Call IP Address 4		Port Number 4	10001			
Header Outputs	Call IP Address 5		Port Number 5	10001			
Groups A			T OIL HUMBOL 0				
Group Parameters							
Group Communications							
Links							
Links							
External Telecomms							
ISDN Ethernet							
Internal RS232							
External RS232							
Global System Options							
System Parameters Summer Time							
Quick Menu							
Remote Access							
Schedules							
Holidays							
Access Template							
Hardware 1							
RIO							
Audio 🔺							
Audio							
	Acc Num	Banal Type Cabyy 264	Danal Varsian	7.02	Comm Modium Ethernet	Comm Status Office	Utor Manager
ACC. Name - GD	Acc. Num -	Panei Type - Galaxy 264	Panel Version -	7.03	Comm. Medium - Ethernet	Comm. Status - Offline	User - Manager

Figure 3: Galaxy panel mode configuration

Configuring connection

If your Galaxy Panel is connected to your JACE8000 via TCP connection, follow GalaxyTcpCommConfig setup section. If you are using direct connection to JACE8000 via RS232 cable, follow GalaxySerialCommConfig setup section.



GalaxyTcpCommConfig setup

- 1. Locate GalaxyTcpCommConfig in galaxy palette.
- 2. Click and drag GalaxyTcpCommConfig to GalaxyNetwork in the Drivers node.
- 3. Right click on GalaxyNetwork and select Property Sheet view.
- 4. Expand the GalaxyTcpCommConfig item by clicking small arrow on the left.
- 5. Enter the IP Address of the Galaxy Panel.
- 6. Click on the Save button.

(

9	🕽 GalaxyNetwork (Galaxy Network)								
	Ð	Status	{fault}	{fault}					
	Ð	Enabled	🔵 true 🗸						
	Ţ	Fault Cause							
Þ	\Box	Health	Fail [null]	Fail [null]					
Þ	0	Alarm Source Info	Alarm Source In	nfo					
Þ	Ļ	Monitor	Ping Monitor						
Þ	X	Tuning Policies	Tuning Policy M	Лар					
Þ.	÷	Poll Scheduler	N Poll Scheduler						
	Ð	Pin	543210						
Þ		Event History	Galaxy Event History						
Ŧ	°	GalaxyTcpCommConfig	Galaxy Tcp Comm Config						
		📔 Fault Cause	Comm error: parent in fault						
	•	Address 🗎	ocal:10002						
		Ip Address 100	al						
		🗎 Port 🛛 🗖 u	unspecified 10002	[-1 - 65536]					
		📔 Send Socket T O	20	s					
		📔 Server Socket T O	0 s						
		🗎 Ip Address	192.168.1.82						
		Command Port	10005						

Figure 4: GalaxyTcpCommConfig under GalaxyNetwork



GalaxySerialCommConfig setup

- 1. Locate GalaxySerialCommConfig in Communication folder in galaxy palette.
- 2. Drag and drop GalaxySerialCommConfig to GalaxyNetwork in the Drivers node.
- 3. Right click on GalaxyNetwork and select Property Sheet view.
- 4. Expand the GalaxySerialCommConfig item by clicking small arrow on the left.
- 5. Correctly config parameters:
 - Port Name: Usually COM1
 - Flow Control: Leave set to default
 - Baud Rate: Baud9600
 - Data Bits: Data Bits8
 - Parity: None
 - Stop Bits: Stop Bit1
- 6. Click on the Save button.

0	GalaxyNetwork (Galaxy Netwo	ork)
	🗎 Status	{fault}
	Enabled	🔵 true 🧹
	📔 Fault Cause	
₽	🖵 Health	Fail [null]
₽	Alarm Source Info	Alarm Source Info
₽	🖵 Monitor	Ping Monitor
₽	X Tuning Policies	Tuning Policy Map
₽	 Poll Scheduler 	N Poll Scheduler
	Pin Pin	543210
₽	Levent History	Galaxy Event History
Ŧ	🔗 GalaxySerialCommConfig	Galaxy Serial Comm Config
	📔 Fault Cause	Comm error: parent in fault
	隌 Port Name	COM1
) Baud Rate	Baud9600 -
	🗎 Data Bits	Data Bits8 🗸
	🗎 Stop Bits	Stop Bit1 🗸
	📔 Parity	None 👻
	📔 Flow Control Mode	🗌 RtsCtsOnInput 🔲 RtsCtsOnOutput 🔲 XonXoffOnInput 🔲 XonXoffOnOutput
	Receive Timeout	0 ms [0 - 20000]
	📔 Inter Message Delay	00000h 00m 00.000s 📰 [0ms-1second]

Figure 5: GalaxySerialComm under GalaxyNetwork



Adding new device

Open GalaxyDeviceManager and click New button. Proceed to add new GalaxyDevice. GalaxyDevice represents Galaxy control panel on GalaxyNetwork. It has four extensions – Groups, Zones, Outputs, Users.

Databa	ase													1 objects
Name	Туре	Exts	Status											(Ŧ
🔒 GD-К	Galaxy Device	•••	{ok}											
			ilira	New Folder	D New	/ Edit	Discover	Cancel	(+) Add	Match	C. Tagit	Template Config		
				incurronaler	ew	A main	an processes	- suiter	() Mud	Pr materi	-Ø tagit			

Figure 6: Newly added GalaxyDevice



Groups extension

Groups extension contains Group Commands and Group Statuses. Commands and Statuses are all polled together at once. GroupsExtension uses normal poll frequency. You can create these points manually or by Create Groups action on GroupsExtension which will create all possible commands and statuses.

Group Command is Writable Enum point with 6 different states:

- 1. Unset
- 2. Set
- 3. Part Set
- 4. System Reset
- 5. Abort Set
- 6. Force Set

Group Status is Enum point with 3 possible values:

- 1. Normal
- 2. Alarm
- 3. Reset required

Database			64 ob	ojects
Name	Туре	Out	Tuning Policy Name	(Ç
EZS_Group_Cmd_A1	Galaxy Group Command	Odstrezit {ok} @ def	defaultPolicy	-
EZS_Group_Status_A1	Galaxy Group Status	Normal {ok}	defaultPolicy	
EZS_Group_Cmd_A2	Galaxy Group Command	Odstrezit {ok} @ def	defaultPolicy	
EZS_Group_Status_A2	Galaxy Group Status	Normal {ok}	defaultPolicy	
EZS_Group_Cmd_A3	Galaxy Group Command	Odstrezit {ok} @ def	defaultPolicy	
EZS_Group_Status_A3	Galaxy Group Status	Normal {ok}	defaultPolicy	
EZS_Group_Cmd_A4	Galaxy Group Command	Odstrezit {ok} @ def	defaultPolicy	
EZS_Group_Status_A4	Galaxy Group Status	Normal {ok}	defaultPolicy	
EZS_Group_Cmd_A5	Galaxy Group Command	Odstrezit {ok} @ def	defaultPolicy	
EZS_Group_Status_A5	Galaxy Group Status	Normal {ok}	defaultPolicy	
EZS_Group_Cmd_A6	Galaxy Group Command	Odstrezit {ok} @ def	defaultPolicy	
EZS_Group_Status_A6	Galaxy Group Status	Normal {ok}	defaultPolicy	
EZS_Group_Cmd_A7	Galaxy Group Command	Odstrezit {ok} @ def	defaultPolicy	
EZS_Group_Status_A7	Galaxy Group Status	Normal {ok}	defaultPolicy	
EZS_Group_Cmd_A8	Galaxy Group Command	Odstrezit {ok} @ def	defaultPolicy	
EZS_Group_Status_A8	Galaxy Group Status	Normal {ok}	defaultPolicy	
EZS_Group_Cmd_B1	Galaxy Group Command	Odstrezit {ok} @ def	defaultPolicy	
EZS_Group_Status_B1	Galaxy Group Status	Normal {ok}	defaultPolicy	
EZS_Group_Cmd_B2	Galaxy Group Command	Odstrezit {ok} @ def	defaultPolicy	
EZS_Group_Status_B2	Galaxy Group Status	Normal {ok}	defaultPolicy	
EZS_Group_Cmd_B3	Galaxy Group Command	Odstrezit {ok} @ def	defaultPolicy	
EZS_Group_Status_B3	Galaxy Group Status	Normal {ok}	defaultPolicy	
EZS_Group_Cmd_B4	Galaxy Group Command	Odstrezit {ok} @ def	defaultPolicy	
EZS_Group_Status_B4	Galaxy Group Status	Normal {ok}	defaultPolicy	
🖪 EZS Group Cmd B5	Galaxv Group Command	Odstrezit {ok} @ def	defaultPolicy	~

Figure 7: Group Commands and Statutes



Zones extension

Zone extension contains Zone Commands and Zone Statuses. Commands and Statuses are polled individually so it important to keep only those points which you need for fast polling times. You can create these points manually or by Create Zones action on ZonesExtension which will create all possible commands and statuses.

Zone Command is Writable Enum point with 2 possible states:

- 1. Unomit
- 2. Omit

Zone Status is Enum point with 9 possible states:

- 1. Tamper SC
- 2. Low Resistance
- 3. Closed
- 4. High Resistance
- 5. Open
- 6. Tamper OC
- 7. Masked
- 8. Tamper CV
- 9. Fault

Database			472 object
Name	Туре	Out	Tuning Policy Name
4141_K08035_MK_Cmd	Galaxy Zone Command	Aktivni {ok} @ def	defaultPolicy
4141_K08035_MK_Status	Galaxy Zone Status	Zavreno {ok}	defaultPolicy
4142_K08034_MK_Cmd	Galaxy Zone Command	Aktivni {ok} @ def	defaultPolicy
4142_K08034_MK_Status	Galaxy Zone Status	Zavreno {ok}	defaultPolicy
4143_K08033_MK_Cmd	Galaxy Zone Command	Aktivni {ok} @ def	defaultPolicy
6 4143_K08033_MK_Status	Galaxy Zone Status	Zavreno {ok}	defaultPolicy
4144_K08033_PIR_Cmd	Galaxy Zone Command	Aktivni {ok} @ def	defaultPolicy
4144_K08033_PIR_Status	Galaxy Zone Status	Neaktivni {ok}	defaultPolicy
4145_K08009_MK_Cmd	Galaxy Zone Command	Aktivni {ok} @ def	defaultPolicy
4145_K08009_MK_Status	Galaxy Zone Status	Zavreno {ok}	defaultPolicy
4146_K08003_MK_Cmd	Galaxy Zone Command	Aktivni {ok} @ def	defaultPolicy
6 4146_K08003_MK_Status	Galaxy Zone Status	Zavreno {ok}	defaultPolicy
4147_K08007_MK_Cmd	Galaxy Zone Command	Aktivni {ok} @ def	defaultPolicy
4147_K08007_MK_Status	Galaxy Zone Status	Zavreno {ok}	defaultPolicy
4148_K08004_MK_Cmd	Galaxy Zone Command	Aktivni {ok} @ def	defaultPolicy
4148_K08004_MK_Status	Galaxy Zone Status	Zavreno {ok}	defaultPolicy
4151_K09008_MK_Cmd	Galaxy Zone Command	Aktivni {ok} @ def	defaultPolicy
4151_K09008_MK_Status	Galaxy Zone Status	Zavreno {ok}	defaultPolicy
4152_K09006_MK_Cmd	Galaxy Zone Command	Aktivni {ok} @ def	defaultPolicy
4152_K09006_MK_Status	Galaxy Zone Status	Zavreno {ok}	defaultPolicy
4153_K09005_MK_Cmd	Galaxy Zone Command	Aktivni {ok} @ def	defaultPolicy
4153_K09005_MK_Status	Galaxy Zone Status	Zavreno {ok}	defaultPolicy
4154_K09003_MK_Cmd	Galaxy Zone Command	Aktivni {ok} @ def	defaultPolicy
6 4154_K09003_MK_Status	Galaxy Zone Status	Zavreno {ok}	defaultPolicy

New Folder New Staft Taglt

Figure 8: Zone Commands and Statutes



Outputs extension

Output extension contains Output Statuses. Statuses are all polled at once. Outputs extension uses normal poll frequency. You can create this point manually or by Create Outputs action on Outputs extension.

Output Status is Writable Boolean point with true or false value.

Database			256 obje	ects
Name	Туре	Out	Tuning Policy Name	₽₽
B Output_statu	s_1 Galaxy Output Status	true {ok} @ def	defaultPolicy	*
B Output_statu	s_2 Galaxy Output Statu	true {ok} @ def	defaultPolicy	
B Output_statu	s_3 Galaxy Output Statu	true {ok} @ def	defaultPolicy	
B Output_statu	s_4 Galaxy Output Status	true {ok} @ def	defaultPolicy	
B Output_statu	s_5 Galaxy Output Status	true {ok} @ def	defaultPolicy	
B Output_statu	s_6 Galaxy Output Statu	true {ok} @ def	defaultPolicy	
Output_statu	s_7 Galaxy Output Statu	true {ok} @ def	defaultPolicy	
B Output_statu	s_8 Galaxy Output Status	true {ok} @ def	defaultPolicy	
B Output_statu	s_9 Galaxy Output Statu	true {ok} @ def	defaultPolicy	
B Output_statu	s_10 Galaxy Output Statu	true {ok} @ def	defaultPolicy	
Output_statu	s_11 Galaxy Output Statu	true {ok} @ def	defaultPolicy	
B Output_statu	s_12 Galaxy Output Statu	true {ok} @ def	defaultPolicy	
B Output_statu	s_13 Galaxy Output Statu	true {ok} @ def	defaultPolicy	
B Output_statu	s_14 Galaxy Output Status	true {ok} @ def	defaultPolicy	
B Output_statu	s_15 Galaxy Output Statu	true {ok} @ def	defaultPolicy	
B Output_statu	s_16 Galaxy Output Statu	true {ok} @ def	defaultPolicy	
B Output_statu	s_17 Galaxy Output Statu	true {ok} @ def	defaultPolicy	
B Output_statu	s_18 Galaxy Output Statu	true {ok} @ def	defaultPolicy	
B Output_statu	s_19 Galaxy Output Statu	true {ok} @ def	defaultPolicy	
B Output_statu	s_20 Galaxy Output Statu	true {ok} @ def	defaultPolicy	
B Output_statu	s_21 Galaxy Output Statu	true {ok} @ def	defaultPolicy	
Output_statu	s_22 Galaxy Output Statu	true {ok} @ def	defaultPolicy	
B Output_statu	s_23 Galaxy Output Statu	true {ok} @ def	defaultPolicy	
B Output_statu	s_24 Galaxy Output Statu	true {ok} @ def	defaultPolicy	
🚯 Output statu	s 25 Galaxy Output Status	true {ok} @ def	defaultPolicy	Ŧ

Figure 9: Output Statuses



Users extension

Users extension contains Users. To save bandwith info about users is only polled when GalaxyUserManager is opened. You can create these points manually or by Create Users action on Users extension. User will be prompted to enter id of first user and count, desired amount of users from that id will be then created. To change User name or PIN Code you can call Set Code action on GalaxyUser point. User will be prompted to enter code string and name string. You can enter new code or new name or both. New code can't be same to code of other user in database and user will be alerted about that.

Database		6 objects
Name	User Id	Name String
GalaxyUser1	1	USER
GalaxyUser2	2	USER
🗎 GalaxyUser	0	MGR.
GalaxyUser3	3	USER
GalaxyUser4	4	USER
GalaxyUser5	5	MAR

New Folder 💽 New 🖉 Edit 🔍 Tagit

Figure 10: Galaxy Users