

### **ALVASYS-DR-SOLAR Driver**

Software installation and configuration manual.

Ver: 1.1.0.0 Date: June 26<sup>th</sup> 2024 Author: S. M.Meriano

# 1 History

Filename: ALVASYS-DR-SOLAR_v1.1.0.0.odt				
Rev.	Date	Author	Description	
1.0	26.06.2024	M.Marcello	First draft	





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## 4 . Introduction

### Requirements

- Niagara 4.x (>= 4.7)
- A license to use the ALVASYS-DR-SOLAR driver. Other device limit or proxy-point limits may apply to your license. For license details and options, see the ALVASYS-DR-SOLAR price list.

### Module

The ALVASYS-DR-SOLAR Driver is contained in two files:

alvassiSolar-rt.jar





### Compatibility

### **Platforms** The ALVASYS-DR-SOLAR driver runs on Niagara 4.x (>= 4.7) platforms.

### **Tested versions**

Niagara 4.10.x +4.13

## 5 . License

The licence there you need is the only one and you can add more than one location on the Host.

## 6 . Installing the software

Installing the ALVASYS-DR-SOLAR driver is simple.

It requires a basic knowledge of the Tridium Niagara 4 and execute a few steps as described hereafter. The driver, a Java ".jar" executable file, is usually shipped in a zip file. Its name is generated according to the following structure:

```
alvassiSolar-rt_<version number> (i.e. alvassiSolar-rt_v1.1.0.0)
```

The number of the version characterises the features included in the driver and may vary from time to time. An additional text file is normally added to the zip file, in order to explain the main features of the release. Its name may appear as follow:

Note on SwVer <version number> (i.e. Note on SwVer 1.0.0)







Installing the driver on your PC

The following procedures describe how to set-up the driver.

Step 1	First of all unzip the files which contains the driver and technical notes.
Step 2	Rename the files, changing theirs name into <b>alvassiSolar</b> -rt Extension .jar should remain as well.
Step 3	Copy the two jar files into the modules directory of your Niagara Work Bench.
Step 4	Restart your Work Bench.
Step 5	After restarting, the file should appears in the list of available software, which can be shown clicking on the Software Manager section of the Platform of your Work Bench.

### Installing the driver into the JACE/HAWK unit

Step 1	Through the Work Bench get connected to a JACE/HAWK running unit.				
Step 2	Transfer the <b>alvassiSolar</b> module into the unit under the folder <b>modules</b> .				
	This can be done by activating the standard Tridium procedure for software upgrading or simply				
	copying the jar files by the File Transfer Client procedure, available under the list of the				
010	Platform options in your Work Bench.				
Step 3	Destination directory inside the Jace8000 is: /opt/niagara/modules				
	For further details on how to transfer files from <b>Work</b> Bench to JACE/HAWK units, refer to the official				
	Tridium documentation.				
Step 4	After copying the driver into the JACE/HAWK unit, force a reboot.				





# 7 . Driver configuration

## Installing the alvasysSolar Service

The first step of the driver configuration is the installation of the alvasysSolar Service under the station running in the JACE/HAWK unit.

👻 🎽 Station (a	lvasys_Musterstation)		^
🌲 Alarr	n		
👻 🖯 Kont	lig		- 11
- 3	Services		
Þ	AlarmService		
Þ	BackupService		_
Þ	CategoryService		_
	JobService		
>	3 RoleService		
F	C UserService		
•	AuthenticationService		_
	DebugService		_
	BoxService		_
	👹 FoxService	$\mathbf{k}$	
• Palette			2
🖿 🗙 🖉	alvassiSolar		•
🕨 🦹 SolarForecast			

A simple way to complete this task is to open the **Palette** named **alvassiSolar** (see figure below), select the **AlvasysSForcast** component and drag and drop it under the **Services** folder of the running station.

This component is a network-level component in the Niagara architecture.



## **Configuring the Parameters**

To proceed with this task, right click on the AlvasysForcast (just dragged to station Services) and open its

### Property Sheet:

🐩 Sola	rForecast (Solar Forecast)					
<b>1</b>	Status	{OK}				
) 🗎 F	Fault Cause					
<b>D</b>	Enabled					
	.∰ [0 ms - +inf]					
	Last Update	27.Jun 202	24 15	:56:21 MESZ		
	Last Failure	null				
5	Latitude	47.3943 deg				
5	Longitude	8.4741 deg				
) 🗊	Dec	90		deg		
	Az	90	deg			
	Кwp	15.00	kW			
101	Watts Today	Solar Folder	r			
101	Watts Tomorrow	Solar Folder	r			
101	Watt Hours Today	Solar Folder	r			
101	Watt Hours Tomorrow	Solar Folder	r			
> O 1	Watt Hours Period Today	Solar Folder	r			
10 V	Watt Hours Peri <mark>od</mark> Tomorrow	Solar Folder	r			
	Watt Hours Day Today	32180.00	W-h	r:		
	Watt Hours Day Tomorrow	19443.00	W-h	r		
<b>)</b>	Api Message latitude: 47.3943 longitude: 8.4742 distance: 0.008 place: Hermetschloostrasse 75, 8048 Zurich, Switzerland timezone: Europe/Zurich zone: IP 62.202.20.141 period: 3600 limit: 12 remaining: 5					

Enable:	true	activate forecast Service
Update Period:	1h	in one hour you can only ask the service 12 time per
		IP address!
Last Update:	(time)	information when the service has updated the value.
Last Failure		last message error

41 (0)44 261 00 70 info@alvasys.ch / www.alvasys.ch / www.alvasys.de



Latitude:	of location, $-90$ (south) 90 (north); handeled with a precission of 0.0001 or abt. 10 m
Longitude:	of location, -180 (west) 180 (east) handeled with a precission of 0.0001 or abt. 10 m
Dec:	plane declination, 0 (horizontal) 90 (vertical) - always in relation to the earth's surface
Az:	plane <b>azimuth</b> , -180 180 (-180 = north, -90 = east, 0 = south, 90 = west, 180 = north)
Kwp:	installed modules power in kilo watt; float

Latitude and Longitude information from <a href="https://www.google.ch/maps">https://www.google.ch/maps</a>

- 1. number is Latitude 47.3943291804062
- 2. number is Longitude **8.474159297817193**



Dec plane declination, 0 (horizontal) ... 90 (vertical) - always in relation to the earth's surface







### Az: Azimuth

Please note that e.g. Home Assistant uses internal a  $0^{\circ}$  ...  $360^{\circ}$  logic, so make sure to translate for direct API calls ...







## Value Output

All value are arrive from the <u>https://forecast.solar/</u> and we are using the <u>https://doc.forecast.solar/account\_models#public</u> (Public)

### Watts Today:

0	Wa	tts Today	Solar Folder
Ŧ	0	Sunrise Sunset	Sun Folder
	•	SunriseTime	05:31:30 {OK}
	Þ.	SunriseValue	0,00 W {OK}
	Þ.	SunsetTime	21:27:06 {OK}
	•	SunsetValue	0,00 W {OK}
Þ.	Ð	01:00:00	0,00 W {OK}
Þ.	P	02:00:00	0,00 W {OK}
Þ.	Ð	03:00:00	0,00 W {OK}
₽.	Ð	04:00:00	0,00 W {OK}
Þ.	Ð	05:00:00	0,00 W {OK}
Þ.	0	06:00:00	105,00 W {OK}
Þ.	Ð	07:00:00	302,00 W {OK}
₽.	Ð	08:00:00	510,00 W {OK}
Þ.	0	09:00:00	630,00 W {OK}
Þ.	0	10:00:00	773,00 W {OK}
Þ.	Ð	11:00:00	1064,00 W {OK}
₽.	0	12:00:00	1160,00 W {OK}
Þ.	0	13:00:00	1524,00 W {OK}
Þ.	0	14:00:00	2452,00 W {OK}
Þ.	Ð	15:00:00	3528,00 W {OK}
₽.	0	16:00:00	4386,00 W {OK}
Þ.	Ð	17:00:00	5101,00 W {OK}
Þ.	0	18:00:00	4793,00 W {OK}
Þ.	Ð	19:00:00	3382,00 W {OK}
₽.	0	20:00:00	2035,00 W {OK}
Þ.	0	21:00:00	0,00 W {OK}
Þ.	0	22:00:00	0,00 W {OK}
Þ.	0	23:00:00	0,00 W {OK}
þ.		24:00:00	0,00 W {OK}



### Watts Tomorrow:

C	) W	atts	Tomorrow	Solar Folder
-	C	) Su	inrise Sunset	Sun Folder
	•		SunriseTime	05:31:59 {OK}
	Þ	D	SunriseValue	0,00 W {OK}
	Þ		SunsetTime	21:27:01 {OK}
	Þ	0	SunsetValue	0,00 W {OK}
Þ	9	01	:00:00	0,00 W {OK}
Þ	Q	02	2:00:00	0,00 W {OK}
Þ	Q	03	:00:00	0,00 W {OK}
Þ	9	04	:00:00	0,00 W {OK}
Þ	Q	05	:00:00	0,00 W {OK}
Þ	Q	06	6:00:00	99,00 W {OK}
Þ	Q	07	:00:00	271,00 W {OK}
Þ	Q	08	3:00:00	497,00 W {OK}
Þ	Q	09	00:00	671,00 W {OK}
Þ	Q	10	00:00:00	686,00 W {OK}
Þ	Q	11	:00:00	655,00 W {OK}
Þ	Q	12	2:00:00	664,00 W {OK}
Þ	9	13	:00:00	939,00 W {OK}
•	9	14	:00:00	1648,00 W {OK}
Þ	Q	15	00:00	2206,00 W {OK}
Þ	9	16	00:00	2533,00 W {OK}
Þ	9	17	2:00:00	2660,00 W {OK}
Þ	9	18	3:00:00	2482,00 W {OK}
Þ	Q	19	00:00	1945,00 W {OK}
Þ	9	20	0:00:00	1232,00 W {OK}
Þ	9	21	:00:00	0,00 W {OK}
Þ	Q	22	2:00:00	0,00 W {OK}
Þ	Q	23	:00:00	0,00 W {OK}
		24	:00:00	0,00 W {OK}

+41 (0)44 261 00 70 info@alvasys.ch / www.alvasys.ch / www.alvasys.de





### Watt Hours Today:

0	Wa	att Hours Today	Solar Folder
Ŧ	0	Sunrise Sunset	Sun Folder
	۶.	SunriseTime	05:31:30 {OK}
	Þ.	SunriseValue	0,00 W-hr {OK}
	Þ	SunsetTime	21:27:06 {OK}
	¥.	SunsetValue	32180,00 W-hr {OK}
Þ.	0	01:00:00	0,00 W-hr {OK}
Þ.	0	02:00:00	0,00 W-hr {OK}
Þ.	Ð	03:00:00	0,00 W-hr {OK}
₽.	0	04:00:00	0,00 W-hr {OK}
Þ.		05:00:00	0,00 W-hr {OK}
₽.		06:00:00	25,00 W-hr {OK}
Þ.	Ð	07:00:00	229,00 W-hr {OK}
Þ	0	08:00:00	635,00 W-hr {OK}
Þ.		09:00:00	1205,00 W-hr {OK}
Þ.		10:00:00	1907,00 W-hr {OK}
Þ.	0	11:00:00	2826,00 W-hr {OK}
Þ.	0	12:00:00	3938,00 W-hr {OK}
Þ.		13:00:00	5280,00 W-hr {OK}
Þ.		14:00:00	7268,00 W-hr {OK}
Þ.		15:00:00	10258,00 W-hr {OK}
Þ.	0	16:00:00	14215,00 W-hr {OK}
Þ.	9	17:00:00	18959,00 W-hr {OK}
Þ.		18:00:00	23906,00 W-hr {OK}
Þ	0	19:00:00	27994,00 W-hr {OK}
Þ	0	20:00:00	30703,00 W-hr {OK}
Þ		21:00:00	0,00 W-hr {OK}
Þ		22:00:00	0,00 W-hr {OK}
Þ	0	23:00:00	0,00 W-hr {OK}
Þ.		24:00:00	0,00 W-hr {OK}





#### Watt Hours Tomorrow:

0	Wa	att Hours Tomorro	w Solar Folder
Ŧ	0	Sunrise Sunset	Sun Folder
	Þ	SunriseTime	05:31:59 {OK}
	Þ	SunriseValue	0,00 W-hr {OK}
	Þ.	SunsetTime	21:27:01 {OK}
	₽.	SunsetValue	19443,00 W-hr {OK}
Þ.	Ð	01:00:00	0,00 W-hr {OK}
Þ.	Ð	02:00:00	0,00 W-hr {OK}
Þ.	9	03:00:00	0,00 W-hr {OK}
Þ.	Ð	04:00:00	0,00 W-hr {OK}
Þ.	9	05:00:00	0,00 W-hr {OK}
Þ.	9	06:00:00	23,00 W-hr {OK}
Þ.	9	07:00:00	208,00 W-hr {OK}
Þ.	9	08:00:00	592,00 W-hr {OK}
Þ.	9	09:00:00	1176,00 W-hr {OK}
Þ.	9	10:00:00	1855,00 W-hr {OK}
¥.	9	11:00:00	2526,00 W-hr {OK}
Þ.	9	12:00:00	3186,00 W-hr {OK}
Þ.	9	13:00:00	3988,00 W-hr {OK}
Þ.	9	14:00:00	5282,00 W-hr {OK}
Þ.	9	15:00:00	7209,00 W-hr {OK}
Þ.	9	16:00:00	9579,00 W-hr {OK}
Þ.	9	17:00:00	12176,00 W-hr {OK}
Þ.	9	18:00:00	14747,00 W-hr {OK}
Þ.	9	19:00:00	16961,00 W-hr {OK}
Þ.	9	20:00:00	18550,00 W-hr {OK}
Þ.	9	21:00:00	0,00 W-hr {OK}
Þ.	9	22:00:00	0,00 W-hr {OK}
Þ.	9	23:00:00	0,00 W-hr {OK}
•	9	24:00:00	0,00 W-hr {OK}



### Watt Hours Period Today:

r	0	Wa	att Hours Period To	oday Solar Fol	lder
	×	0	Sunrise Sunset	Sun Folder	
		Þ.	SunriseTime	05:31:30 {OK}	
		Þ.	SunriseValue	0,00 W-hr {OK}	
		Þ.	SunsetTime	21:27:06 {OK}	
		Þ.	SunsetValue	1477,00 W-hr {OK}	
	•	9	01:00:00	0,00 W-hr {OK}	
	•	9	02:00:00	0,00 W-hr {OK}	
	Þ.	Ð	03:00:00	0,00 W-hr {OK}	
	Þ.	9	04:00:00	0,00 W-hr {OK}	
	•	9	05:00:00	0,00 W-hr {OK}	
	•	9	06:00:00	25,00 W-hr {OK}	
	Þ.	Ð	07:00:00	204,00 W-hr {OK}	
	Þ.	9	08:00:00	406,00 W-hr {OK}	
	•	9	09:00:00	570,00 W-hr {OK}	
	•	9	10:00:00	702,00 W-hr {OK}	
	Þ.	9	11:00:00	919,00 W-hr {OK}	
	Þ	9	12:00:00	1112,00 W-hr {OK}	
	•	9	13:00:00	1342,00 W-hr {OK}	
	•	9	14:00:00	1988,00 W-hr {OK}	
	Þ.	9	15:00:00	2990,00 W-hr {OK}	
	Þ.	Ð	16:00:00	3957,00 W-hr {OK}	
	•	9	17:00:00	4744,00 W-hr {OK}	
	•	Ð	18:00:00	4947,00 W-hr {OK}	
	Þ.	Ð	19:00:00	4088,00 W-hr {OK}	
	Þ.	Ð	20:00:00	2709,00 W-hr {OK}	
	•	9	21:00:00	0,00 W-hr {OK}	
	•	9	22:00:00	0,00 W-hr {OK}	
	Þ	9	23:00:00	0,00 W-hr {OK}	
	Þ	9	24:00:00	0,00 W-hr {OK}	
	_				





#### Watt Hours Period Tomorrow:

Sunrise Sunset Sun Folder	
SunriseTime 05:31:59 {OK}	
SunriseValue 0,00 W-hr {OK}	
SunsetTime 21:27:01 {OK}	
SunsetValue 893,00 W-hr {OK}	
🗎 01:00:00 0,00 W-hr {OK}	
02:00:00 0,00 W-hr {OK}	
🗎 03:00:00 0,00 W-hr {OK}	
04:00:00 0,00 W-hr {OK}	
0,00 W-hr {OK}	
06:00:00 23,00 W-hr {OK}	
📔 07:00:00 185,00 W-hr {OK}	
📔 08:00:00 384,00 W-hr {OK}	
99:00:00 584,00 W-hr {OK}	
10:00:00 679,00 W-hr {OK}	
11:00:00 671,00 W-hr {OK}	
12:00:00 660,00 W-hr {OK}	
13:00:00 802,00 W-hr {OK}	
14:00:00 1294,00 W-hr {OK}	
15:00:00 1927,00 W-hr {OK}	
16:00:00 2370,00 W-hr {OK}	
17:00:00 2597,00 W-hr {OK}	
18:00:00 2571,00 W-hr {OK}	
19:00:00 2214,00 W-hr {OK}	
20:00:00 1589,00 W-hr {OK}	
21:00:00 0,00 W-hr {OK}	
22:00:00 0,00 W-hr {OK}	
23:00:00 0,00 W-hr {OK}	
24:00:00 0,00 W-hr {OK}	

### Watt Hours Day Today and Tomorrow:

📔 Watt Hours Day Today	32180.00	W-hr
Watt Hours Day Tomorrow	19443.00	W-hr



#### API Message:

🎦 Api Message	<pre>latitude: 47.3943 longitude: 8.4742 distance: 0.008 place: Hermetschloostrasse 75, 8048 Zurich, Switzerland timezone: Europe/Zurich zone: IP 62.202.20.141 period: 3600 limit: 12 remaining: 5</pre>
---------------	---

#### All Value are in the subfolders:

	olarForecast (Solar Forecast)							
	Status	{OK}						
	Fault Cause							
	🗎 Enabled	🔵 ein	-					
	📔 Update Period	00001h 00m 00s 🚔 [0ms-+inf]						
	📔 Last Update	27.Jun 2024 15:56:21 MESZ						
	📔 Last Failure	null						
	📔 Latitude	47.3943 deg						
	📔 Longitude	8.4741	ğ					
	📄 Dec	90		deg				
	Az	90		deg				
	🚰 Kwp	15.00	kW					
Þ	O Watts Today	Solar Folder						
Þ	O Watts Tomorrow	Tomorrow Solar Folder						
Þ	Watt Hours Today	Solar Folder						
Þ	O Watt Hours Tomorrow	Solar Folder						
Þ	🔘 Watt Hours Period Today	Solar Folder						
Þ	Watt Hours Period Tomorrow	Solar Folder						
	🎬 Watt Hours Day Today	32180.00 W-h		hr				
	📔 Watt Hours Day Tomorrow	19443.00	W-	hr				
	🎦 Api Message	latitude: longitude distance: place: He timezone: zone: IP period: 3 limit: 12 remaining	47. 10.0 1	3943 4742 08 schloostrasse 75, 8048 Zurich, Switzerland pope/Zurich 02.20.141				

For more information go to this side: <u>https://doc.forecast.solar/api:estimate</u>