Connecting UniStream to



Step by step guide

This document is based on an UniStream sample application for Pumps. The application is available for <u>download</u>; it has Tags and Alarms defined for your ease of use.

IP Address and DNS server settings

For the UniStream controller to communicate to the UniCloud, the IP Address and DNS server settings must be defined in the project.

- 1. In the Solution Explorer, **navigate** to PLC Communications > Physical > Panel Ethernet.
- 2. In the Properties Window, assign the panel a unique and available IP address on the network.
- 3. **Define** the DNS server settings.



VNC access definitions

To enable the HMI to be accessible remotely over a VNC connection:

- 1. Navigate to Password Management
- 2. Enable VNC working mode.



The same applies for **Web Server**.

UniCloud Setup

- 1. In the Solution Explorer, navigate to UniCloud.
- 2. Click to enable UniCloud integration.



Sign into UniCloud & Create an Asset Type

Either create or sign into an existing UniCloud Organization:

To create a UniCloud Organization, click Create Organization and sign up for UniCloud.,.

	Unicieus	Cloud Pump - UniLogic
Projecti Edit Layout PLC Too	iols Asset Type Help	
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Login Logout Cr Asse	reate Refresh Sync Compare et Type Asset Type Asset Type	Create Organization
Authentication	UniCloud	Organization
olution Explorer	👻 🕂 🖪 🕂 😽 🕂 🗸 🗸 🗸 🗸 🗸	dule1 × Password Management × Web Page1 × Web Server
earch Solution Explorer	2	
Hardware Configuratio Motion Motion Methoder Methoder MHI G Web Server Mil Micloud Motion		

For returning users, click **Sign in** and enter the Cloud Credentials.



Once signed in, create an Asset Type.



An Asset Type is unique to the UniLogic project. It defines the structure of Tags and Alarms that will be communicated to the Cloud.

Give the Asset Type a name.

olution Explorer	• #	Asset Type	× UniCloud	X Password Manageme	ent × Panel Ethernet (1	92.168.1.70) × Contro	oller Model (US5/7-B	10-R38) ×
Arch Solution Explorer Solution 'Cloud Pump' Project Controller Model (US5/7-B10-R38) Uni-I/O & Uni-COM URB Remote I/O URB Remote I/O Motion Drives Motion Motion Physical Physical Communications Communications	<u></u>				Let's get	started by c	reating a r	new Asset Type
Coro Externet (0.0.00) Controller USB Port (inactive) Modems Router Station Web Server Modems UniCloud Passet Type Qalarms				Asset Type Creation Choose Organization: Asset Type name:	Fuson Pump Co. UnitronicsPump	Create Ass() Type	Cancel	7

The Asset Type is created.

Here are its properties, including organization, name, and status.

Under Subscription, **define** the Tags Timer Interval. This is the frequency at which the tags will be communicated to the Cloud.

Organization	Organization		fus Or	onpumpcompany@gmail.com <u>Sign out</u> janization name: Fuson Pump Co.
Asset Type	- guinzation			
Subscription	Organization name	Fuson Pump Co.		
	Asset Type			
	Asset Type name	UnitronicsPump		
	Asset Type Status	DRAFT		
	Subscription			
	Tags timer interval	00:05:00		
	Subscription plan required	Unknown		
		*Expected	Monthly Number of tags updates: 0	
			3	
		Tags	Update Frequency	Total # tags per month
	Start-up	20	5 min	200,000
	Basic	40	1 min	2,000,000
	Intermediate	80	20 sec	11,000,000
	Advanced	200	10 sec	55,000,000

In the Solution Explorer, **navigate** to Asset Type.

Here, Tags and Alarms can be added. **Start** with Tags.

Individual tags, arrays, and Structs can be added here.

Solution Explorer • 4	Tags X	Asset Type X	UniCloud × Password	Management ×	Panel Ethernet (
Solution "Cloud Pump" Project		Add Tag			
EGeneration EGeneration EGeneration	=	Tag	Alias Name	Access Levels	Usage Coun
Uni-I/O & Uni-COM	0	Pump1		Read/Write	12
- I URB Remote I/O	1	Pump2		Read/Write	12
JEX-RC Remote I/O	2	Pump3		Read/Write	12

Alarms Setting

Navigate to Alarms. Enable Alarms for UniCloud.

All Alarms that are checked will be included in the Asset Type.

olution Explorer 🔹	Alarms X Tags X Asset Typ	e × UniCloud × Password Manager
earch Solution Explorer	P KEnable Alarms for	UniCloud
▲ □Project		
Hardware Configuration Controller Model (US5/7-B10-R38)	Name	Condition
Uni-I/O & Uni-COM	🔺 🗹 Alarm Group 1	
URB Remote I/O	Alarm 1	2.2 < Pump1.PressureIn < 2.25
JEX-RC Remote I/O	🗹 Alarm 2	9.9 < Pump1.PressureOut < 9.95
Motion	😰 Alarm 3	Pump1.PressureOut > 9.95
Semplic Communications	Alarm 4	Pump1.Temperature > 67
Panel Ethernet (192.168.1.70)	Alarm 5	66 < Pump1.Temperature < 67
CPU Ethernet (0.0.0.0)	Alarm 6	Pump1.Voltage < 372
Controller USB Port (Inactive)	🗹 Alarm 7	437 < Pump1.Voltage < 440
- Modems	🗹 Alarm 8	Pump1.Voltage > 448
	🔽 Alarm 9	Pump1.Current ≥ 3.99
► Mathematical American Stress Stres	Alarm Group 2	
GWeb Server	Alarm 10	2.2 < Pump2.PressureIn < 2.25
COuniCloud	Alarm 11	9.9 < Pump2.PressureOut < 9.95
Tags	Alarm 12	Pump2.PressureOut > 9.95
QAlarms	Alarm 13	Pump2.Temperature > 67
Alarms	Alarm 14	66 < Pump2.Temperature < 67

Enable UniCloud Remote Access

Navigate to Remote Access.

If desired, check the box for Remote Access Control.

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Solution Explorer Search Solution Explorer Solution Explorer Solution Cloud Pump' Solution 'Cloud Pump' Controller Model (US5/7-B10-R38) Uni-I/O & Uni-COM URB Remote I/O URB Remote I/O Motion Drives Motion SmapLc Communications SmapLic Communications SmapLic Communications SmapLic Communications SmapLic Communications SmapLic Controller USB Port (Inactive) Modems Router SmapLic Controller USB Port (Inactive) SmapLic Control	Remote Access Control Enabled
UniCloud Asset Type Asset Type Alarms Alarms	

Navigate to Asset Type. Sync the Asset Type to the Cloud.

Under Subscription, an expected number of monthly tags is calculated, based on the Tags in the Tag Timer Interval defined. Based on this number, one can anticipate the subscription plan required.

/ 🗋 🧉 🖶 🤊 🗧 Unitieed				Cloud Pump - UniLogic
Spect Edit Layout PLC Tools Asset Type Image: Login Logout Image: Create Asset Type Image: Create Asset Type Refresh Asset Type Authentication Authentication Image: Create Asset Type Image: Create Asset Type	Help	Compare Isset Type Organization Organization		
olution Explorer 🔹 🔻	Remote Access × Alam	is × Tags × Asset Type × Uni	Cloud × Password Manag	gement × Panel Ethernet (192.168.1.70) × Contr
arch Solution Explorer 🖉				
Solution 'Cloud Pump' Project Controller Model (US5/7-B10-R38) Uni-I/O & Uni-COM UNI-VO & UNI-COM	Organization Asset Type Subscription	Organization Organization name	Fuson Pump Co.	
■ JEX-RC Remote I/O ■ Motion Drives ■ Motion		Asset Type	Sync A	Asset Type Sync Asset Type
America Communications An arrow and a second sec		Asset Type name Asset Type Status	UnitronicsPump DRAFT Sync	ing Asset Type Properties
Controller Osb Port (inactive) Controller		Subscription		
► Ladder ► 2####HMI ₩eb Server ▲ 200 UniCloud		Tags timer interval Subscription plan required	00:05:00 Basic *Expe	cted Monthly Number of tags updates: 321,408
Asset Type Tags QAlarms			Tags	Update Frequency
Let "A nemote Access		Start-up	20	5 min

Download application to UniStream

Download the program. The Download is complete.



UniStream PLC setup

Access UniApps

On the HMI, hold the top right corner, enter UniApps >



Activate the PLC to work with UniCloud

Then > Network > UniCloud, and click Activate UniCloud.

	UniApps	04:33:00 PM 25
OPC UA OPC UA WhiCloud UniCloud System Memory	Network	UNITRONICS UNICloud UniCloud Asset Remote Access Activate Unicloud Activate Remote Access Clear Settings
		System Memory Network 🖉

Step 1 will be to create the Asset in the UniCloud.

Provide the UniCloud credentials.



Assign this Asset a name, keeping in mind this program can be downloaded to many different machines.

The Asset was successfully created.

UniCloud	Accat Bamata Ar	<u>V</u>	UNITRONICS' UniClou	d
	Organization	Fuson Pump Co.	UniCloud Asset Remote Ac	cess
	Asset Type	UnitronicsPump	Create Accet	
	PLC serial	T8RCBA00002	Create Asset	
	Asset Name	Machine15	Create Asset succeeded	
fusonp				
	ok	Cancel	Finan	
			Close	
System	Memory Ne	twork 💿 Utilities		

Step 2 - to activate UniCloud:

Load Certificate from UniCloud. The load succeeded.

UniCloud	Asset Remote Acce		38°	UniCloud	1 04	:34:46	
Activate UniCloud	Activate Remote Acce	15 UNICIDU	Load Certificate fr	om USB			UniCloud
fusonpumpcompany@gmail	com		Load Certificate from	UniCloud	Load Ce	ertificat	e Status
UniCloud Mode	Cloud Mode: UniCloud Asset	fusonpum	Decompany@gmail.com		Load Certific	cate from Unici	oud succ ee ded
System Ma	amory Network	Syste	UniCloud	l Mode: UniClou		Close	

At the top, click on Asset > Start sending data. This will connect the UniStream to the UniCloud.

The state change was successful.

	UniCloud	04:43:06 PM 25
UniCloud Ass	Remote Access	UniCloud Asset Remote Access
Statistics		Operation
Communication status	Disconnected (5)	Start sending data
Last transmission	Wed Nov 25 16:42:35 2020	You are about to ENABLE the UniCloud service
Asset type, Organization	UnitronicsPump, Fuson Pump C	20. Press OK to continue. UniCloud Asset Remote Access
SD Status	Missing	Cancel UniCloud Change State Status
System Me	emory Network O	UniCloud successfully changed state
		System Memory Net
		System Memory Network O

The communication status is now connected.

Operation	
	Stop sending data
Statistics	
Communication status	Connected (1)
Last transmission	Wed Nov 25 16:43:13 2020
Asset type, Organization	UnitronicsPump, Fuson Pump Co.

Login to UniCloud

Navigate to https://www.unitronics.io/login and sign into your Cloud account.

< → C ∆	a unitronics.io/login	
21/		
	UniClaud	
	Bruertouer	
	Email address	
	Fusonpumpcompany@gmail.com	
	Password	
-0	Forgot password?	
	Log in	

Once signed in, navigate to Device Management

Under the Assets tab, the new Asset, Machine15, type UnitronicsPump has been added.

The Status is Connected.

To change the Asset Properties, click on the Asset; things like Location, and custom serial numbers can be edited here.

- > C A	https://www.	unitronics.io/main/device-n	nanagement/assets	management/asset	s		07 Q	
			and generation as the	inenegeneny even				
-						English	V Jeff V	
My Dashboards	Device Manage	ement						
n Organizations	Assets Management	PLC Management Routers	Management					
/ Dashboard Editor	Assets	Asset Types						
M	Search	۹)				団 V	fiew Archived 💮	
My Account	Owner 🖗	Status 🐘 Last Update	Serial Number 🔋	Name o	Туре			
	Fuson Pump Co.	Connected 21/10/2020 15:1	8	Installation 2	Pump	VPN (WEB VNC	
	Fuson Pump Co.	Connected 25/11/2020 11:4	3	Machine15	UnitronicsPump	(VPN) (WEB VNC	
	Fuson Pump Co.	Available an in a loss	a		. n	(1001) (wen lair.	
	Fuson Pump Co.	Ava MACHINE15						
		Status: Connected			Get Telemet	ry 🗒 Certific	ate 🗇 Archive	22 Disconnec
		Asset name: Asset serial number: PLC serial number:	Machine15 T8RC8A00002	Last update: Date connected:	25/11/202 25/11/202	0 11:48:13 0	VPN WE	B VNC
		General Alarms	Tags Subscri	ption				
		Owner:	Fuson Pump Co.		Model:			1
		Location:	1 Batterymarch Park, 1 B 02169, USA	atterymarch Park, Quincj	y, MA PLC Mode PLC Catalo	l: U oo Number: U	inistream S7-B10-R38	5
		Type:	UnitropicsPump					

Start Building your Dashboard

To use the Asset Type on a dashboard, navigate to Dashboard Editor.

Use the Widgets at the top to create a Dashboard. Let's use a Table to show the speed of the three pumps.

							English	Jeff
My Dashboards	Unitronics Dashboard						Delete Y Filters 📀 F	review Publis
Device Management						Show/Hide grid	Resolution 12	80рк 🗸
Organizations Dashboard Editor	Clipboard	User filters	(O) Alarms	Image	ABC Text	123 Value	Table	ଲୀ Column
My Account			Drag and dr	op widgets here				
			3					
			>					
		At present th	ere is no relevant data	a ava				
		At present th) ere is no relevant data	a ava				

Define the:

- 1. Asset Type, UnitronicsPump, and the
- 2. Data for the widget Pump1 Speed, Pump2 Speed, and Pump3 Speed.
- 3. The Asset name, and the Data Timestamp.

Sectory the information you would like to disp Asset Types DATA 2 SCOPE Select the basives Rav Date or Lest Value or A I 3 ORGANIZE L1 Data Tags for Widget Select the Data Trags for Widget 3 ORGANIZE L3 Select the Data Properties that you wish to use in this widget. Asset Types (1) 41 CUSTOMIZE Unitronics Image: Context the Use to be asset to be asse	DAT	A	brint .	(-
 SCOPE Select the between Raw Deta or Last Value or A Beliet the between Raw Deta or Last Value or A L1 L2 L3 L4 L5 L6 Pump Diffronics. C Data Tags for Widget Select the Data Properties Select the Data Properties that you wish to use in this widget. L6 Pump Diffronics. C Data Tags for Widget Select the Tag Data (2) Select the Tag Data that you wish to use in this widget. CUSTOMIZE Widget name: Table 1 Widget name: Table 1 Widge	Sper	only the information you would like to disp	Asset Types	DATA Asset Types (1)	
 3 ORGANIZE Seectly now to organize the data to be displayed 4 CUSTOMIZE Widget name: Table 1 Widget type: table 5 NAVIGATE Connect the widget to other darboards. 5 NAVIGATE Connect the widget to other darboards. 	2 sco Sele	VPE ct the between Rew Dete or Lest Velue or A	Name	Unitronics 🐼 Data Tags for Widget Select the Data Tags that you wish to use in this widget. Asset Properties	DATA Asset Types (1)
4 CUSTOMIZE Pump1Speed & Pump2Speed & Asset name & Data Timestamp & 5 Widget type: table # Pump3.Current T Asset iD 5 NAVIGATE # Pump3.PowerConsumption Ø Geography Connect the widget to other dashboards. # Pump3.PressureIn T Organization	3 ORC Spec	SANIZE Sfy how to organize the data to be displayed	L4 L5 L6 Pump	Select the Data Properties that you wish to use in this w Tag Data (2) Select the Tag Data that you wish to use in this widget.	Unitronics Data Tags for Widget Select the Data Tags that you wish to use in this widget. Asset Properties (2) Select the Data Properties that you wish to use in this
5 NAVIGATE # Pump3.PowerConsumption Ø Geography Connect the widget to other dailboards. # Pump3.PressureIn T Organization # Pump3.PressureOut T Status	4 cus Wid Wid	TOMIZE get name: Table 1 get type: table	4m)	Pump1.Speed 🔇 Pump2.Speed 🚫	Asset name 😵 Data Timestamp 🛞 T Asset ID T Asset name
□ x Pump3,Status □ © Date	5 NAV Con	AGATE nect the widget to other dashboards.		# Pump3.PowerConsumption # Pump3.PressureIn # Pump3.PressureOut # Pump3.Speed # Pump3.Status	 Geography T Organization T Status Date

are the (a)				
Unitronics 🛞				
Data Tags for Widget Select the Data Tags that you wish to use in this widget.				
Asset Properties (2) Select the Data Properties that you wish to use in this widget.				
Asset ID 🔕 Data Times 🔕		_		
Tag Data (3)		DATA	SCOPE	
Select the Tag Data that you wish to use in this widget.		Data Taga for Widget: Asset Properties (2): Asset ID, Di Tag Data (3): Pumpt Speed Pum	Aggregated Data Group and perform calculations on your da	Last Value View the latest value of the selected data
Pump1.Spe 😵 Pump2.Spe 🔇 Pump3.Spe 🔇		scope	ta Select this option when you want to perform c	Select this option when you want the widget o display either the last value of the selected
		Last value	alculations and groupings on aggregated data collected from more than one data tag.	data or perform calculations on it.
Cancel Save as draft Back Next	3			

Under Data and Metrics, build a table structure.

	DATA	ORGANIZE	
	Asset Types (1): UnitronicsPump Deta Tags for Widget: Asset Properties (3): Asset nam	Grouping & Measures	
	Tag Data (3): Pump1.Speed, Pu	Available Data 🌒	Group By 🚺
9	SCOPE Last value	۹	Dreg and drop data here to group the information. You ca
		<pre># Pump3.Speed</pre>	cannot be used for grouping. The order of the grouping is defined according to the tegs order.
~	ORGANIZE Data and Metrics (4): Asset name		Data and Metrics
			🕂 T Asset name
4	CUSTOMIZE		T Asset ID
	Widget name: Table 2 Widget type: table		O Data Timestamp
	Widget type: table	🔂 # Pump	p2 Speed

A table is created with the Asset name,

Time and Date stamp, and the speed of the three pumps



Cliptoerd	User filter:	Alarms	Irrage	AB(Text	123 Val.	e Table	ai co	lumrs	Pie	Se Map
					Table 1				• /	•
					Machine15	Data Tinestamp 2020-11-25 16:53	Pump1.Speed	Pump2.5peed	Pump3.Speed	_
										• •

What next?

To learn more about UniCloud and how to continue building your dashboard open the drop-down menu with your name at the top right and select the Help option for further information.



For additional help you may always contact <u>unicloud@unitronics.com</u>