GEOKON TRUSTED MEASUREMENTS®

Product Tutorial

Using Agent Software to Collect and Display Data from GeoNet Networks



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Topics Covered in this Tutorial

- Software Installation
- Program Overview
- Projects and Networks
- Downloading Data
- Sensors
- <u>Charts</u>

Software Installation



Before Using Agent

- All devices in the Network should be properly installed
- Make sure all Nodes have successfully joined the Network
- Connect the Network Supervisor to the computer using the factory supplied cable (If using a serial server or cellular modem, the device URL or IP Address must already be established)
- For information regarding the installation of GeoNet devices, watch the <u>GeoNet Installation tutorial</u> or refer to the <u>GeoNet</u> <u>instruction manual</u>

Program Download

- 1. Before installing Agent onto a computer, verify that it meets these minimum system requirements:
 - Microsoft[®] Windows[®] 7, 8, or 10; running a 32-bit or 64-bit operating system
 - ▶ 1 GB of RAM (physical memory) available during runtime
- 2. Navigate to www.geokon.com/Software
- 3. Select the appropriate installer based on the operating system of the computer:
 - ► For 32-bit systems, download "Agent Software (x86)"
 - For 64-bit systems, download "Agent Software (x64)"

(To determine the computer's operating system, click Start, type "system" in the start search box, click "System" in the control panel list, then look for "System Type:")

Installing the Software

1. Locate and open the Agent-x64.zip (or Agent-x86.zip) folder that was downloaded from the GEOKON website



2. Double click on the windows installer



Agent-x64-1.6.1.1.msi

3. If a security warning appears, click "Run"



Installing the Software (Continued)

4. Read the License Agreement, check the box below to accept the terms of the agreement, and then click "Install"



5. When the installation is complete, click "Finish" to close the installer and launch the program

Program Overview



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Program Overview

- On startup, Agent defaults to a screen that shows any Projects that have been created
- Projects are at the top of the program's hierarchy; they contain GeoNet Networks, which in turn contain a certain number of Nodes as well as the Network Supervisor



Program Overview (Continued)

 Each Supervisor or Node can be assigned multiple sensors (which import data collected by the device) and charts (which display data imported by sensors)



Program Overview (Continued)

 The menu on the left side of the screen is used to navigate the program

AGENT»		?
projects Sample Project Sample Network Sample Node view charts chart settings summary node settings sensor summary	Node Name Sample Node 1533349 8800-XX-01C Save Sensors Add reading sensor Add thermistor sensor Add node sensors	

 The menu expands and contracts as the user navigates through the different levels of the program's hierarchy

Projects and Networks



Adding Projects

1. Click "add project"



2. Enter a Name and Description for the project, then click "Save" (Name is required, Description is optional)



Project List

Once a project has been created, it will be added to the projects list

projects	name	description	created	delete
add project	Sample Project	NH Tunnel Site	Thu Sep 20 2018	Х
add project	Project 1	Strain Gauges	Tue Aug 13 2019	Х
	Project 2	Addressable MEMS	Tue Aug 13 2019	Х

 The list of projects can be accessed at any time by clicking "projects" at the top of the menu

Adding a Network

1. Select a project by clicking on the project name

proje	cts	name	description	created	delete
ad	d project	Sample Project	NH Tunnel Site	Thu Sep 20 2018	Х
		Project 1	Strain Gauges	Tue Aug 13 2019	X
		Project 2	Addressable MEMS	Tue Aug 13 2019	Х

2. Click "add network"



Adding a Network: Wireless Connections

3a. If connecting to the Supervisor via a serial server or cellular modem, enter the device URL or IP Address as the "Network Address"
 (IP addresses must be followed by a colon and then the port number)

projects	- Network Settings
Sample Project	Name Network Address
list	new network 192.168.1.1:555 get network settings
add network add lc2 transfer	Serial Number Scan Rate Deploy Period 10 minutes 1 hour
project settings	Description/Notes

Adding a Network: USB and RS-232 Cables

3b. If connecting to the Supervisor using a cable, type "COM" In the "Network Address" field, then select the COM port the Supervisor is connected to (If the correct port is not shown, close Agent, make sure the device is powered on, the cable connection secure, and then try again)

projects	 Network Settings 		
Sample Project	Name	Network Address	
list	new network	СОМ	get network settings
add network add Ic2 transfer project settings	Serial Number Description/Notes Save	Sca COM3 COM9 COM1	

Adding a Network: USB and RS-232 Cables (3b. Continued)

Unsure of which COM port the Supervisor is connected to?

- RS-232 connections will normally use COM1, but may use COM2 or COM3 if the computer has multiple serial ports
- To determine the correct port for a USB connection, click Start , type "device" in the search box, then click "device manager" in the control panel list. Next, click the triangle next to "Ports (COM & LPT)" to expand the list



Disconnect and then reconnect the USB cable to the computer—the COM port the Supervisor is using will disappear and then reappear on the list

Adding a Network (Continued)

4. After entering a Network Address, click "get network settings". The "Serial Number" field will populate automatically once Agent has successfully connected to the Supervisor

projects	- Network Settings		
Sample Project	Name	Network Address	
list	new network	COM9	get network settings
add network add Ic2 transfer project settings	Serial Number 1537815 Description/Notes Save	Scan Rate Deploy Period 10 minutes • 1 hour •	

Adding a Network (Continued)

5. Other Network Settings available include:

- ► Name: Enter a descriptive name for the Network
- Scan Rate: Determines how often Nodes take sensor readings (Should be left at 10 minutes until it has been verified that all Nodes are present and collecting data)
- Deploy Period: Sets duration of "Deployment Mode" on the Supervisor (i.e. how long it will search for new Nodes)
- Description/Notes: Enter any additional Network information
- 6. When finished editing the Network Settings, click "Save"

Nodes Screen

 After a Network is created, Agent automatically navigates to a screen that lists all the devices associated with that Network

projects Sample Project Sample Network	node type Supervisor	<u>name</u> (Not Set)	serial number 1537815	last reading	battery level	signal strength	<mark>charts</mark> 0	remove X
nodes	8800-XX-01C	(Not Set)	1537823				0	X
export live	8800-XX-04C	(Not Set)	1533349				2	х

- Only Nodes that have joined the Network will be displayed
- Nodes subsequently added to the Network will not appear on the list until after the next downloaded
- Data for "last reading", "battery level", and "signal strength" will displayed once it has been downloaded from the Network

Downloading Data



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Downloading Data

- Data will only be collected from the Network when a data download occurs
- Data will not appear on charts, on the Node Screen, etc., until it has been downloaded from the Network
- Downloads can be initiated manually or set to occur automatically
- When Automatic Download is enabled, Agent will automatically download data from the Network at specific times or intervals
- If Automatic Download is disabled, Agent will only download data when the user initiates a manual download

Automatic Download

1. Select a project by clicking on the project name

projects list add project	name Sample Project	description NH Tunnel Site Strain Gauges	created Thu Sep 20 2018 Tue Aug 13 2019	delete X X
	Project	Strain Gauges	Tue Aug 13 2019	X

2. Click the 😟 icon that corresponds with the Network to be downloaded

projects Sample Project list add network	– GeoNet Networks – name	settings	download	supervisor serial number	address	scan rate	download ra	ite delete
add lc2 transfer	Sample Network		₹	1537815	COM9	10 min.	45 min.	×
project settings	– LC2 Data Loggers –							
	name	settin	gs downlo	serial num	ber addr	ess scan	rate type	delete
	Sample LC2	۲	₹	1742325	CON	14 60 se	c. single	X

Automatic Download (Continued)

3. Check "Enable automatic Download"

projects	- Network Settings
Sample Project	Name Network Address
Sample Network	Sample Network COM9 get network settings
nodes	Serial Number Scan Rate Deploy Period Description/Notes
network settings	1537815 10 minutes 1 hour Devices Installed on May 1 2019
export	Network Time Zone
live	(UTC-05:00) Eastern Standard Time (uses davlight savings)
	(or o co.co) Eastern Standard Hine (ases daylight savings)
	Save
	Notwork Time Set Droject
	Current Network Time Project
	set network time Sample Project Save
	- Aviomatic Download
	VEnable automatic Download
	Download at a scheduled interval Download at specified Times
	Start Time: Times: Enter a time
	Download even 45 minutes
	Save Cancel

Automatic Download: Download at Scheduled Intervals

4a. To set the automatic download to occur at scheduled intervals, click the "Download at a scheduled interval" button, then enter a Start Time and an interval in minutes (An interval in minutes is required, a Start Time is optional. Start Times must be entered in 24-hour hour format, e.g., 3:30 PM becomes 15:30)

─ Automatic Download	
Ownload at a scheduled interval	Download at specified Times
Start Time: 15:30 Download every 15 minutes	Times: Enter a time to add:
Save Cancel	

Automatic Download: Download at Specific Times

- Automatic Download
Enable automatic Download
Download at a scheduled interval Ownload at specified Times
Start Time: 15:30 Download every 15 Times: Download every 15 Times: Data 15:30 15:30 Save Cancel Times: Enter a time to add: 15:30

5. When finished, click "Save"

Manual Download

1. Select a project by clicking on the project name

projects	name	description	created	delete
add project	Sample Project	NH Tunnel Site	Thu Sep 20 2018	Х
	Project 1	Strain Gauges	Tue Aug 13 2019	Х

2. Click the 🛃 icon to download all new data from the Network (Note: Only one Network can be downloaded at a time)

projects	_ GeoNet Networks —							
Sample Project list	name	settings	download	supervisor serial number	address	scan rate	download ra	te delete
add network add lc2	Sample Network	٢		1537815	COM9	10 min.	45 min.	Х
transfer project settings	LC2 Data Loggers -							
project comingo	name	settin	gs downlo	ad serial num	ber addre	scan i	rate type	delete
	Sample LC2	۲	₹	1742325	COM	4 60 sec	c. single	X

Sensors





- Sensors created in Agent import data collected by Nodes and the Supervisor
- Data imported by Sensors can be displayed on charts
- Sensors must be added to a device before they can be added to a chart

Adding Sensors to a Device

- 1. Select a project, a Network, and then the device the sensor will be added to
- 2. Click "node settings"
- 3. Select a Sensor to add (The available sensors will vary depending on the device type)

projects	- Node				
Sample Project	Name	Serial Number	Туре		
Sample Network	Sample Node	1537823	8800-XX-01C	•	
Sample Node	Save				
view charts					
chart settings					
summary	- Sensors				
node settings 🧹 🗖	Add reading sensor				
sensor summary	Add thermistor sensor				
	Add hode sensors				

Adding Sensors to a Device (Continued)

Sensor types are as follows:

- Reading Sensor (e.g., vibrating wire gauge)
- ► Thermistor Sensor (e.g., temperature sensor)
- String of MEMS Sensors (e.g., MEMS inclinometer system)
- Two Axis Tilt Meter (e.g., GeoNet biaxial tiltmeter Node)
- Node Sensors (factory installed sensors contained within the device, including: Battery, Aux Battery, Node Temperature, and Signal Strength)

Adding Sensors to a Device (Continued)

 Select which Sensors to add, edit the Sensor options if desired, and then click "Save" (Sensor options vary based on sensor type. For ease of demonstration, Node sensors are used in this example)



Adding Sensors to a Device (Continued)

 Sensors that have been added to the device will be shown in the node settings screen (Sensor setting can be edited at any time by clicking on the name of the sensor)

projects Sample Project Sample Network Sample Node view charts	Node Name Sample Node Save	Serial Num 1537823	ber Ty E	pe 3800-XX-01C •	
chart settings summary node settings sensor summary	Add reading sensor Add thermistor sensor Add node sensors				
	Name	Туре	Alerts	Additional Information	
	Node Temperature	NodeTemp	None	Start date: 2016-08-22. End date: None	remove
	Sample Reading Sensor	Reading_1	None	Start date: 2016-08-22. End date: None	remove
	Sample Therm Sensor	Therm_1	None	Start date: 2016-08-22. End date: None	remove

Charts

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Charts

- Charts display data imported by sensors as a graph
- Sensors must be added to a chart before it will display any data
- If automatic download is enabled, new data will be added to charts automatically each time data is downloaded from the Network
- If automatic download is disabled, charts will not update until a manual download is performed

Creating Charts

- 1. Select a project, a Network, and then the device to which the chart will be added
- 2. Click "chart settings" then "add chart"



Creating Charts (Continued)

3. Give the chart a name, and then click "Ok"



4. Charts that have been added to a device will be shown in the "chart settings" screen



Adding Sensors to Charts

1. Click on a chart name, and then click "add sensor"



 Select a sensor to add, and then click "Ok" (Only sensors that were previously added to the device will be shown)



Adding Sensors to Charts (Continued)

3. Sensors that have been added to a chart will be shown below the chart name



Viewing Charts

1. Click "view charts" to display all charts associated with the device



For more information...

 Consult the <u>GeoNet</u> and <u>Agent</u> instruction manuals, which can be accessed at any time by clicking on the question mark at the top of the screen

AGENT»		
projects Sample Project	Show tooltips on charts	*
Sample Network	Sample Chart	=

- Instruction manuals are available for download at: <u>www.geokon.com/Manuals</u>
- Please visit <u>www.geokon.com/Videos</u> for more tutorials

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