

VAPIX® VERSION 3

Network Parameters

Network Parameters

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1 Overview

1.1 Description

VAPIX® is Axis' own open API (Application Programming Interface). All Axis network cameras and video encoders have an HTTP-based API. The purpose of the API is to make it easier for developers to build applications that support Axis network video products. This document describes the different network functionalities in VAPIX®.

1.2 Prerequisites

1.2.1 Identification

Property: `Properties.API.HTTP.Version=3`
Firmware: 5.00 and later.

1.3 References

All VAPIX® references are available at:

<http://www.axis.com/vapix>

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2 Parameters

2.1 Network

Network interface settings. The parameters in this group (as opposed to the subgroups of this group) are static network settings. If the `Network.BootProto=dhcp` these parameters may not be in use. Check the read-only parameters in the subgroups to retrieve actual network settings in use by the Axis product.

[Network]

Parameter	Default values	Valid values	Access control	Description
BootProto	dhcp	dhcp none	admin: read, write	Enable/disable dynamic IP address assignment to the Axis product. dhcp= Enable dynamic IP address assignment to the Axis product. none = Disable dynamic IP address assignment to the Axis product.
IPAddress	192.168.0.90	An IP address	admin: read, write	The IP Address of the Axis product on the network.
SubnetMask	255.255.255.0	An IP address	admin: read, write	The subnet mask.
Broadcast	192.168.0.255	An IP address	admin: read, write	Broadcast address. Used to send information to several recipients simultaneously.
DefaultRouter	192.168.0.1	An IP address	admin: read, write	Default router/gateway used for connecting devices attached to different networks and network segments.
HostName	axis-<serial number>	A host name	admin: read, write	The name of the Axis product on the network, usually the same as the DNSname.
DNSServer1	0.0.0.0	An IP address	admin: read, write	Primary Domain Name System server.
DNSServer2	0.0.0.0	An IP address	admin: read, write	Secondary Domain Name System server.
DomainName		A domain name	admin: read, write	The name of the domain to which the Axis product belongs.

2.2 Network.ARPPingIPAddress

Enable/disable whether it is possible to set the IP address of the Axis product with ARP/Ping.

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[Network.ARPPingIPAddress]

Parameter	Default values	Valid values	Access control	Description
Enabled	yes	yes no	admin: read, write	Enable/disable ARP/Ping IP address setting. yes = Enable ARP/Ping IP address setting. no = Disable ARP/Ping IP address setting.

2.3 Network.Bonjour

Enable/disable Bonjour and set the name to be displayed in Bonjour-clients.

[Network.Bonjour]

Parameter	Default values	Valid values	Access control	Description
Enabled	yes	yes no	admin: read write	Enable/disable Bonjour. yes = Enable Bonjour. no = Disable Bonjour.
FriendlyName	<product name> - <serial number>	A string	admin: read write	The name of the Axis product.

2.4 Network.DNSUpdate

Dynamic Updates in the Domain Name System according to RFC 2136.

[Network.DNSUpdate]

Parameter	Default values	Valid values	Access control	Description
DNSName		Fully Qualified Domain Name or host name.	admin: read, write	The name entered here will be associated with the product's IP address in the DNS server. An example of a DNS name is Axisproduct.example.com.
Enabled	no	yes no	admin: read, write	Enable/disable dynamic DNS service. yes = Enable dynamic DNS service no = Disable dynamic DNS service
TTL	30	0 . . . <2 ³² -1>	admin: read, write	This value determines how long (in seconds) the reply from the DNS server should be remembered.

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2.5 Network.eth0

Network settings of the first Ethernet interface. Use these parameters to retrieve the network settings actually in use by the Axis product.

[Network.eth0]

Parameter	Default values	Valid values	Access control	Description
Broadcast		An IP address (auto generated).	admin: read	Broadcast address. Used to disseminate information to several recipients simultaneously.
IPAddress		An IP address (auto generated).	admin: read operator: read	The IP Address (IPv4) of the Axis product on the network.
MACAddress	xx:xx:xx:xx:xx:xx ¹	A MAC address (auto generated).	admin: read operator: read	MAC address. The unique identity of the Axis product.
SubnetMask		An IP address (auto generated).	admin: read	The subnet mask.

1. The MAC address of the Axis product is unique for every single product. The MAC address is the same as the serial number, which can be found on the product's label.

2.6 Network.eth0.IPv6

Network settings of IPv6 on the first Ethernet interface. Use these parameters to retrieve the network settings actually in use by the Axis product.

[Network.eth0.IPv6]

Parameter	Default values	Valid values	Access control	Description
IPAddresses		An IP address (auto generated)	admin: read	The physical addresses of the Axis product on the network. A list of IPv6 addresses, separated by a space. This parameter is read only.

2.7 Network.Filter

IP address filtering. These parameters are used to only accept connections from certain IP addresses or networks.

[Network.Filter]

Parameter	Default values	Valid values	Access control	Description
Enabled	no	yes no	admin: read, write	Enable/disable IP address filtering. yes = Enable IP address filtering. no = Disable IP address filtering.

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2.8 Network.Filter.Input

IP addresses filtering for incoming data traffic.

[Network.Filter.Input]

Parameter	Default values	Valid values	Access control	Description
Policy	allow	allow deny	admin: read, write	Allow or deny the addresses access to the Axis product. allow = Allow addresses access to the Axis product. deny = Deny addresses access to the Axis product.
AcceptAddresses		A string (a space separated list of IP addresses and network addresses in the CIDR notation (IP address/netmask bits))	admin: read, write	Addresses allowed to pass through the filter. Example: 192.168.0/24 will add all the addresses in the range 192.168.0.0 to 192.168.0.255. If accessing the Axis product via a proxy server, the proxy server's IP address must be added to the list of allowed addresses.

2.9 Network.Filter.Log

Enable/disable logging of filtered packages.

[Network.Filter.Log]

Parameter	Default values	Valid values	Access control	Description
Enabled	no	yes no	admin: read, write	Enable/disable logging of filtered packages. yes = Enable logging of filtered packages. no = Disable logging of filtered packages.

2.10 Network.Interface.I0.dot1x

The parameters in this group enables the Axis product to access a network protected by IEEE 802.1X/EAPOL (Extensible Authentication Protocol Over Lan).

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[Network.Interface.I0.dot1x]

Parameter	Default values	Valid values	Access control	
Enabled	no	yes no	admin: read, write	<p>Enable/disable the Axis product to access a network protected by IEEE 802.1X/EAPOL (Extensible Authentication Protocol Over LAN).</p> <p>yes = Enable the Axis product to access a network protected by IEEE 802.1X/EAPOL. no = Disable the Axis product to access a network protected by IEEE 802.1X/EAPOL.</p>
EAPOLVersion	1	1 2	admin: read, write	Set the EAPOL version as used in the network switch.
Status	Stopped	Stopped Unauthorized Authorized UNKNOWN	admin: read, write	<p>Get the status of the connection to the IEEE 802.1X port.</p> <p>Stopped = The 802.1X supplicant is not running. Unauthorized = Access to the 802.1X protected network was denied. Authorized = Access to the 802.1X protected network was allowed. UNKNOWN = The state of the 802.1X supplicant is unknown.</p>

2.11 Network.Interface.I0.dot1x.EAPTLS

The parameters in this group sets the identity and password to access to a network protected by IEEE 802.1X/EAPOL (Extensible Authentication Protocol Over Lan).

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[Network.Interface.IO.dot1x.EAPTLS]

Parameters	Default values	Valid values	Access control	Description
Identity		A string	admin: read, write	Set the user identity associated with the certificate. A maximum of 16 characters can be used.
PrivateKeyPass-word		A string	admin: read, write	Set the password for your user identity. A maximum of 16 characters can be used.

2.12 Network.IPv6

Network interface settings for IPv6. The parameters in this group are static network settings. If `AcceptRA=yes` and/or `DHCPv6` is used it will probably result in additional configuration. Check the read-only parameters in the other subgroups to retrieve actual network settings in use by the operation system.

[Network.IPv6]

Parameter	Default values	Valid values	Access control	Description
Enabled	yes	yes no	admin: read, write operator: read viewer: read	Enable/disable IPv6 in the Axis product. yes = Enable IPv6 in the Axis product. no = Disable IPv6 in the Axis product.
AcceptRA	yes	yes no	admin: read, write	Enable/disable IPv6 to accept router advertisements. yes = Enable IPv6 to accept router advertisements. no = Disable IPv6 to accept router advertisements.
DHCPv6	auto	auto stateful stateless off	admin: read, write	Setting for support of DHCPv6. auto = Enable DHCPv6 according to the router advertisements. stateful = Enable DHCPv6 to set IPv6 configuration as well as DNS servers etc. stateless = Enable DHCPv6 only to set DNS servers etc. off = Disable DHCPv6

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[Network.IPv6] (Continued)

IPAddress		One or more IPv6 addresses	admin: read, write	A list of manually configured IPv6 addresses, separated by a space. (If no prefix length is included in an IPv6 address, the default value 64 is used)
DefaultRouter		An IPv6 address	admin: read, write	A manually configured IPv6 address of a default router.

2.13 Network.QoS.Class1

Quality of Service classification. These parameters holds the DSCP value common for the members of a QoS class.

[Network.QoS.Class1]

Parameter	Default values	Valid values	Access control	Description
Desc	Description string	A string	admin: read, write	The description of the QoS class.
DSCP	0	0 ... 63	admin: read, write	The Differentiated Services Codepoint value for the QoS class.

2.14 Network.QoS.Class2

Quality of Service classification. These parameters holds the DSCP value common for the members of a QoS class.

[Network.QoS.Class2]

Parameter	Default values	Valid values	Access control	Description
Desc	Description string	A string	admin: read, write	The description of the QoS class.
DSCP	0	0 ... 63	admin: read, write	The Differentiated Services Codepoint value for the QoS class.

2.15 Network.QoS.Class3

Quality of Service classification. These parameters holds the DSCP value common for the members of a QoS class.

[Network.QoS.Class3]

Parameter	Default values	Valid values	Access control	Description
Desc	Description string	A string	admin: read, write	The description of the QoS class.
DSCP	0	0 ... 63	admin: read, write	The Differentiated Services Codepoint value for the QoS class.

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2.16 Network.QoS.Class4

Quality of Service classification. These parameters holds the DSCP value common for the members of a QoS class.

[Network.QoS.Class4]

Parameter	Default values	Valid values	Access control	Description
Desc	Description string	A string	admin: read, write	The description of the QoS class.
DSCP	0	0 ... 63	admin: read, write	The Differentiated Services Codepoint value for the QoS class.

2.17 Network.Resolver

Enable/disable retrieval of Domain Name System (DNS) settings from DHCP server. The actual DNS settings in use by the Axis product are located in this group.

[Network.Resolver]

Parameter	Default values	Valid values	Access control	Description
NameServerList		Auto generated ¹	admin: read	A list of IP addresses (both IPv4 and IPv6), separated by a space.
ObtainFromDHCP	Product dependent.	yes no	admin: read, write	Specifies if the DNS server should be obtained from a DHCP server.
Search		Auto generated	admin: read	Search list of hostname lookup. This parameter is read only.
NameServer1		Auto generated	admin: read	Name server IPaddress. This parameter is read only.
NameServer2		Auto generated	admin: read	Name server IPaddress. This parameter is read only.

1. Product dependent.

2.18 Network.Routing

Routing table actually in use by the Axis product.

[Network.Routing]

Parameter	Default values	Valid values	Access control	Description
DefaultRouter		A routing table (auto generated).	admin: read	The routing table.

2.19 Network.Routing.IPv6

Routing table for IPv6 actually in use by the Axis product.

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[Network.Routing.IPv6]

Parameter	Default values	Valid values	Access control	Description
DefaultRouter		Auto generated	admin: read	A list of default routers for IPv6. This parameter is read only.

2.20 Network.RTP

Parameters related to multicast RTP.

[Network.RTP]

Parameter	Default values	Valid values	Access control	Description
NbrOfRTPGroups	Hardware dependent	1 ...	admin: read operator: read viewer: read	The number of RTP groups. One group for each possible multicast presentation (video source).
StartPort	50000	1024 ... 65532	admin: read, write	The RTP port range defines the range of ports from which the video/audio ports are automatically selected. This feature is useful if the product is connected to a NAT router with manually configured port mapping. Each RTP session needs 4 ports, which means 4 ports for each unicast session (audio and video) or 4 ports for the multicast session in total.
EndPort	50999	1025 ... 65535	admin: read, write	The RTP port range defines the range of ports from which the video/audio ports are automatically selected. This feature is useful if the product is connected to a NAT router with manually configured port mapping. Each RTP session needs 4 ports, which means 4 ports for each unicast session (audio and video) or 4 ports for the multicast session in total.

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[Network.RTP] (Continued)

VideoDSCP	0	0 ... 63	admin: read, write	The Differentiated Services Codepoint for video QoS.
AudioDSCP	0	0 ... 63	admin: read, write	The Differentiated Services Codepoint for audio QoS.

2.21 Network.RTP.R#

Parameters related to multicast RTP. One group for each possible multicast presentation (for example video source).

[Network.RTP.R#]

Parameter	Default values	Valid values	Access control	Description
VideoAddress	Auto generated	A multicast IP address.	admin: read, write	The multicast IP address to which the multicast RTP video stream is transmitted. The default value is auto generated based on the serial number of the product.
VideoPort	0	0, 1024 ... 65535	admin: read, write	The port number for the RTP video stream. 0 = The port number is dynamically assigned.
AudioAddress	Auto generated.	A multicast IP address.	admin: read, write	The IP address to which the multicast RTP audio stream is transmitted. The default value is generated based on the serial number of the product. The parameter is read only in products without audio support. 0.0.0.0 = The audio stream is disabled.
AudioPort	0	0, 1024 ... 65535	admin: read, write	The port number for the RTP audio stream. The parameter is read only in products without audio support. 0 = The port number is dynamically assigned.
TTL	5	1 ...	admin: read, write	The Time To Live for each UDP packet. This indicates the number of routers/switches that

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[Network.RTP.R#] (Continued)

				the packet may traverse before being discarded.
--	--	--	--	---

Note

The # is replaced with a group number starting from zero, e.g. Network.RTP.R0.

2.22 Network.RTSP

Parameters needed by the RTSP daemon.

[Network.RTSP]

Parameter	Default value	Valid values	Access control	Description
Enabled	yes	yes no	admin: read, write	Enable/disable RTSP support. If disabled, only multicast RTP is available for MPEG4/h.264 delivery. yes = Enable RTSP support. no = Disable RTSP support.
Port	554	554, 1024 ... 65535	admin: read, write operator: read viewer: read	The port number for the RTSP daemon.
Timeout	60	0 ...	admin: read, write	The keep-alive timeout for the RTSP session specified in seconds. 0 = Disable the keep-alive timeout.
ProtViewer	password	password anonymous	admin: read, write	Viewer access type. password = Password protected access. anonymous = Anonymous access.
AuthenticateOverHTTP	no	yes no	admin: read, write	Configure whether RTSP requests sent over HTTP need to be authenticated. yes = RTSP requests sent over HTTP need to be authenticated.

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[Network.RTSP] (Continued)

				no = RTSP requests sent over HTTP do not need to be authenticated.
AllowClientTransportSettings	no	yes no	admin: read, write	Configure whether RTSP transport settings such as a multicast address and a port range should be allowed to be configured by client. yes = RTSP transport settings are allowed to be configured by client. no = RTSP transport settings are not allowed to be configured by client.

2.23 Network.UPnP

Enable/disable Universal Plug and Play and set the name to be displayed in UPnP-clients.

[Network.UPnP]

Parameter	Default values	Valid values	Access control	Description
Enabled	yes	yes no	admin: read, write	Enables Universal Plug and Play. yes = Enable Universal Plug and Play. no = Disable Universal Plug and Play.
FriendlyName	<product name - <serial number>	A string	admin: read, write	The UPnP display name.

2.24 Network.UPnP.NATTraversal

These parameters control NAT traversal functionality. To make the task of port forwarding easier, Axis offers the NAT traversal functionality in many of its network video products. NAT traversal is a technique that can be used to open up routers and firewalls to make devices on a LAN accessible from the Internet.

[Network.UPnP.NATTraversal]

Parameter	Default value	Valid values	Access control	Description
Enabled	no	yes no	admin: read, write	Enables/disables NAT traversal. yes = Enable NAT traversal. no = Disable NAT traversal.

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[Network.UPnP.NATTraversal] (Continued)

Router		An IP address	admin: read, write	If an IP address is entered NAT traversal will be attempted with that router. If none is entered, the server will automatically try to discover a router.
ExternalIPAddress		An IP address	admin: read	The external IP address of the NAT router. This value shall not be configured. It is set by the system itself.
Active	no	yes no	admin: read, write	This parameter is set to yes if NAT traversal was successful. This value shall not be configured, it is set by the system itself. yes = NAT traversal was successful no = NAT traversal was not successful
MinPort	32768	1 ... 65535	admin: read, write	The first time NAT traversal is enabled, a random port between MinPort and MaxPort will be selected for the TCP port to map in the router. If port mapping is successful, that port will be used thereafter. The random range can be limited by setting MinPort and MaxPort.
MaxPort	65535	1 ... 65535	admin: read, write	The first time NAT traversal is enabled, a random port between MinPort and MaxPort will be selected for the TCP port to map in the router. If port mapping is successful, that port will be used thereafter. The random range can be limited by setting MinPort and MaxPort.

2.25 Network.VolatileHostName

Enable/disable retrieval of host name from DHCP-server. The host name, actually in use by the Axis product, is located in this group.

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[Network.VolatileHostName]

Parameter	Default values	Valid values	Access control	Description
ObtainFromDHCP	yes	yes no	admin: read, write	Specifies if the host name should be obtained from a DHCP server. yes = The host name is obtained from a DHCP server. no = The host name is not obtained from a DHCP server.
HostName		Auto generated	admin: read	The host name obtained from a DHCP server.

2.26 Network.ZeroConf

Enable/disable automatic configuration of link local IP address. The negotiated network settings are located in this group, and are used in parallel with the setting of the Network.eth0 group. That means that both addresses can be used simultaneously.

[Network.ZeroConf]

Parameter	Default value	Valid values	Access control	Description
Enabled	yes	yes no	admin: read, write	Enable/disable zero configuration. yes = Enable zero configuration. no = Disable zero configuration.
IPAddress		Auto generated	admin: read	The IP address.
SubnetMask		Auto generated	admin: read	The subnet mask.

2.27 SNMP

SNMP (Simple Network Management Protocol) configuration.

[SNMP]

Parameter	Default values	Valid values	Access control	Description
Enabled	no	yes no	admin: read, write	Enable/disable SNMP. yes = Enable SNMP no = Disable SNMP
InitialUserPas- swd		A string.	admin: read, write	SNMP V3 initial user password.

Network Parameters

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[SNMP] (Continued)

InitialUserPas- swdSet	no	yes no	admin: read, write	Set to yes if InitialUserPasswd is set. yes = Enable initial user password. no = Disable initial user password.
EngineBoots		0 ...	admin: read, write	Number of times SNMP has started.
V1	no	yes no	admin: read, write	Enable/disable SNMP V1. yes = Enable SNMP V1. no = Disable SNMP V1.
V2c	no	yes no	admin: read, write	Enable/disable SNMP V2c. yes = Enable SNMP V2c. no = Disable SNMP V2c.
V3	no	yes no	admin: read, write	Enable/disable SNMP V3. yes = Enable SNMP V3. no = Disable SNMP V3.
V1ReadCommunity	public	A string	admin: read, write	The community name used for SNMP V1/V2c read operations.
V1WriteCommuni- ty	write	A string	admin: read, write	The community name used for SNMP V1/V2c write operations.
DSCP	0	0 ... 63	admin: read, write	The Differentiated Services Codepoint for SNMP QoS.

2.28SNMP.Trap

Traps are used by the camera to send messages to a management system for important events or status changes. These settings are used with SNMP v1/v2.

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[SNMP.Trap]

Parameter	Default value	Valid values	Access control	Description
Enabled	no	yes no	admin: read, write	Enable/disable trap reporting. yes = Enable trap reporting. No = Disable trap reporting.

2.29 SNMP.Trap.T#

This parameter group contains a parameter for trap messages.

[SNMP.Trap.T#]

Parameter	Default values	Valid values	Access control	Description
Address		An IP address.	admin: read, write	Set the IP address of the management server.
Community		A string.	admin: read, write	Set community to use when sending a trap message to the management system. An SNMP community is the group of devices and management station running SNMP. Community names are used to identify groups.

2.30 SNMP.Trap.T#.AuthFail

This parameter group contains a parameter for trap message when authentication attempt fails.

[SNMP.Trap.T#.AuthFail]

Parameter	Default values	Valid values	Access control	Description
Enabled	no	yes no	admin: read, write	Enable/disable trap message when an authentication attempt fails. yes = Enable trap message when an authentication attempt fails. No = Disable trap message when an authentication attempt fails

2.31 SNMP.Trap.T#.Coldstart

This parameter group contains a parameter for trap message when authentication attempt fails.

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[SNMP.Trap.T#.Coldstart]

Parameter	Default values	Valid values	Access control	Description
Enabled	no	yes no	admin: read, write	Enable/disable trap message when an authentication attempt fails. yes = Enable trap message when an authentication attempt fails. no = Disable trap message when an authentication attempt fails.

2.32 SNMP.Trap.T#.LinkUp

This parameter group contains a parameter for a trap message when a link changes from down to up.

[SNMP.Trap.T#.LinkUp]

Parameter	Default values	Valid values	Access control	Description
Enabled	no	yes no	admin: read, write	Enable/disable a trap message when a link changes from down to up. yes = Enable a trap message when a link changes from down to up. no = Disable a trap message when a link changes from down to up.

2.33 SNMP.Trap.T#.WarmStart

This parameter group contains a parameter for a trap message when SNMP has started and the configure file has changed, but not the MIB (Management Information Base).

[SNMP.Trap.T#.WarmStart]

Parameter	Default values	Valid values	Access control	Description
Enabled	no	yes no	admin: read, write	Enable /disable a trap message when SNMP has started and the configure file has changed, but not the MIB (Management Information Base). yes = Enable a trap message when SNMP

Network Parameters

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[SNMP.Trap.T#.WarmStart] (Continued)

				has started and the configure file has changed, but not the MIB. no = Disable a trap message when SNMP has started and the configure file has changed, but not the MIB.
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