

# Getting Started



**Advanced Simulation Technology inc.**

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500 A Huntmar Park Drive • Herndon, Virginia 20170 U.S.A.

Tel. (703)471-2104 • Fax. (703)471-2108

[www.asti-usa.com](http://www.asti-usa.com)

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Use this guide to learn about:

- Voisus Network Configurations (chapter 1)
- Voisus Server Installation (chapter 2)
- Voisus Web Interface (chapter 3)

Once system setup is complete and you have accessed the Voisus web interface, proceed to the Voisus Client User Guide<sup>1</sup> to learn about Scenario Management and Voisus Clients.

## 1 Voisus Network Configurations

The Voisus server uses three application network traffic links:

1. **Voisus Web Interface:** A secure web server accessed by remote computers through a web browser
2. **Voisus:** Client/Server Communications
3. **DIS\*:** Inter-server (or inter-simulator) communications

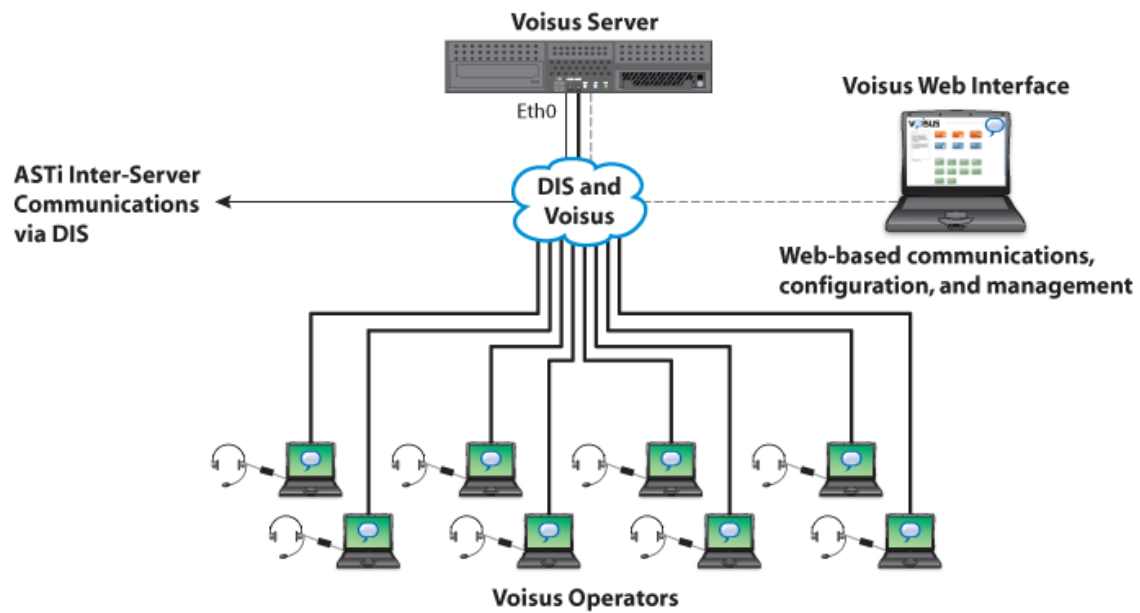
\*Distributed Interactive Simulation (DIS), IEEE-1278 standard

### 1.1 Basic Network Configuration

The illustration below shows the most basic network configuration for the Voisus system. All three application links share a common IP network. The benefit of this configuration is simplicity.

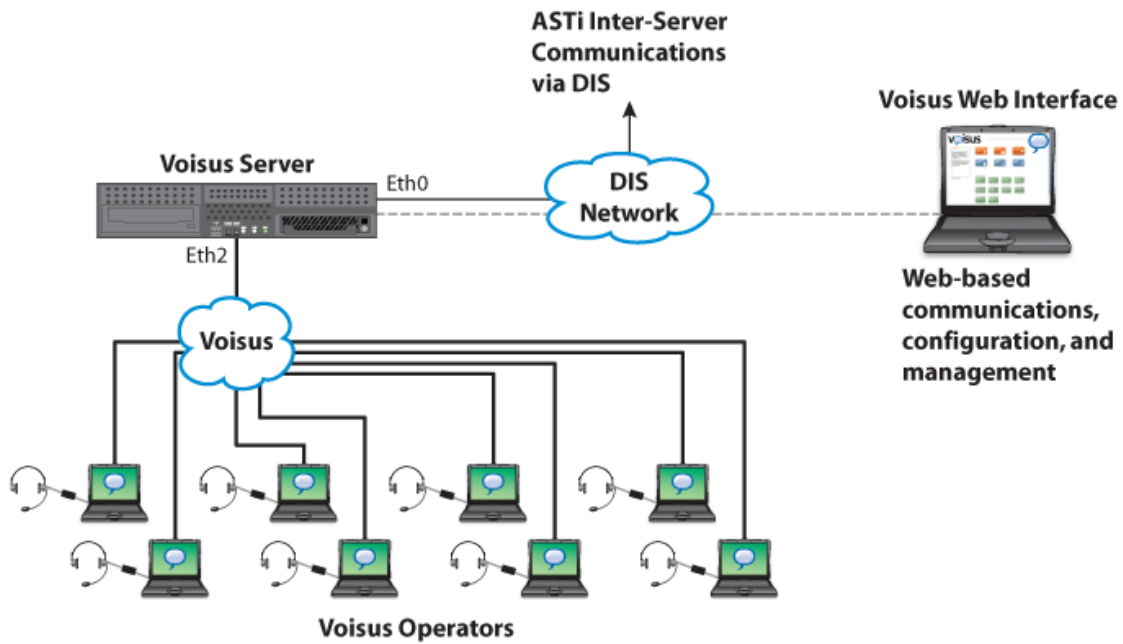
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<sup>1</sup>voisus.html



## 1.2 Separate Network Configuration

The illustration below shows a separate network configuration, with Voisus web interface and DIS application traffic on one IP network (DIS) and Voisus client/server traffic on another network. Using this configuration, traffic segregation eases congestion on each network.



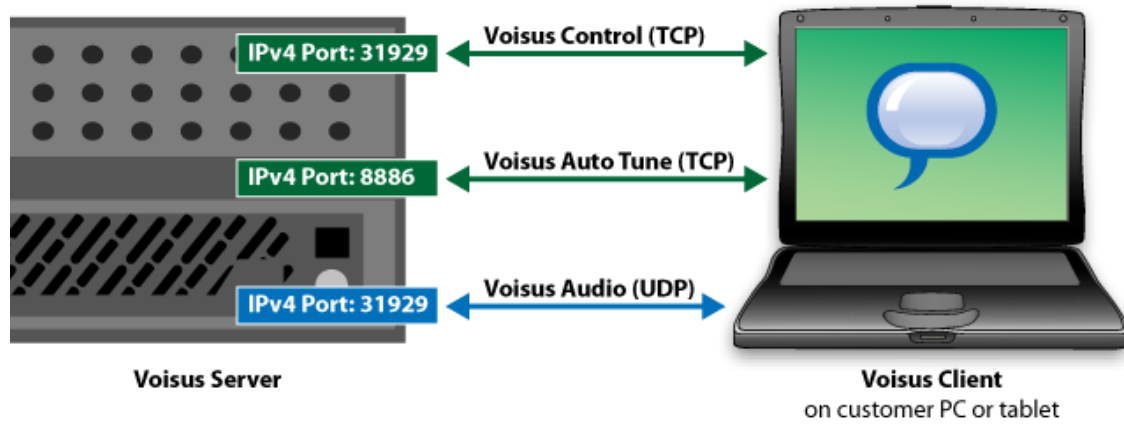
### 1.3 Client/Server Communications

The Voisus Software Client uses two main ports on the Voisus server for control (such as a PTT press) and audio (an operator speaking into the mic):

- **Control:** IPv4 TCP port 31929
- **Audio:** IPv4 UDP port 31929

Additionally, IPv4 TCP port 8886 is used for Voisus Autotune.

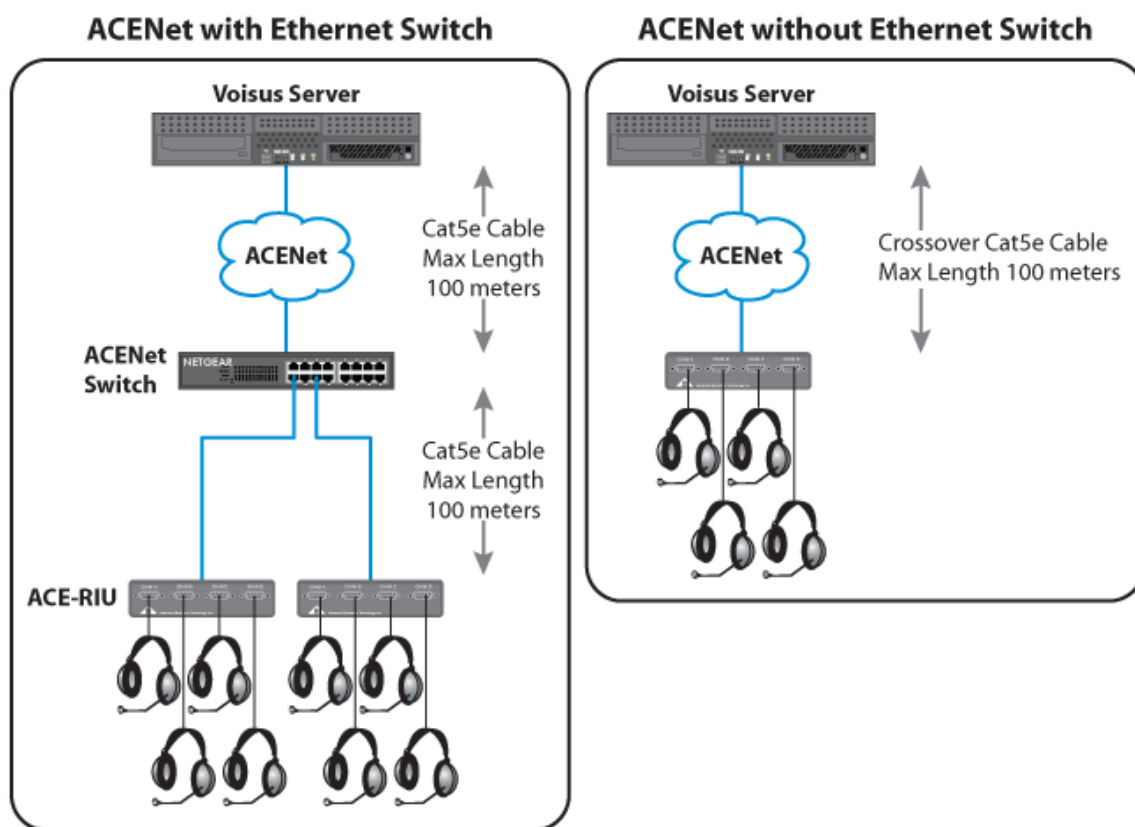
## Voisus Client/Server Communications



### 1.4 ACENet

The Audio Communications Environment Network (ACENet) is a distribution network for remote audio and I/O interface devices, supporting widely distributed and complex multi-user sound and communications applications.

These remote audio and I/O interface devices, known as ACENet devices, include ASTi's ACE-RIU and ACU2. There are two possible ACENet configurations. ACENet devices can connect directly to the the Voisus server using a crossover CAT5e cable. Alternatively, ACENet-compatible Ethernet switches can be added for greater flexibility. A maximum of 6 hops (5 switches) and 20 ACENet devices are accommodated.



### Network Requirements

ACENet requires a closed network consisting of only a Voibus server, ACE-RIUs, ACU2s, and optional ACENet-compatible Ethernet switches. No other traffic should be present on ACENet.

### ACENet Cabling Requirements

Homemade cables are the primary reason for product performance issues. ASTi highly recommends using only manufactured, commercial, premium grade cable.

- CAT5e cable or better
- 100 meters (328 feet) maximum distance per cable
- Wire according to 1000BASE-T specifications

### ACENet Switch Requirements

All ACENet-capable Ethernet switches must adhere to the following core requirements:

- **Specifications:**

- Gigabit Capable (1000 Mbps)
- OSI Layer 2
- Must be a LAN switch, not a router or hub

- **Settings:**

- Auto-negotiate speed and duplex type
- Disable all advanced Layer 2 protocols. These include, but are not limited to, 802.1p/q, spanning tree, and QoS.

## **ACENet with VLAN**

- Only port-based VLANS are compatible
- Each VLAN must not see traffic from other ports
- Each Voisus server and its associated devices must be on separate VLANs
- VLAN tagging is not supported

## **Limitations**

- ACENet audio devices do not support daisy chaining to additional units or internal switching across networks.
- Each ACENet supports one Voisus server. The Cloud /Multi-Server Configuration (section 1.5) described below is incompatible with ACENet at this time.
- Advanced protocols such as 802.1p, port priority, and spanning tree are not supported.

## **1.5 Cloud /Multi-Server Configuration**

As of Voisus software version 5.10, multiple Voisus servers can operate together as peers. These groups of peers are called clouds and are identified by a common Cloud ID.

The cloud configuration provides the benefit of scalability and load-balancing for exercises with a large number of operators. Clients connect to a cloud of servers using the Cloud ID, and their load is distributed among the servers in the cloud. As more clients join the exercise, the load will rebalance as needed.

Scenario management for large, cloud-based exercises is centrally managed, as all servers in the same cloud share the same scenario resources. When servers are joined in a cloud their scenarios are merged. Changes made to a scenario on one server will be visible on all servers in the cloud. When a scenario is selected to run on one server, it will run on all servers in the cloud. A cloud can run one scenario at a time.

By default each server is in its own cloud, identified by a Cloud ID that is the same as its hostname. The default Cloud ID can be changed to join multiple servers in a cloud, as described below.



## Create a Cloud

(See Voisus Web Interface (chapter 3) below for access details.)

To join multiple servers in a cloud, simply assign each server the same Cloud ID in the Voisus web interface:

1. From the start page, navigate to Configuration > Network Setup > Settings
2. In the Cloud ID field, enter a cloud name of your choosing.
3. Save Changes.
4. Follow the system prompts to reboot your server.
5. Repeat the same steps in for each server you wish to connect to the cloud. Take care to enter the Cloud ID exactly the same for each server.

## Connect a Software Client to a Cloud

Each software client provides the option of connecting to the server via IPv4 address or Cloud ID. Enter the Cloud ID if you wish to connect the client to a cloud.

For more information about Voisus Software Clients, reference the Voisus Client User Guide<sup>2</sup>.

## Considerations

- **Disconnecting from a Cloud:**

- To disconnect a server from a cloud, change the Cloud ID in the Voisus web interface, save changes, and reboot the server.
- A disconnected server will keep all of the scenario data it gained while in the cloud. If changes are made to these scenarios while disconnected from the cloud, a conflict of data could occur when the servers are connected again. Typically, the most recent change to a scenario will prevail.

- **Networking:**

- Cloud membership is propagated via UDP multi-casting on a LAN (local area network) only. Servers separated by a WAN (wide area network) will not be able to join the same cloud.

- **Scenarios of the same name:**

- If two servers join a cloud, and each server brings in a scenario of the same name, both identically-named scenarios will coexist in the cloud. This is possible because the scenario IDs of the separately-created scenarios are unique, but may cause some confusion to the user.

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<sup>2</sup>voisus.html

## 2 Voisus Server Installation

The Voisus server and software are hosted on an off-the-shelf chassis. Each new Voisus system is shipped with the software already installed.

### 2.1 Network Ports

Table 1: Ethernet Port Connections

Port	Connection
Eth0	DIS (Inter-Server Comms); Voisus (Server-Client computer comms)
Eth1	ACENet audio distribution Network
Eth2	Voisus (Server-Client computer comms in the separate network configuration)

See chassis labels for ethernet assignment.

### 2.2 Server Installation

In addition to the server chassis, you will need the following:

- Monitor
- Keyboard
- Power cord
- CAT5 or CAT6 cable
- Network connection

To install the server:

1. Connect the server to a monitor and keyboard. These are only necessary for initial software configuration.
2. Connect the server's Ethernet interface(s) to the DIS network, linking to other servers. See Voisus Network Configurations (chapter 1) for guidance.
3. Connect the server to a power source.
4. Log in with the following:

**Username:** root

**Password:** abcd1234

Each Voisus server also comes configured with an administrative account that may be used for non-root configuration:

Username: `astiadmin`

Password: `admin`

Do not delete or rename the administrative account as the server uses it for proper functionality.

## 2.3 Assign an IP Address

1. The server will not have an IP address without a DHCP network connection. To set an IP address, type:

```
ace-net-config -a xxx.xxx.xxx.xxx -n yyy.yyy.yyy.yyy
```

where `xxx.xxx.xxx.xxx` is the IP address and `yyy.yyy.yyy.yyy` is the subnet mask.

This sets the IP address and netmask for **Eth0**, which is used to access the Voisus web interface.

2. *Optional:* For more network setup options, type:

```
ace-net-config -h
```

3. To activate the changes, reboot the server by typing:

```
reboot
```

Once you have configured Eth0, use the Voisus web interface to make additional changes to the network settings.

## 3 Voisus Web Interface

The Voisus web interface is used to centrally configure and manage training scenarios using the Voisus server system. The web interface is remotely accessed by any PC on the same network as the Voisus server.

The Voisus web interface is compatible with the following web browsers. Other browsers may function in limited or unexpected ways and are not recommended.

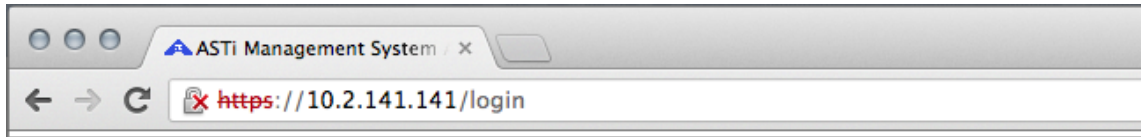
Table 2: Compatible Browsers

Browser	Version
Google Chrome	15+ (newest available is recommended)
Safari	5+
Firefox	10+
Internet Explorer	9+

### 3.1 Access the Web Interface

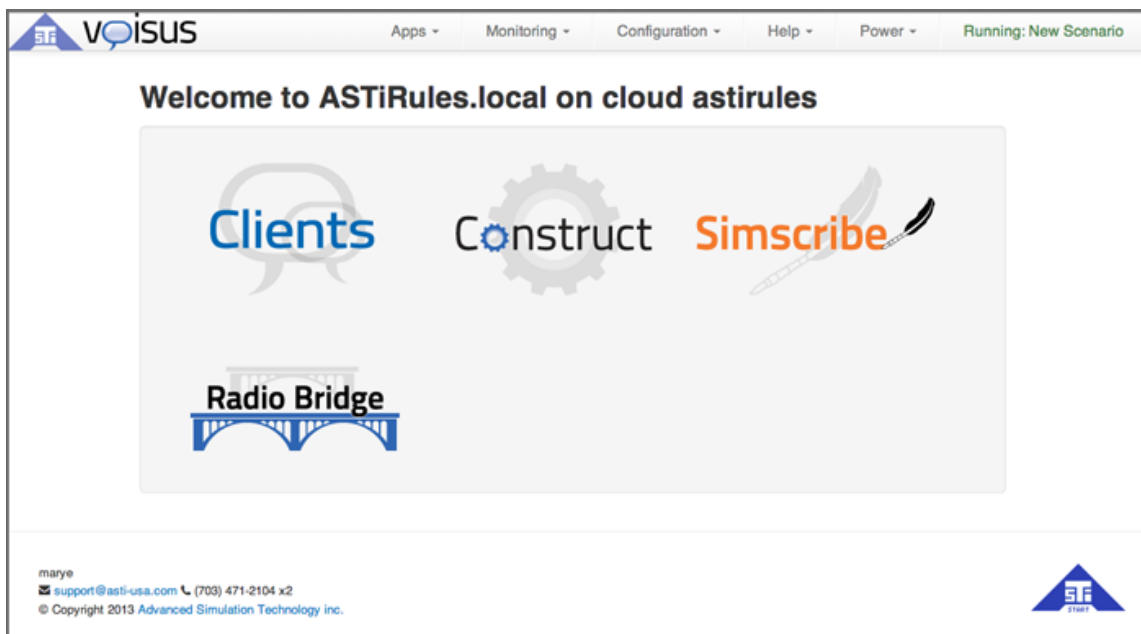
1. Start a web browser on a PC sharing the same network as the server.
2. In the browser's address field, enter the server's Eth0 IP address.

`http://xxx.xxx.xxx.xxx/`



3. Log in with:  
**Username:** admin  
**Password:** astirules

The start page provides access to the Voisus Apps as well as drop-down menus for system administration.



### 3.2 Network Settings

Using the dropdown menus on the start page, navigate to Configuration > Network Setup.

## Status

The Status tab will display the settings currently in use on your server. Select each Ethernet port to view individual settings and status.

### Network Configuration

Status **Settings**

The settings shown here are those which are currently in use by the system, and may not reflect settings saved inside the various system configuration files.

#### General Networking

Cloud ID:	vs_sales
Hostname:	vs-sales.local
Domain:	asti-usa.com
Gateway IP:	10.2.0.254
Default Interface:	eth0
Nameservers:	10.1.1.1 10.2.1.1
NTP servers:	0.rhel.pool.ntp.org 1.rhel.pool.ntp.org 2.rhel.pool.ntp.org

#### Network Devices

Click a device name to view its settings.

- eth0**
- eth1
- eth2
- eth3

Device:	eth0
Status:	<span style="color: green;">↑ Up</span>
MAC Address:	00:07:b8:dd:02:9b
Mode:	Fixed
IPv4 Address:	10.2.141.141
Subnet Mask:	255.255.0.0
Broadcast Address:	10.2.255.255
IPv6 Address:	fe80::207:b8ff:fedd:29b

## Settings

Click the Settings tab to change network settings. Select each Ethernet port to view and change individual settings. When you are finished making changes, click Save Changes and reboot as prompted.

## Network Configuration

Status Settings

The settings shown here are saved inside various system configuration files, and may not reflect the current operational state of the system. Some settings may be overridden.

### General Networking

Cloud ID:

Hostname:

Domain:

Gateway IP:

Default Interface:

Nameservers:  
Up to 3

NTP Servers:  
Up to 3

### Network Devices

Click a device name to view its settings.

eth0

eth1

eth2

eth3

Device: eth0

Status: ↑ Up

MAC Address: 00:07:b8:dd:02:9b

Mode:

IPv4 Address:

Subnet Mask:

**Pending Changes**

- **Cloud ID:** By default, the cloud ID will match the hostname. To create a cloud with other servers, simply type the same cloud ID name in the Cloud ID field for each server. Save changes and reboot when prompted. The servers will then be connected in the same cloud and share Scenario data. For more information about clouds, see Cloud /Multi-Server Configuration (section 1.5) above.
- **Hostname:** Change the hostname if desired. This name will be used to identify your server on the network. When the hostname is changed, the Cloud ID will change to match it. Save changes and reboot when prompted.
- **Domain:** Enter the domain for this server. This is also used to perform name-lookups for other servers on the network.
- **Gateway IP:** This is the IPv4 address of another server that routes traffic for the network. This setting overrides the Default Interface setting below.
- **Default Interface:** If a Gateway IP address was provided in the previous field, this field will be deactivated. If no Gateway IP address is provided, select a network interface the server can use to send network traffic.

- **Nameservers:** A list of servers on the network to query when attempting to match hostnames to IP addresses.
- **NTP Servers:** A list of servers on the network used to synchronize the system clock.
- **Mode:** Select the mode of operation for this Ethernet device.
  - “Off” disables the Ethernet interface.
  - “DHCP” will request IPv4 and Subnet Mask information from another server on your network.
  - “Fixed” mode will require you to enter an IPv4 address and Subnet Mask.
- **IPv4 Address:** Specify the IPv4 address for this network interface. Contact your network administrator for help with this setting.
- **Subnet Mask:** Specify the subnet mask for this network interface. Contact your network administrator for help with this setting.

## 4 What’s Next?

Congratulations! Your Voisus server is configured and you can begin configuring scenarios for training exercises. Reference the Voisus Client User Guide<sup>3</sup> for details.

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<sup>3</sup>voisus.html