



SystemOn

Installation Guide

The installation guide for Shure SystemOn Audio Asset Management Software.
Version: 4.6 (2022-F)

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SystemOn Installation Guide

Installation Guide

Use this guide to install Shure SystemOn Audio Asset Management Software on a Windows server. After completing the installation, configure the software for your team to easily manage your audio network. See **Up and Running After Installation** for more details.

Contact the Shure Support Team

Shure System Support provides regional support teams with in-depth knowledge of Shure devices, digital audio networking, and best practices for your installation. If you encounter any issues during installation or setup of the software, contact Shure System Support for assistance. In the Americas region, you can call 312-736-6006 or visit www.shure.com to find your local support contact.

Software Releases

New versions of this software are periodically released to include new features and performance improvements. This documentation supports the latest version of the software. For more information on individual releases, see the [release notes](#) on www.shure.com.

System Requirements

Prerequisites

Supported devices

The following Shure devices are supported in SystemOn. Whenever possible, upgrade to the latest supported firmware version to take advantage of new features and system improvements.

- MXA310 Table Array Microphone
- MXA710 Linear Array Microphone
- MXA910 Ceiling Array Microphone
- MXA920 Ceiling Array Microphone
- MXW Microflex® Wireless System (**Note:** The MXWANI is not supported)
- ULX-D® Digital Wireless System
- IntelliMix™ Room Audio Processing Software
- P300 IntelliMix® Audio Conferencing Processor
- ANIUSB-MATRIX Audio Network Interface
- SCM820 Digital Intellimix® Automatic Mixer
- Microflex Networked Ceiling Loudspeaker: MXN5-C
- MXA Network Mute Button
- SBC220/240 Networked Charging Station
- SBC250/450/850 Networked Charging Station

Important: Refer to the release notes for a list of compatible firmware versions.

See *Firmware Updates* for more information on updating firmware.

View User Guides Online

View user guides and detailed information for Shure devices at pubs.shure.com

Firmware Updates

Firmware is embedded software in each component that controls functionality. Periodically, new versions of firmware are developed to incorporate additional features and enhancements. To take advantage of design improvements, new versions of the firmware can be uploaded and installed directly through SystemOn.

Important:

- SystemOn checks for new firmware updates every 24 hours as long as there is an internet connection.
 - You can turn off automatic downloads at Main menu > Settings. Devices are not automatically updated, the firmware files are only automatically downloaded to your SystemOn server.
1. SystemOn alerts you to available updates for SystemOn-supported devices at the bottom tool bar in the application.
 2. Navigate to All devices to download new firmware files and to update firmware. You can update devices that are on the same subnet and cross-subnet.

Note: You cannot use SystemOn 4.7 to update:

- MXW Microflex Wireless System
- ULX-D Digital Wireless System
- IntelliMix Room Audio Processing Software
- SCM820 Digital Intellimix Automatic Mixer
- SBC220/240 Networked Charging Station
- SBC250/450/850 Networked Charging Station

Shure Update Utility

For those devices unsupported by SystemOn, use the Shure Update Utility (SUU) to update the firmware. Download the SUU from https://www.shure.com/en-US/products/software/shure_update_utility.

Perform the following steps to update the firmware:

CAUTION! Ensure the device has a stable network connection during the update. Do not turn off the device until the update is complete.

1. Connect the device and computer to the same network (set to the same subnet).
2. Open the SUU application.
3. Click the Updates button at the top of the window to open the Download Manager.

Note: This button will be labeled either "Check for updates..." or "[#] updates available"

4. From the Download Manager, select the desired firmware versions.

Tip: The dropdown in the upper right allows you to quickly Select: All or Select: None.

Note: After updating, you may need to clear your browser's cache to display updates to the device's web application.

5. Click Download, and then Close the Download Manager. Downloaded firmware is listed and can be viewed and managed in the Firmware tab.
6. From the Update Devices tab, select the new firmware and press Send Updates to begin the firmware update, which overwrites the existing firmware on the device.

Firmware Release Requirements

The recommended best practice is that all devices are on the most current release of their respective firmware. To view the firmware version of each device on the network, navigate to All devices.

Internet Access

- During software installation (may be required for application updates)
- To send SMS text message notifications in SystemOn

Required Ports

Server Inbound Ports HTTP and Web Sockets	80 (default)
Web API MongoDB Shure System API	Three ports, dynamically allocated at install using available ports in the range of 10000-65535 A fourth port is selected by the user (default 80)

Install Windows Updates

Make sure your operating system is up-to-date before software installation.

Recommendations

Back Up the MongoDB Database	By default, your system creates daily backups of the MongoDB database. See the Backup and Restore Mongo Database for more information.
Integrate SMTP server with SystemOn	After installing the software, connect SystemOn to your SMTP server from the Integrations page. SMTP is required to recover usernames and reset passwords, including the password for the built-in admin account.

Operating System

The follow operating systems are supported on a physical or virtual machine:

- Windows Server 2019 (recommended)
- Windows 10 (Professional or Enterprise), 64-bit edition

Web Browser

The following are the minimum versions supported on browsers:

- Chrome 101
- Safari: 15.3
- Windows Edge 101

Hardware

System memory	8 GB of RAM (16 GB may be required when you are accessing hundreds of devices) Important: When using a virtual machine, ensure that you dedicate hardware resources (HD, RAM, etc.) to the SystemOn application; using shared resources may prevent Shure services from starting on reboot.
Hard-disk space	2 GB available
Processor	i5 Dual-core processor

Automatic Configuration Updates

The following settings are automatically made during software installation.

Installer Prerequisites

MongoDB v5.0.3 is automatically added during the installation process.

Windows Firewall

LocalPort	5568, 8427
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Multi-Subnet Networks

To set up Shure SystemOn to operate across subnets, follow these prerequisites:

Prerequisites

- Valid IP route to all subnets with devices
- Allow ports UDP ports 5568 and 8427
- ACN devices are routable from server default gateway

Communication Requirements

The following is required for communication between the server and Shure devices.

Network

- Unicast traffic capable
- Server machine requires IP route to all subnets with supported Shure devices

Shure Devices

ACN Multicast

- Port: 5568
- UDP Multicast
- TTL is currently 20 for Windows

Shure Supplemental Discovery

- IP address: 239.255.254.235
- Port: 8427
- UDP Multicast
- TTL is 64

Backup and Restore the Database

Protect against data loss by backing up the MongoDB database (installed with SystemOn) that stores your Shure software information. Backups are also useful when migrating to a new server.

Backups store all projects, locations, and device settings that your team makes in the software. For backup restoration, only those backup files (.bak) that match the current operating software version are supported.

Identify the MongoDB port

You must identify the dynamically allocated port for MongoDB by looking in the configuration section of:

```
"[location of SystemOn Software install directory]\Services\Mongo-5.0.3\Bin\mongod.cfg"
```

The port number is specified in the following lines:

```
"  
net:  
port: [port #]  
"
```

Backup the Mongo Database

Use the machine installed with the software to create the MongoDB backup.

1. Identify a location to archive the database backup. You use this path in the command line.
2. Begin to open a command prompt by opening the Start menu and start typing "command". Do not press Enter.
3. Right-click the command prompt item and select Run as administrator.
4. Type the following command line (including quotation marks for file paths) after replacing the placeholders marked by []:

```
"[location of SystemOn Software install directory]\Services\Mongo-5.0.3\Bin\mongodump.exe" --host localhost  
--port [MongoDB port number] --gzip --archive="[path and file name of backup]"
```

Tip: Sample command line with default settings (all on one command line):

```
"c:\Program Files\Shure\Shure Networked Systems Software\Services\Mongo-5.0.3\Bin\mongodump.exe" --host localhost
--port [MongoDB port number] --gzip --archive="c:\Shure.bak"
```

5. Press Enter. The file is archived at the path specified in the prompt.

Restore a Database Backup

1. On the machine installed with the software, open a command prompt by opening the Start menu and start typing "command". Do not press Enter.
2. Right-click the command prompt item and select Run as administrator.
3. Type the following command line (including quotation marks for file paths) after replacing the placeholders marked by []:

```
"[location of SystemOn Software install directory]\Services\Mongo-5.0.3\Bin\mongorestore.exe" --host localhost
--port [MongoDB port number] --drop --gzip --archive="[path and file name of backup]"
```

Tip: Sample command line with default settings (all on one command line):

```
"c:\Program Files\Shure\Shure Networked Systems Software\Services\Mongo-5.0.3\Bin\mongorestore.exe" --host localhost
--port [MongoDB port number] --drop --gzip --archive="c:\Shure.bak"
```

4. Press Enter.
5. Reload the database configuration by typing

```
iisreset
```

at the command prompt.

Up and Running After Installation

The following configurations are optional, but they add functionality to SystemOn and make it easier for the A/V support team to effectively manage their Shure devices. Some of these settings may require information from your network administrator.

Configuration Checklist

Have these items ready to streamline the setup process and get your team up and running in SystemOn:

1. Activation ID from your license purchase or trial. After applying your plan in the software, you'll need to assign a license to each network device to access all SystemOn features for that device.
2. Supported firmware versions on your Shure devices. See System Requirements for details.
3. A list of IP addresses for all devices on separate subnets.
4. Information to set up users and notifications:
 1. LDAP server
 2. SMTP
 3. Twilio account for SMS text messaging

Connecting to the Device Network

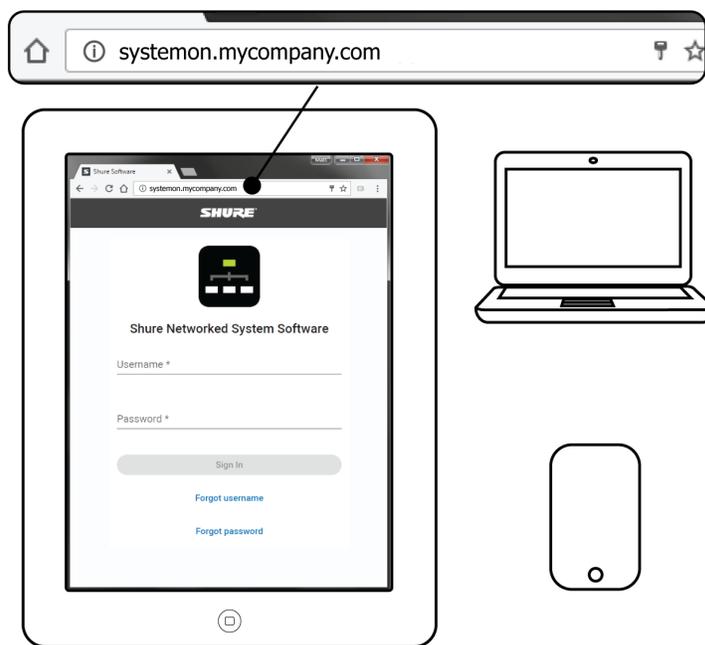
Connect the SystemOn server to your audio network by selecting the correct network interface card (NIC) at Settings > General. If more than one NIC is available on your machine, choose the card with an IP address in the same range as your devices.



Select the NIC

Setting up a URL for your Site

You can set up a base URL to access your SystemOn site from a familiar name, like <http://systemon.mycompany.com>. This is the address your team will use to access SystemOn software.



Access SystemOn using a browser

Set up a DNS alias on your DNS controller to access your SystemOn site from a canonical URL. For example, if you create a DNS alias of SystemOn, you will be able to access this software from: <http://systemon.mycompany.com> or <http://systemon>.

Import Users from your LDAP Directory

Add accounts from your user directory by integrating with your LDAP (Lightweight Directory Access Protocol) database. LDAP integration reduces set up time by importing existing users and simplifies your team's workflow by using the same sign in credentials.

1. Go to Settings > Integrations.
2. In the LDAP section, click Enable.
3. Fill out the required fields according to your LDAP server settings.
4. Select Test connection to verify the integration is successful.
5. Click Enable.

LDAP Passwords

For users imported from LDAP, passwords are maintained by the LDAP database and referenced by SystemOn during sign in. To avoid a conflict with the database, these users cannot reset their passwords through SystemOn.

Connecting to the SMTP Server

Set up automatic emails to notify your team of important updates to their devices.

1. Go to Settings > Integrations > Email.
2. Enter your SMTP server settings.
3. Test the settings to ensure that the integration is successful.

Example:

From: AV-Alerts [mailto:AV-Alerts@mycompany.com]
Sent: Friday, December 16, 2018 10:29 AM
To: AV Tech
Subject: SystemOn - Device is missing - Channel 1

Hi Tech,
Device is missing:
Channel 1 (172.17.30.11) is missing.
Last seen at 12/16/2018 10:29:19 AM

MyCompany
www.myCompany.com

Set Up SMS Text Message Notifications

Set up automatic SMS text messaging to alert your team of important updates to their devices. Shure SystemOn uses your Twilio account to facilitate the messages.

Note: An internet connection is required on the server or computer installed with SystemOn

1. Create a Twilio account at <http://www.twilio.com>. Use information from your Twilio account to integrate with SystemOn:
 - Twilio account ID
 - Twilio Token
 - The "from" phone number for the Twilio account (if set up)
2. Go to Settings > Integrations > SMS.
3. Test the settings to ensure that the integration is successful. A message is sent to the phone number entered from the Twilio account.
4. Add phone numbers for each of your team members by editing their accounts at Users.