

Lenovo™

Software



LanSchool

Pre-installation Guide

LanSchool On-Premises

Stoneware, Inc.

Product: LanSchool version 8.0.1 or newer

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INTRODUCTION

In this document, we will cover all aspects of LanSchool deployment.

This document is intended to provide information that will assist in LanSchool deployment and provide best practices. Every customer environment is different and may require additional network configuration or setup not included in this document. This guide will focus on deployment using the LanSchool Connection Service. If you have any questions, please contact your Professional Services representative or Support representative (support@lenovosoftware.com).

DEPLOYMENT OPTIONS

In this section, we will cover deployment options based on network topology.

Static Computer Labs and Media Rooms

- Use for Windows/Mac devices
- Device-centric model
- Recommended Deployment:
 - Define a unique channel for each computer lab.
 - Install the student client on each student device in the lab and assign them to that lab's unique channel.
 - Install the teacher client on a dedicated teacher device in the lab and assign it to that lab's unique channel.
- When the teacher in the lab opens the teacher console, they will automatically see the devices in that lab's channel.

Mobile Computer Carts

- Use for Windows/Mac devices
- Device-centric model
- Recommended Deployment:
 - Define a unique channel for each cart
 - Install the student client on each device in the cart and assign it to that cart's channel
 - Define a unique channel for each teacher
 - Install the teacher client on teacher devices and assign them to their unique teacher channel
- When the teacher opens the teacher console, they should NOT see any student devices
- Teacher loads a class list containing the machine names of the devices in that cart
- Teachers can create a class list by browsing for students, sorting by channel number, and selecting the devices in that channel (cart).
- Alternatively, IT could create a class list for each cart and teachers can access them via a network file share
- When class is over, the teacher dismisses the class list, setting devices back to the cart's channel

One-to-One (Student takes computer with them to different teachers)

- Use for Windows/Mac/Chromebook devices
- User-centric model
- Recommended Deployment:
 - Define a common "home" channel for all student devices
 - Install the student client on each student device (or user accounts in the case of Chromebooks)
 - Define a unique channel for each teacher
 - Install the teacher client on teacher devices and assign them to their unique teacher channel
- When the teacher opens the teacher console, they should NOT see any student devices
- Teacher loads a class list containing the user login names of the users in their class
- Class Lists can be manually created by each teacher
- Class Lists can be centrally managed by the district (dynamic class lists)
- When class is over, the teacher dismisses the class list, setting students back to their "home" channel

LANSCHOOL CONNECTION SERVICE (LCS)

In this section, we will cover the LanSchool Connection Service (LCS).

In most instances, it's highly recommended to deploy LanSchool using the LanSchool Connection Service (LCS). This will use a client-server architecture instead of a peer-2-peer architecture used with the older traditional installation. With proper hardware, the LCS can handle 10,000 concurrent connections. See below link for recommended hardware specifications. It's common to deploy multiple LCS servers in a larger environment.

LanSchool Connection Service server requirements:

- [LCS server hardware and OS requirements](#)

SYSTEM REQUIREMENTS

In this section, we will cover hardware requirements and features per OS.

LanSchool offers several classroom management capabilities, however not all features are available for all operating systems. Refer to this chart for more detail.

LanSchool Client requirements:

- <https://www.lenovosoftware.com/support/lanschool/specifications>

Feature	Windows	Mac OS	Chrome OS	Android	iOS
Voting	✓	✓	✓	✓	✓
Testing	✓	✓	✓	✓	✓
Chat	✓	✓	✓	✓	
Limit Web	✓ ¹	✓ ²	✓ ³		
Internet History	✓	✓	✓		
Blank Screen	✓	✓	✓	✓	
Collect/send files	✓	✓			
SSID White-listing	✓	✓			
Keystroke Alert	✓	✓	✓		
Battery Monitor	✓	✓	✓	✓	✓
Password Secure mode	✓	✓			
AD Secure mode	✓				
Show Teacher ability (receive)	✓	✓	✓	✓	✓
Show Teacher ability (broadcast)	✓	✓			
Show Student ability (receive)	✓	✓	✓	✓	✓
Show Student ability (broadcast)	✓	✓	✓		
Limit Applications on OS	✓	✓			
Thumbnails	✓	✓	✓	✓	✓
Student must grant permission for full screen viewing			✓	✓	
Student can stop/reconfigure LanSchool app				✓	✓
Requires LanSchool Connection Service			✓	✓	
Report Server compatible	✓	✓	✓ ⁴		

¹ Chrome, IE, Firefox

² Safari, Firefox, Chrome

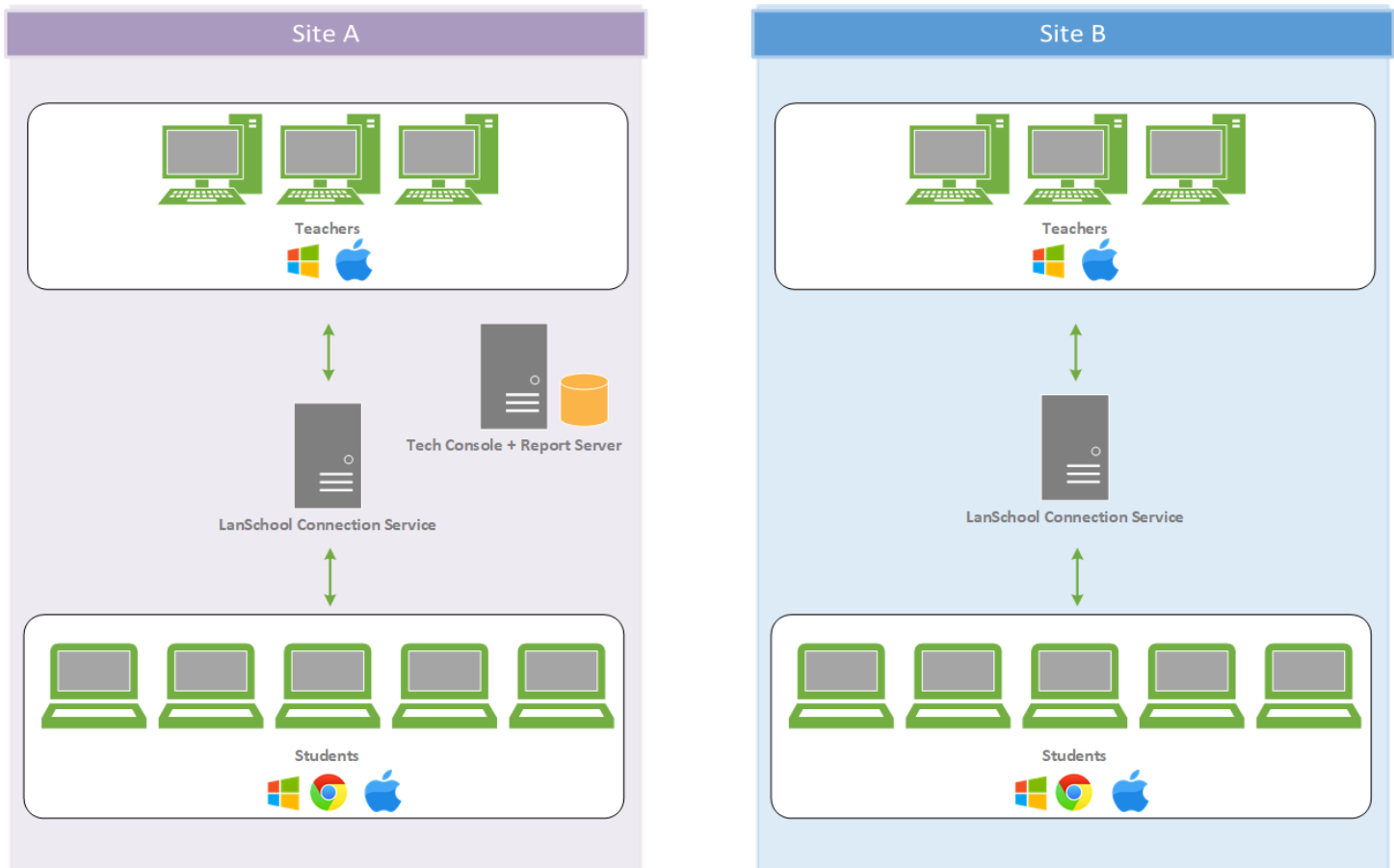
³ Chrome

⁴ Only Keystroke Alerts

ARCHITECTURE

In this section, we will show a sample architecture.

Sample Deployment Architecture

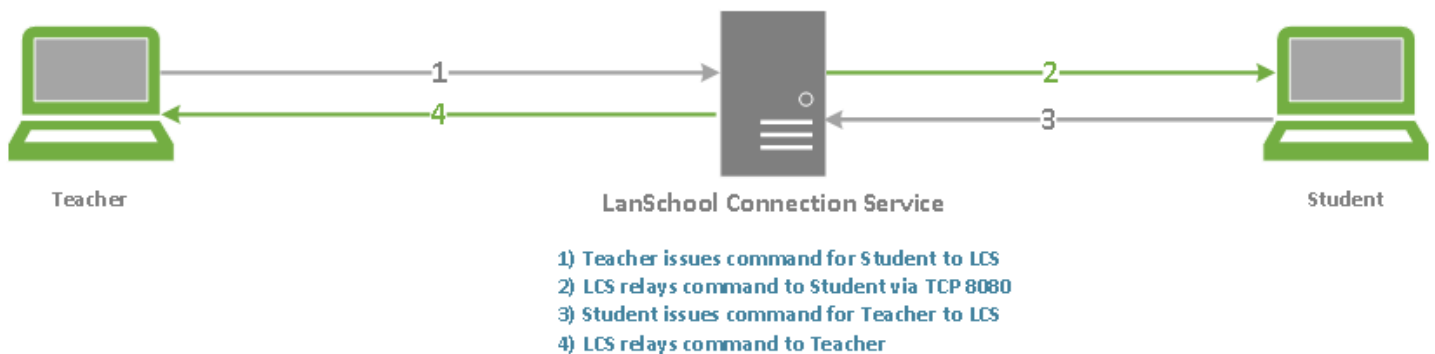
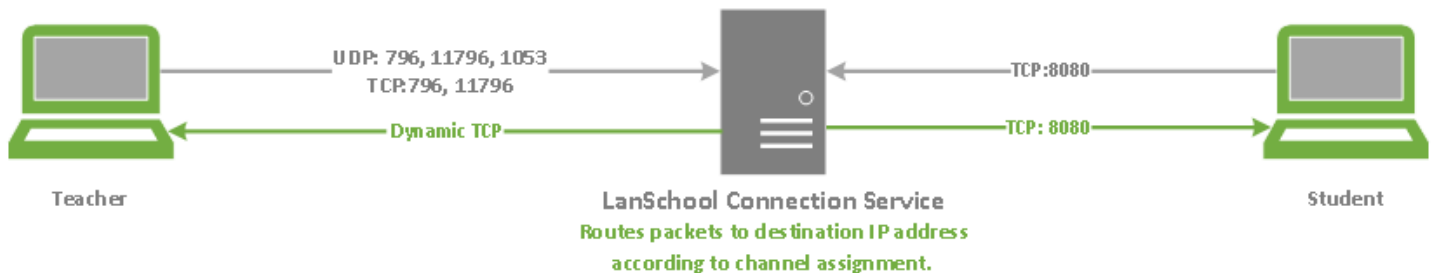


Characteristics of this deployment:

- 2 separate LCS servers to serve 10,000 concurrent connections at each site
 - Add additional LCS servers for additional sites or per 10,000 concurrent users
- Tech Console will be utilized to assist teachers and other features
 - See Tech Console section for more details
- Report Server will be utilized for reporting data such as top websites and applications
 - See Report Server section for more details

DATA FLOW

In this section, we will show the data flow.



TECH CONSOLE + REPORT SERVER

In this section, we will discuss Tech Console and Report Server.

LanSchool Tech Console allows techs to monitor security risks, keep everything up-to-date, provide support, save power and keep track of technology utilization. It give the ability to view students, install software (including upgrading LanSchool), send out messages and other features.

Tech Console details:

- Tech Console will only show students in an LCS architecture
- Recommended for 40 or less connected devices
- Recommended to specify your channel (e.g. not use channel 0)

The Report Server retains the software and hardware inventory information scanned from student machines and well as e-safety alerts. The data captured allows you to record and analyze your technology utilization with reports provided such as web site visits or application usage by student or computer

Report Server details:

- Only 1 Report Server recommended per environment
- Report Server will send a broadcast discovery packet (255.255.255.255) of its address
- Broadcast traffic must be allowed between Report Server and LCS servers
- LCS servers will relay Report Server info to Students
- Students will report back to Report Server over TCP 80

PORTS AND USAGE

In this section, we will discuss ports and their usage.

This section provides the basic port configuration information needed to install LanSchool in a production environment. If Teachers are on a different network/VLAN from the LCS, UDP packets must be able to transverse. If you choose not to utilize features, like iPad Teacher's assistant, it can be safely ignored.

LanSchool Connection Service information:

Sender	Receiver	Port#	Protocol	Purpose
Student	LCS	8080	TCP	Student connect to LCS
Teacher	LCS	796	TCP	Teacher issues command to LCS
Teacher	LCS	796	UDP	Teacher issues command to LCS
Teacher	LCS	11796	TCP	Teacher issues command to LCS
Teacher	LCS	11796	UDP	Teacher issues command to LCS
Teacher	LCS	1053	UDP	Teacher sends status update to LCS
LCS	Student	9	UDP	Wake-On LAN
LCS	Student	8080	TCP	LCS relays Teacher command
LCS	Teacher	Dynamic	TCP	LCS relays Student command
iPad	Teacher	2426	UDP	Discovery packet of assistant app
Report Server	LCS	796	UDP	Discovery packet of Report Server
LCS	Student	Dynamic	UDP	Relay Report Server info
Student	Report Server	80	TCP	Students sends info to Report Server

UDP:

- Discovery, Blank Screen, Show Teacher, Show Student, Limit Web, Limit Apps, Mute, Limit Drives, Limit Print, Co-Browse

TCP:

- Thumbnails, Remote Control, File Transfer, Chat, Message, Power, Run, Clear Desktop, Testing, Vote, Snapshot, Student Details (current app, URL, etc.)

TEACHER INSTALLATION

In this section, we will discuss installing LanSchool Teacher.

Windows Installation Links:

- [Mass deployment via MSI](#)
- [Information about Group Policy features](#)

Class Lists:

- Dynamic Class lists recommended
- [Dynamic Class List Implementation Guide](#)
- Export information from SIS in CSV files
- Place CSV files on file share (or webserver) that Teachers can access
- Teachers will manually select path or you can pre-populate file path
 - Pre-population will require an update to the associated registry entry
 - HKLM\Software\Wow6432Node\LanSchool\DynamicClassListCSVFolder

Teacher Channel Assignment:

- Determine method for assigning channels to teachers (room#, SIS ID, phone extension)
- Set default channel during installation (e.g. 10)
- Run login script to update registry for teacher channel (HKLM\SOFTWARE\WOW6432Node\LanSchool)
 - Teacher channel limit is 16000
- Alternately, you can Enable Channel Select for Teachers to let them choose their own channel

STUDENT INSTALLATION

In this section, we will discuss installing LanSchool Student.

Windows Installation Links:

- [Mass deployment via MSI](#)
- [Information about Group Policy features](#)

Chromebook Installation Links:

- [Deploying LanSchool for Chromebooks with Google Admin](#)
- [Chromebook configuration tool](#)