NexGen

S&G Communications

NexGen Services
Jack Bush, President
17W715 Butterfield Road, Suite D
Oakbrook Terrace, IL 60181
847-459-1220
jbush@sandgcom.com
www.nex-gen-services.com

SD-WAN for Schools

The Next Evolution of Networking is Eligible for E-Rate

Do Your Students and Teachers Need a Network that is Always Up?

Today, much of the lesson plan uses online content. Disruption on your link to that content, or even just congestion on the network, can disrupt the learning process. Let us show you the state of the art approach to an "Always Up" network for your schools that USAC has approved for E-Rate funding.
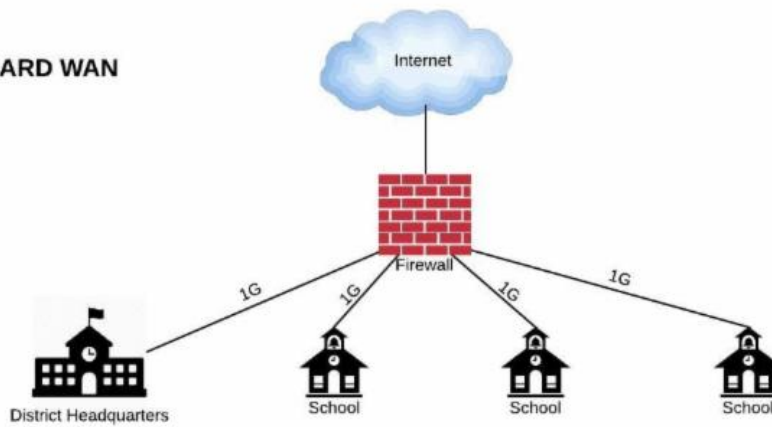
What is SD-WAN?

SD-WAN (Software Defined Wide Area Network) is a new internet and multi-site networking service which typically utilizes circuits from two carriers, a telco like AT&T, and a cable company like Comcast, though it can also use fixed or 4G wireless. It will aggregate the bandwidth, provide failover if one of the circuits experiences a disruption, and can route high priority applications over both circuits for improved throughput. The primary benefit of SD-WAN is the use of dual carriers so if one has a problem, the other is still working - Always Up. The lesson plan doesn't go out the window.

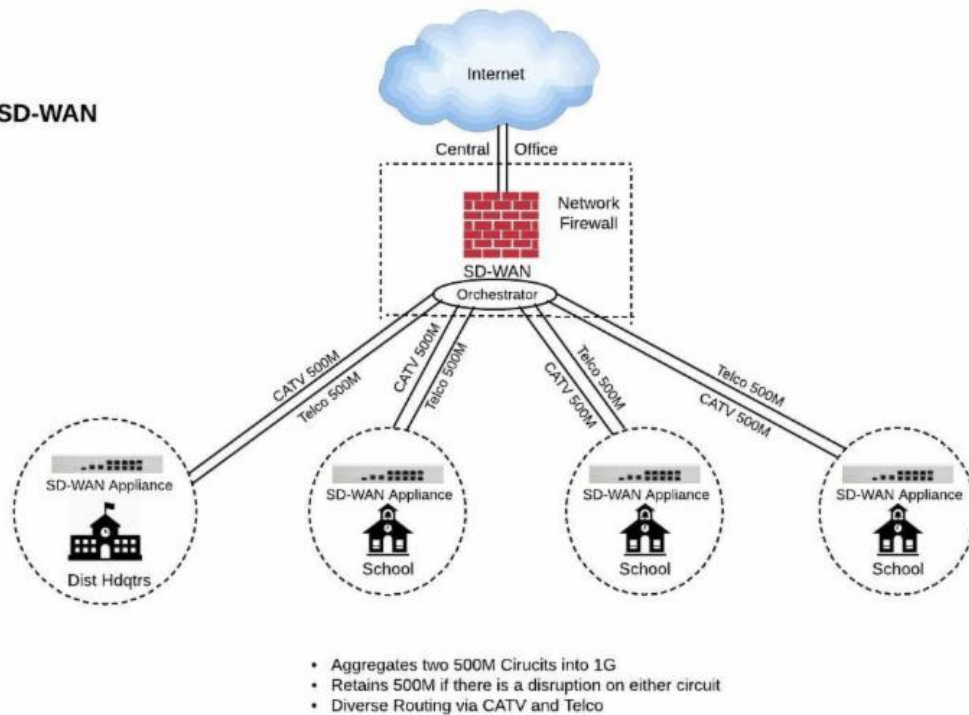### Solving Traditional School Network Problems with SD-WAN

Instead of a single circuit to each school at 500 Meg for example, SD-WAN utilizes 2 circuits at 250 Meg each. An SD-WAN appliance at each site works with an SD-WAN orchestrator in the provider's central office managing both circuits. The bandwidth is aggregated so that you still have 500 Meg, but you also have a guarantee of 250 Meg should one of the circuits get disrupted. Utilizing both telco and cable usually means fully diverse routing of the circuits for added protection against disruption. Our preferred provider already uses both AT&T and Comcast as their last mile provider, so they have the network integration and management processes already in place to use both carriers successfully, making them an ideal choice for SD-WAN.

Following is a sketch of SD-WAN for schools which includes a network-based firewall, an excellent fit with SD-WAN providing state of the art networking. The benefit of the network firewall is that each school can have direct access to the educational content because it eliminates the choke point and single point of failure of a premises firewall. And it is more economical than adding more bandwidth at the district HQ. For more information on network-based firewall for schools, click here .

STANDARD WAN

Internet

Firewall

1G — District Headquarters
1G — School
1G — School
1G — School

SD-WAN

Internet

Central | Office

Network Firewall

SD-WAN Orchestrator

CATV 500M
Telco 500M
CATV 500M
Telco 500M
Telco 500M
CATV 500M
Telco 500M
CATV 500M

SD-WAN Appliance — Dist Hdqtrs
SD-WAN Appliance — School
SD-WAN Appliance — School
SD-WAN Appliance — School

- Aggregates two 500M Cirucits into 1G
- Retains 500M if there is a disruption on either circuit
- Diverse Routing via CATV and Telco

NexGen has Engineers to Help You

NexGen's engineers can help you with all of your technology upgrades, provide you with multiple quotes, and furnish all the information you need for your E-Rate documentation.

NexGen is a telecom and network engineering firm specializing in advanced IP voice and data, cloud services, network analysis, network optimization, wireless, and structured cabling. We create customer solutions by designing, installing, and maintaining their systems. For more information, contact Jack Bush at 847-459-1220 or jbush@sandgcom.com.

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About NexGen / S&G Communications

Our engineers provide design and implementation of IP phone systems and network services from all the leading carriers. We also offer WiFi services, cloud services, network analysis and network optimization services.

Our technicians install voice and data cabling, fiber optic cabling, racks, cabinets, under-floor tray systems, wireless access point installation, and more.

Our installers are certified, union technicians. By using quality products and certified technicians, we can provide you with an infrastructure capable of supporting all applications designed for today's standards.

Training and Service - As a provider of premier IP phone systems, we offer free on-site training and a suite of post-implementation services to help you successfully maintain your system.

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