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# Indicators of Digital Readiness

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<b>Indicator</b>	<b>Servers</b>
<b>Element</b>	<b>Technology Support &amp; Services</b>
<b>Priority Level</b>	<b>P2</b>
<b>Organizational Level</b>	<b>District</b>

## **Description of the Indicator**

Ensure districts have appropriate server infrastructure and servers needed to support appropriate access in a digital learning environment.

## **Why is this indicator important?**

Appropriate high performing service access is critical in a proper digital learning environment and operations of the school.

## Indicator Rubric

<b>Insufficient Evidence of Implementation</b>  (0 Points)	<ul style="list-style-type: none"><li>● No formal documentation of server infrastructure</li></ul>
<b>Foundational Stage of Implementation</b>  (2 Points)	Documented inventory of servers infrastructure that includes: <ul style="list-style-type: none"><li>● Inventory of server hardware and connected storage</li><li>● Services provided</li><li>● Capacity</li><li>● Purchasing information</li><li>● Physical specifications</li></ul>
<b>Achieving Success in Implementation</b>  (4 Points)	Evidence is provided for all previous rubric levels, as well as: <ul style="list-style-type: none"><li>● Evidence of the consideration of or implementation of private/public cloud infrastructure and applications where applicable</li></ul>
<b>Exemplary Success in Implementation</b>  (6 Points)	Evidence is provided for all previous rubric levels, as well as: <ul style="list-style-type: none"><li>● Documentation of server hardware and private/public cloud infrastructure</li><li>● Documented utilization hosted applications/services where cost efficient</li><li>● Documentation of server performance</li><li>● Documented disaster recovery/business continuity plan</li></ul>

## Who in the school/district should lead and be involved with this indicator?

- Superintendent
- Business Administrator
- Technology Director
- Network/Systems Administrator
- School Principal
- Board members

## How to execute the indicator

- Determination of what services are needed to be hosted (Onsite, cloud, or combination of both) by the school. (Will vary by district and possibly by school)
- For every service being implemented:
  - The hardware/service it is hosted on can meet the usage needs in terms of capacity and availability.
  - The solution can scale dynamically to meet increased demand.
  - The solution is properly secured and has a backup in place.
  - If local hardware is part of the solution, a hardware refresh plan exists and ensures server equipment is within 4 year refresh cycle (or that of the software manufacturer's recommended specifications) and has appropriate support/replacement plan(s) in place

## Evidence to submit for successful execution of this action *[what evidence artifacts do you suggest would adequately prove to the Awards Committee that some level of success has been achieved in this indicator?]*

- Contracts if cloud hosted
- Solution details if locally hosted
- Performance specifications/metrics of hardware (cpu, ram, connection, etc)
- Disaster recovery plan that minimizes lost instruction time (closer to 0 is better)

## Certified Schools Exemplars

### 1. [Borough School, Morris Plains School District, 2018 Silver Certified](#)

MPSD keeps copious documentation of the hosting status of all services, some of which are local onsite, some cloud based, and some are a unique blend. For each individual service, a log exists with notations of the capacity and availability associated with the service, an increase in demand plan/solution, details of data security within the service and recovery procedures in the event of an interruption to the service. All local hardware has a refresh cycle in place that aligns with both best practices and the recommendations of the specific manufacturer. All local hardware has service plans and/or insured plans in place in the event of a malfunction. Additionally, funds are allocated in the technology budget for immediate purchase in the event that new hardware becomes critical to the continued functionality of the district.

### 2. [Northern Valley Demarest HS, Northern Valley Regional HS District, 2018 Silver Certified](#)

NVRHS has achieved exemplar level status across all priority 1 in Technology & Support Services by ensuring that our vision for innovation, technology, and digital readiness is shared across all stakeholders -- from parents and community members to students and teachers. The high level of achievement seen in these indicators -- Servers, for example -- is the result of a systematic budgeting, planning, evaluation, and analysis process.

3. [Frank J. Smith School, East Hanover School District, 2018 Bronze Certified](#)

The East Hanover School District has a powerful IT structure in place to consistently support the needs of faculty and students. With the support of a managed IT service, the East Hanover School District constantly monitors the efficiency of our system and evaluates plans and policies in place with regard to the maintenance of our servers.

4. [Hazlet Middle School, Hazlet Township Public Schools, 2018 Bronze Certified](#)

Hazlet Township's server hardware and cloud infrastructure provide ample, secure access to all users. Provider contracts and agreements offer documentation of the services and support available in-district. The network design plan, backup and disaster recovery plan, and compliance expectations clearly explain protocols for safe and reliable use of the network.

5. [Holdrum Middle School, River Vale Public Schools, 2018 Bronze Certified](#)

The River Vale Public School District is committed to providing the education community with excellent technical services. In order to successfully support that commitment, a high performing server infrastructure is in place, along with a plan to periodically analyze capacity. We specifically highlighted local infrastructure details, performance, our Disaster Recovery Plan, and support contracts.

6. [Walnut Street Elementary School, Toms River Regional Schools, 2018 Bronze Certified](#)

The Toms River School districts main server environment is a three node Nutanix hyperconverged cluster running Hyper-V as the hypervisor. The servers were purchased in August of 2015 with an expected life span of at least 5 years. This environment host numerous district resources including the following:

- Destiny Library Automation
- District website and web services
- VersaTrans Transportation application
- Energy Management system
- Web filtering authentication services
- Domain controllers
- Print server
- File and Print server
- Network environment monitoring application
- Anti-virus server
- Microsoft licensing
- Database servers
- Google account sync services
- Network data security
- Door lock management system

The capacity of the system server cluster is 960 GB RAM, total CPU capacity 115 GHz and integrated storage of 29 TB.

The district has not found it cost effective at this time to move our in-house server environment to a cloud provider. This will be reconsidered in two years when our clustered servers have reached 5-years of use. The district does utilize cloud services for the following applications. In some cases it was determined to be more cost effective than in-house hosting while in other cases it is the only offering by the service provider.

- Applicant recruiting and hiring
- Special Ed IEP generation and interventions
- Staff absence recording and reporting
- Substitute calling
- Web filtering
- Financial Accounting
- Parent and staff notifications

The district is implementing a 1GB fiber network between all locations in July 2018. We will then be able to establish a disaster recovery site at a secondary district location with another virtual server environment to provide failover and data resiliency. Currently we perform daily backups of all data servers using an appliance from Unitrends. These backups are stored on-site with a copy in Unitrends cloud for off-site storage. In the case of server failure backups can be retrieved either from the on-site storage or the cloud environment. The cloud backups can fully run in the cloud environment in the case of catastrophic failure of our in-house server.

**7. [Orchard Valley Middle School, Washington Township School District, 2018 Bronze Certified](#)**

Our district's evidence shows how our robust servers are maintained and managed throughout the district. We discuss how many servers we have and their functions, and we highlight our backup strategies, our local and cloud-based architecture, our server communications and maps, as well as our disaster recovery plan. Our district has worked hard to ensure that we have both physical and virtual servers and that we have plans for backing up and managing them all. We also continue to evaluate our usage needs. The evidence shows that we continue to plan not just for the coming months, but as we move to the future. We look at unique needs in the district and find ways to work in the most efficient and cost appropriate manners. We also have an infrastructure replacement plan to ensure that we are never caught without working servers. Our district's evidence shows how our robust servers are maintained and managed throughout the district.