Sangfor Solution for Education

Sangfor Education industry solutions boost students’ success by improving learning efficiency, increasing reliability, enhancing network security, and reducing overall management complexity with low initial investment.

1. Business Trends and Key Challenges

- Core Business Transform Online (E-learning, Registration Platform)
- Facing Unknown WEB Security Risks
  - Demand Higher Reliability

- Teaching & Learning Anywhere (Remote Working, Terminal Security)
- Data Concentration, Resource Sharing
  - Secure & Simple Access

- Widely Used Digital Technology (Multi-Media, Cloud, Big Data)
- Need Higher Management Efficiency
  - Need Professional IT Skills

Problems of Traditional Solution

- Traditional 3-tier architecture solution is expensive to build, complex to manage and has low reliability
- Traditional PC teaching is extremely difficult for data protection, resource shearing, and some traditional VDI solutions lack E2E solution. Different components are delivered by various vendors with no integration
- Higher management cost due to complex traditional IT architecture, technology, deployment & dispersive PC terminals
- Bandwidth control effect is poor because of low recognition rate of localize applications & URLs. Don’t support independent traffic management of international bandwidth
- Traditional firewall device cannot protect web business effectively due to lack of integrated WAF functions
- The traditional security solution is focused on defense against external attacks, lacking control & risk management for various internal behaviors from students & terminals

Therefore, a cost-effective & one-stop solution that provide continuous protection, effective management, improved reliability & reduced platform complexity is the best option for education.
2. Main Solution Scenarios for Education Industry

Sangfor Education Solution is customized based on different scenario requirements and business features. These new solutions utilize advanced cloud computing technology and a concept of converged architecture in order to better meet future business needs. The solution consists of sub-scenarios solution that users can do one-time deployment or implement in stages.

- Sangfor SDDC Solution for Education Based on HCI
- Virtual Desktop Solution for Library & Computer Lab
- Full Network Security & Management Solution

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**Sangfor SDDC Solution for Education**

**Main Campus**

- eLearning
- eLibrary
- Linux
- Win

**Branch Campus**

- APP
- OS
- Win

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**aSV / aSAN / aNet**

**Main Data Center**

- HCl
- HCl
- HCl
- SW
- CDP

**Backup Data Center**

- HCl
The solution is 100% software-based and built on hyper converged infrastructure (HCI) technology, delivering a full infrastructure stack that integrates compute, storage, network and security to power any application with any workload. Sangfor SDDC solution will reduce hardware cost by 30% and simplify M&O workload by 60%. It can improve business reliability and is easy to extend without any system downtime.

**Solution Benefits**

- Support pure software deployment on existing third party servers
- Built-in CDP & DR function
- Integrated NGAF & AD components to ensure security & reliability for web business
- Super visibility & intuitive network topology

**Technology Advantages**

**Best Practise of Sangfor SDDC Solution for Education**

**Customer Background**

Universiti Sultan Zainal Abidin (abbreviated as UniSZA) is considered the biggest "comprehensive university" in the east coast of Peninsular Malaysia and to be one of the most respected Islamic-based institution of higher learning in Malaysia.

**Requirement of Customer**

- Reduce the number of racks
- Release the pressure of the cooling system
- DR and Backup solution should be integrated
- Open source systems should be supported
- Operation and maintenance need to be simplified

**Sangfor SDDC Solution for Education**

Sangfor HCI was provided with 6 nodes deployment. 3 nodes each were deployed at production site and DR site. Compute, storage, network, security and DR are all integrated. VMs and storage can be backed up locally or remotely. If production server was down, DR server would resume operation within an hour. Software defined architecture transforms existing facilities into more location-independent, flexible and collaborative learning environments with low TCO.
Customer Benefits

- 13 racks have been reduced to 3 racks, saving 80% of electricity cost
- Operation and management is easier, and more than 60% maintenance workload is released
- More than 100 applications are supported
- IT infrastructure becomes much more reliable, because DR and backup solution is integrated.
- System becomes more secure, because vNGAF is provided for internal and external protection
- Comprehensive features and functions provided with low TCO

Best Practices for Configuration

Suitable for 5k-8k Students

<table>
<thead>
<tr>
<th>Solution components</th>
<th>Product model</th>
<th>Specification description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware</td>
<td>aServer-2100</td>
<td>CPU E5-2630v4<em>2 (10C20T, 2.2GHZ), 128G (16G</em>8) Memory, 8<em>SATA/SAS disk slots, 128G OS disk, 6</em>GE</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Tor Switch</td>
<td>24*GE Switch, 2 nodes are used for computer network and other 2 for storage network</td>
<td>4</td>
</tr>
<tr>
<td>HCI Software</td>
<td>aSV</td>
<td>Compute virtualization, HA, DRS, Automated hot add, backup, clone...</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>aNet</td>
<td>Network virtualization, Distributed firewall, Drawable topology, visualized network, aSwitch, aRouter</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>aSAN</td>
<td>Storage virtualization, 2-3copies, SSD read &amp; write acceleration</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>CDP main engine</td>
<td>Continuous Data Protection, software-based (per cluster), CDP can be enabled for 5 VMS by default</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>CDP VM llicense</td>
<td>Software-based CDP license per VM</td>
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</tr>
<tr>
<td>NFV</td>
<td>VAF-200L</td>
<td>FW, BM, IPS, URL&amp;APP, anti-virus, anti-malware, email security, sandboxing, risk assessment, security visibility, basic security reporter included</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>VAD-100</td>
<td>Load balance, reverse proxy, application performance monitor, report</td>
<td>1</td>
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Suitable for 9k-12k Students

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<td>6</td>
</tr>
<tr>
<td></td>
<td>Tor Switch</td>
<td>24*GE Switch, 2 nodes are used for Vxlan network &amp; 2 for business network</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Storage Switch</td>
<td>24*GE Switch are used for Storage network</td>
<td>2</td>
</tr>
<tr>
<td>HCI Software</td>
<td>aSV</td>
<td>Compute virtualization, HA, DRS, Automated hot add, backup, clone...</td>
<td>12</td>
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<tr>
<td></td>
<td>aNet</td>
<td>Network virtualization, Distributed firewall, Drawable topology, visualized network, aSwitch, aRouter</td>
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<tr>
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<td>aSAN</td>
<td>Storage virtualization, 2-3copies, SSD read &amp; write acceleration</td>
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Sangfor Education Network Security and Management Solution

Solution Benefits

• One device protects network and web business security at the same time by converged WAF module

• Effectively identify and defend unknown threats with Engine Zero module based on AI and Big Data technology

• A cloud-based intelligence and analytic platform offers powerful security detection capabilities

• Improve network management efficiency and reduce internal security risk by deploying IAM that offers user authentication, behaviors control and bandwidth management

Technology Advantages

- Support 30+ authentication methods such as Portal, AD SSO
- Fully integrated NGAF + NGWAF + Security visibility
- Localized Application & URL Library
- Updated every two weeks
- International bandwidth independent management
- Achieve granular control of various applications
- Deep learning, no reliance on signatures
- Malware detection rate is higher than other vendors
- Identify vulnerabilities and risks to business assets
- Visibility of overall security status
University of the East in Manila Philippines
UE has several campus in Manila and Caloocan, only Manila campus could have server (main webpage system, portal system, enrollment system, library system, etc.). Other campus must access to Manila campus datacenter.

Sangfor provided two NGAFs in Manila campus for campus security, one NGAF and one IAM in Caloocan campus for campus security and Internet proxy.

Key Advantages

• Holistic and real-time protection, clear and easy-to-understand report help UE effortlessly tackle with their security issues.

• With application control and proxy of IAM, UE can granularly control use behavior and the comprehensive report feature is an effective tool for understanding network status.

Sangfor VDI Solution for Education

All resources are deployed in cloud, teachers and students can get consistent experience when using different terminals to access. Desktop quick recover and batch management help save effort & time.
### Solution Benefits

**Resources Sharing Enables Agile Teaching**
Simply get course resources without carrying laptop or copying

**Improve Management Efficiency**
Failure rate dropped by 80%. Minute-level recovery. Template deployment. Centralized management.

**Enhanced Data Security**
Centralized storage. Terminal without data storage. Risks of data loss and being attacked are reduced.

### Technology Advantages

1. One-Stop VDI Solution Based on Sangfor HCI
2. Great HD Video Experience
3. Excellent Peripheral Compatibility
4. End-to-End Security Mechanism
5. Advanced 3D Features by NVIDIA

### Best Practise of Sangfor Virtual Desktop Infrastructure Solution

**Macau City University**

**Customer Background**
City University of Macau (CityU) is a private university in Macau. Formerly named as Asia International Open University (Macau)

### Challenges

- Spend lot of time to power on/power off the PCs
- High failure rate and hard to upgrade PC performance
- No Authentication to connect to Internet

### Benefits

- Schedule to power on/power off the PC every day, auto recover windows system disk after reboot.
- Easily adjust the PCs specs if needed
- Integrate with SANGFOR IAM for SSO authentication
### Best Practices for Configuration

**Scenario:** Library, Win10, 150 Thin clients  
**Main applications:** Unlimited internet surfing, video watching and document download

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<th>Module</th>
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<th>Quantity</th>
<th>Specification</th>
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<tbody>
<tr>
<td>Thin client</td>
<td>STD-200H-VGA/HDMI</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>Server</td>
<td>VDS-6550</td>
<td>6</td>
<td>About 25 VM for per server</td>
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<td>Software License</td>
<td>VS-6550</td>
<td>6</td>
<td>Virtual storage module</td>
</tr>
<tr>
<td></td>
<td>VDI standard version license</td>
<td>150</td>
<td>Charge by concurrent users (including Private desktop/shared desktop/remote application)</td>
</tr>
</tbody>
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**Scenario:** Teaching office and multi-media, Win10, 200 Thin clients  
**Main applications:** Microsoft office/CAD/upload & download/surfing internet & watch video/file encryption

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**Scenario:** Students room, Win10, 250 Thin clients  
**Main applications:** Microsoft office/CAD/Courseware/video streaming

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  - [YouTube](https://www.youtube.com/user/SangforTechnologies)