# SANGFOR AD Product Series

SANGFOR Application Delivery (AD) Product Series provides customers with the global server load balance(GSLB), inbound/outbound load balance, server load balance, SSL off-load and anti-DDoS solutions for application delivery. They will improve service availability, performance, security, improve the access experience of users and reduce the IT investments of organizations.

SANGFOR

Choice of the Post Load Balancing Era

Compared with traditional load balancing devices, SANGFOR AD Product Series are added with intelligent and optimization functions based on high stability to help users cope with challenges led by service deployment and delivery in a complex application environment. By appropriately deploying the AD device, users can further improve the performance and security of its service applications, increase the efficiency of DC infrastructure, and even catch up with the trend of deploying virtualized DC in the future.
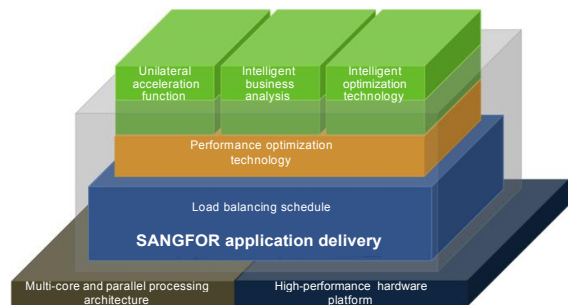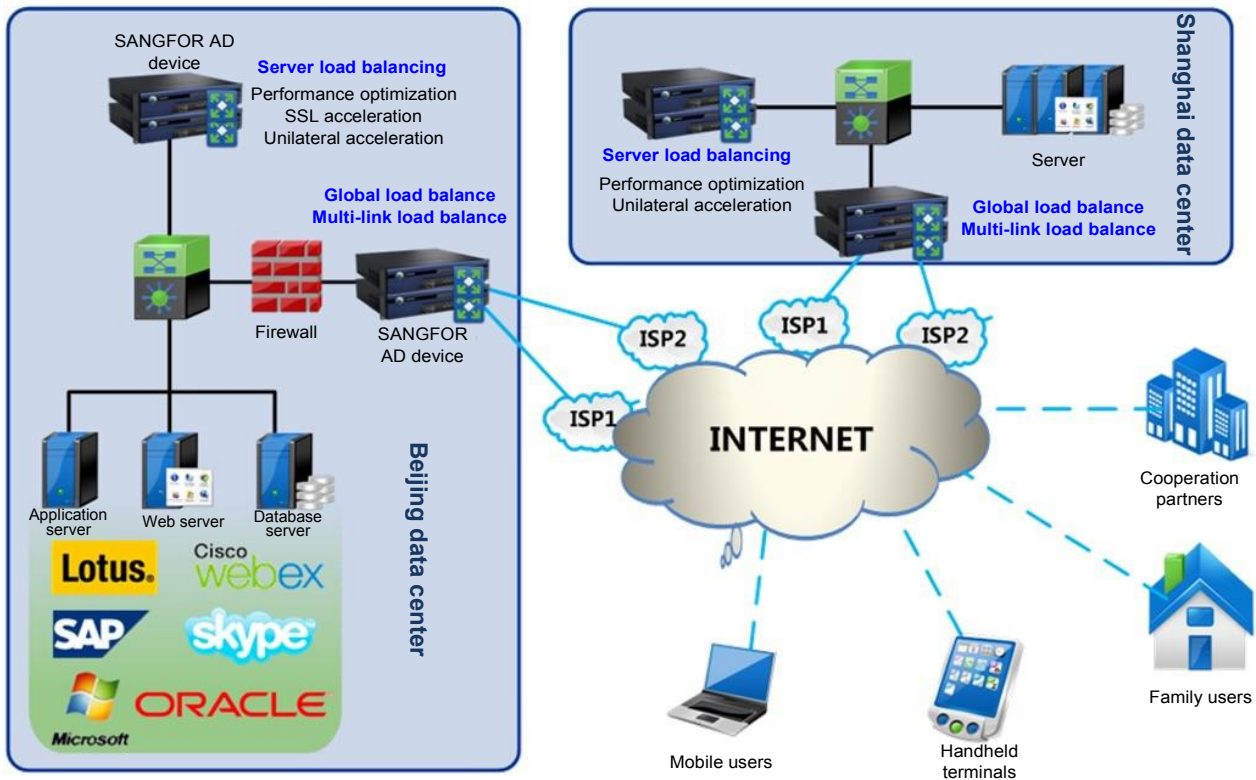

All-in-1 Load Balancing

▶▶ *Comprehensive Functions:* SANGFOR AD solution integrates global load balancing, multi-link load balancing, and server load balancing, as well as supports deployment on IPv4 and IPv6 networks. It helps users thoroughly improve the utilization rate of IT computing resources.

▶▶ *Cost Effective:* SANGFOR AD product series shatter the monopoly of suppliers. Without the need to purchase any extra license, one device is equipped with 3 load balancing functions, together with many optimization functions (such as SSL acceleration, cache, and compression) that can be directly enabled. Therefore, this device offers a higher ROI compared with other similar products in the industry.

Fast and Intelligent

▶▶ *Unilateral Acceleration:* With the unique unilateral acceleration function, users can increase access speed without having to install any plug-in or software on the client. Thus, a stable and smart service release platform can be established, allowing users to access released content in a faster and more stable manner.

▶▶ *Commercial Intelligent Analysis:* On the precondition that stability of data exchange is ensured, SANGFOR AD Product Series help users learn the running status of organization's network, servers, and DC; enabling the organization to analyze the running status of its own service system, thus providing a reference for decision making in regard to the high-level network optimization and service optimization.

▶▶ *Intelligent Optimization Technology:* The transparent DNS proxy, peak-hour service regulation, and intelligent alarm technologies further improve utilization rates of various resources, and enhance the access experience of users.

Application Delivery Network

Load Balancing of Outbound Traffic

▶▶ Support transparent DNS proxy function and fully utilize bandwidth resource.

▶▶ Support intelligent routing, and customization of the load balancing policy.

▶▶ If multiple ISP links are available, support dynamic detection of network proximity and judgment of the static proximity based on the address segment, based on which the optimum ISP link is selected.

Load Balancing of Inbound Traffic

▶▶ Support intelligent DNS parsing function.

▶▶ Support DNS intranet recording. The DNS policy supports the A, MX, NS, CNAME, and TXT recording types.

▶▶ Supports domain name-based load balancing policy, and mapping of many domain names to one public network IP address to save the public network IP addresses.

Server Load Balancing

▶▶ Support load balancing of applications that comply with the TCP, UDP, HTTP, RADIUS, and DNS protocols.

▶▶ Support multi-level health check mechanism, such as application type-based proactive detection, observation type-based passive sensing, and customized mechanism.

▶▶ Support session keeping technologies that are

Global Load Balancing

▶▶ Support intelligent DNS and IP-Anycast mode.

▶▶ Support global load balancing of 16 sites by default.

▶▶ Support global or local static proximity.

▶▶ Support the preferred policy, backup policy, and backup IP address.

▶▶ Embedded with the global ISP address library

based on the source IP, Cookie (insert, passive, and rewrite), HTTP-Header, and RADIUS.

and support automatic update.

▶▶ Support configuration synchronization of all or some AD devices.

Load Balance Scheduling

▶▶ Support multiple scheduling algorithms, such as polling, weighted polling, weighted minimum connection, weighted minimum flow, bandwidth proportion, Hash, active/standby, first available, static proximity, dynamic proximity, dynamic feedback, fastest response time, priority, and UDP forced load.

▶▶ Support advanced scheduling policies, such as HTTP header rewrite, HTTP protocol content matching, page jump, and discard.
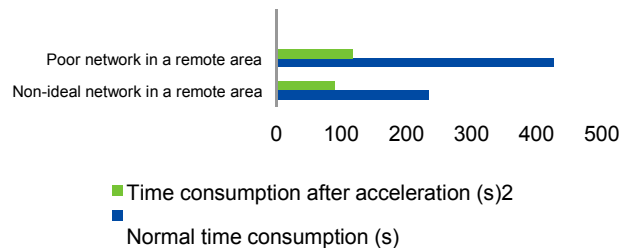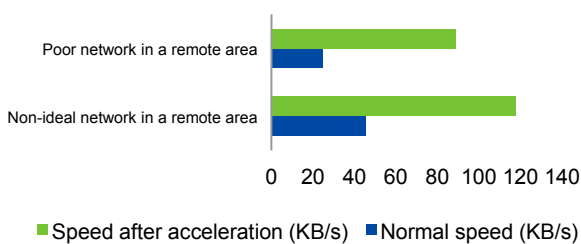
Device Management

▶▶ Support HA-mode deployment and dual-host session synchronization.

▶▶ Support full-Chinese management interface HTTPS user login, user role management, multi-level authorized management, and centralized device management.

▶▶ Support viewing of the system status, link status, and server status.

▶▶ Support port mapping, switching network port, port aggregation, redundancy dual network adapters, Flood protection, ARP protection, and ACL.

Server Performance Optimization

▶▶ Support TCP connection reusing to reduce server performance pressure.

▶▶ Support SSL acceleration to save hardware investment.

▶▶ Support memory cache function to improve system processing capability.

▶▶ Support HTTP real-time compression to improve user access speed.

▶▶ Support triangle transmission to improve throughput of the service system.

Health Assurance Mechanism

▶▶ Support customized health check modes that are based on SNMP, ICMP, UDP, TCP, DNS, RADIUS, and HTTP.

▶▶ Support passive health based on the TCP and HTTP content.

▶▶ Limit the maximum number of server connection and the maximum number of concurrent connections to prevent overload.

▶▶ Support warm online and smooth exit of servers to facilitate maintenance management.

Unilateral Acceleration

Poor network in a remote area

Non-ideal network in a remote area

0 20 40 60 80 100 120 140

■ Speed after acceleration (KB/s) ■ Normal speed (KB/s)

Poor network in a remote area

Non-ideal network in a remote area

0 100 200 300 400 500

■ Time consumption after acceleration (s)2

■ Normal time consumption (s)

▶▶ *Transparent for Users:* Only SANGFOR AD device needs to be deployed on the release end of the application system. No plug-in or software needs to be installed on the client.

▶▶ *Improving Service Competitiveness:* Reduce response time of application programs to enhance the access experience of users without bandwidth upgrade.

- ▶ ▶ *Improving TCP Transmission Efficiency:* Detect delay, packet loss, and retransmission on network paths in an automatic, real-time, consistent, and dynamic manner to change the outbound mechanism; improving transmission congestion mechanism, avoiding excessive retransmission of data packets, thus shortening application response time.
- ▶ ▶ *Applications Acceleration Scenarios:* Optimize all TCP data streams. All applications running over TCP can be accelerated by using the unilateral acceleration technology. In complex network environments, such as stock investment on mobile phones, carriers' 3G network access, and users' cross-country access, the unilateral acceleration technology can greatly increase the access speed of users.

Intelligent Business Analysis

- ▶ ▶ *Detailed Link Report:* Provide detailed reports for a single link or multiple links, including the uplink/downlink traffic report, session connection & link distribution report, link IP access report, and link quality report.

- ▶ ▶ *Rich Service Reports:* Include server response time statistical report, IP/user access statistics report of a single link or multiple links, server traffic & connection statistics report, and server health report.

- ▶ ▶ *Reports for Business Decision Making:* Include time segment-based service access report, area-based service access report, and service source-based (such as URL) access analysis report. These reports help enterprises collect various types of business information, learn the time distribution features of services, and familiarize enterprises with the access time preference and usage preference of final users. Such information can be used as the data source for business decision making.

Intelligent Optimization Technology

Transparent DNS Proxy

- ▶ ▶ Support forwarding of network access DNS request of intranet users to implement scheduling based on user names and domain names.
- ▶ ▶ Utilize multiple links in a rational manner to prevent wasting the bandwidth resource.

Intelligent Routing

- ▶ ▶ Provide guidance for load configuration based on the user requirements.
- ▶ ▶ Support user access control based on the customized time segment.
- ▶ ▶ Support selection of an outgoing link based on the name of the destination domain to be accessed.

Peak-Hour Service Regulation

▶▶ Support link usage oriented overload protection mechanism to select the access paths for users based on the bandwidth load of each link.

▶▶ Support server healthiness oriented elastic load mechanism to sense the healthiness and dynamically adjust the server load based on the passive observation.

Intelligent Alarm

▶▶ Send alarms in real time through emails to notify related management personnel for maintenance

▶▶ Support alarms triggered by links, servers, virtual service, dual-host failover, and network attack.

Sangfor AD Data Sheet

Model	AD-1000-A800	AD-1000-B600	AD-1000-C620	AD-1000-D620	AD-1000-E640	AD-1000-F680	AD-1000-G642
Profile	1U	1U	1U	2U	2U	2U	2U
CPU	4C 2.3GHz	2C 2.5GHz	2C 2.7GHz	2C 2.7GHz	2C 2.7GHz	4C 3.1GHz	4C 3.2GHz
RAM	4GB	4GB	4GB	4GB	4GB	8GB	8GB
Hard Disk	128G SSD	128G SSD	128G SSD	240G SSD	240G SSD	240G SSD	240G SSD
Port as default	8*1GbE BASE-T	6*1GbE BASE-T	6*1GbE BASE-T + 2*1GbE SFP	6*1GbE BASE-T + 2*1GbE SFP	6*1GbE BASE-T + 4*1GbE SFP	6*1GbE BASE-T + 8*1GbE SFP	6*1GbE BASE-T + 4*1GbE SFP+2*10GbE SFP
Dual Power Supplies	N/A	N/A	N/A	Support	Support	Support	Support
Power [Watt] (Typical)	22w	180w	180w	180w	212w	176w	176w
System Weight	3.85kg	6kg	6kg	12.5kg	12.5kg	12.5kg	12.5kg
System Dimensions	300mm(L)*430mm(W)*44.5mm(H)	390mm(L)*430mm(W)*44.5mm(H)	390mm(L)*430mm(W)*44.5mm(H)	500mm(L)*440mm(W)*89mm(H)	500mm(L)*440mm(W)*89mm(H)	500mm(L)*440mm(W)*89mm(H)	500mm(L)*440mm(W)*89mm(H)

Working Temperature	0℃~40℃	0℃~40℃	0℃~40℃	0℃~40℃	0℃~40℃	0℃~40℃	0℃~40℃
Relative Humidity	5%~95% RH	5%~95% RH	5%~95% RH	5%~95% RH	5%~95% RH	5%~95% RH	5%~95% RH
L4 Throughput	600Mbps	700Mbps	1.5Gbps	2Gbps	3Gbps	6Gbps	8Gbps
L7 Throughput	600Mbps	700Mbps	1.5Gbps	2Gbps	3Gbps	6Gbps	8Gbps
SSL Off Load Throughput	600Mbps	700Mbps	1Gbps	1Gbps	1Gbps	3.4Gbps	3.5Gbps
L4 Concurrent Connections	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,800,000	2,000,000
L4 Connections Per Second	50k	60k	80k	100k	120k	200k	240k
L7 Requests Per Second	30k	30k	40k	50k	60k	130k	150k
SSL TPS 1K Single/Bidirectional Keys	2200TPS/1800TPS	2500TPS/2100TPS	3000TPS/3000TPS	3500TPS/3500TPS	4200TPS/4200TPS	12000TPS/7400TPS	12000TPS/7400TPS

Model	**AD-1000-H642**	**AD-1000-I482**	**AD-1000-J442**	**AD-1000-K482**	**AD-1000-L482**	**AD-1000-M482**
Profile	2U	2U	2U	2U	2U	2U
CPU	4C 3.4GHz	4C 3.4GHz	4C 3.4GHz	2*6C 2.2GHz	2*6C 2.3GHz	2*10C 2.5GHz
RAM	16GB	16GB	32GB	32GB	48GB	48GB
Hard Disk	240G SSD	480G SSD	480G SSD	480G SSD	480G SSD	480G SSD
Port as default	6*1GbE BASE-T + 4*1GbE SFP+2*10GbE SFP	4*1GbE BASE-T + 8*1GbE SFP+2*10GbE SFP	4*1GbE BASE-T + 4*1GbE SFP+2*10GbE SFP	4*1GbE BASE-T + 8*1GbE SFP+2*10GbE SFP	4*1GbE BASE-T + 8*1GbE SFP+2*10GbE SFP	4*1GbE BASE-T + 8*1GbE SFP+2*10GbE SFP
Dual Power Supplies	Support	Support	Support	Support	Support	Support
Power [Watt] (Typical)	180w	212w	212w	332w	332w	332w
System Weight	12.5kg	20kg	15.3kg	20kg	20kg	20kg
System Dimensions	600mm(L)*440mm(W)*89mm(H)	600mm(L)*440mm(W)*90mm(H)	600mm(L)*440mm(W)*89mm(H)	600mm(L)*440mm(W)*90mm(H)	600mm(L)*440mm(W)*90mm(H)	600mm(L)*440mm(W)*90mm(H)
Working Temperature	0℃~40℃	0℃~40℃	0℃~40℃	0℃~40℃	0℃~40℃	0℃~40℃
Relative Humidity	5%~95% RH	5%~95% RH	5%~95% RH	5%~95% RH	5%~95% RH	5%~95% RH
L4 Throughput	10Gbps	15Gbps	20Gbps	30Gbps	40Gbps	60Gbps

L7 Throughput	10Gbps	10Gbps	15Gbps	15Gbps	20Gbps	30Gbps
SSL Off Load Throughput	4Gbps	4.3Gbps	4.9Gbps	5.6Gbps	8.6Gbps	9.6Gbps
L4 Concurrent Connections	3,500,000	3,500,000	9,000,000	9,000,000	15,000,000	15,000,000
L4 Connections Per Second	300k	300k	420k	500k	600k	800k
L7 Requests Per Second	200k	200k	220k	250k	300k	400k
SSL TPS 1K Single/Bidirectional Keys	12000TPS/ 7400TPS	14500TPS/ 6700TPS	15400TPS/ 15400TPS	20000TPS/ 20000TPS	36000TPS/ 23000TPS	44000TPS/29 000TPS

Sangfor vAD Data Sheet

Model	vAD-100	vAD-200	vAD-400	vAD-800
CPU	2C 2.5GHz	2C 2.5GHz	4C 2.5GHz	8C 2.5GHz
RAM	4GB	4GB	8GB	16GB
Hard Disk	≥128G	≥128G	≥128G	≥128G
L4/L7 Throughput	500Mbps	1Gbps	3Gbps	5Gbps
L4 Concurrent Connections	1,000,000	1,000,000	2,000,000	3,000,000
L4 Connections Per Second	100k	100k	120k	150k
L7 Requests Per Second	30k	30k	35k	50k
SSL CPS/TPS	800	800	1600	2180
SSL Concurrent Connections	100,000	100,000	192,000	405,000
SSL Off Load Throughput	500Mbps	580Mbps	1.3Gbps	1.6Gbps