4-Port AirSpot Gateway

With 2 WAN Ports for Double Internet Bandwidth

The DSA-5100 AirSpot Gateway is a cost-effective device for business and public organizations such as schools, hospitals and conventions to create a wired or wireless hot spot. This Public/Private Hot Spot Gateway is an Ethernet-based gateway designed to provide free or fee-based broadband connection to the public users while at the same time providing a separate and secure private network that shares the same Internet connection. If your business relies on public patronage, you have a way to give customers access to the Internet, or to networked printers and other resources. If you're a private company that wants to offer wireless Internet access for your employees, you can do so with the confidence that you're still maintaining a secure private network that a wireless user will never see. Connect a D-Link wireless access point to the DSA-5100 and you've got a wireless hot spot. Connect a D-Link switch and your back office computers and printers can share the same broadband connection.

Double Internet Bandwidth

The DSA-5100 provides 2 WAN ports to double the Internet connection bandwidth. The WAN ports supports 802.3ad Link Aggregation industry standard and can be bonded together into a load-sharing port trunk to eliminate bottlenecks in heavy Internet access environments. The DSA-5100 provides bandwidth management tools for you to assign rational bandwidth usage of the 2 WAN ports.

Total Wireless Management Solution

The DSA-5100 Network Access Control System (NACS) provides functions beyond the AAA standard. Its 4A management solution supports not only Authentication, Authorization and Accounting (AAA), but also Administration for all wireless (and wired) network users. The gateway has a built-in database of up to 60 customized access management rules and up to 2,000 user accounts. The DSA-5100 can support up to 400 users on-line at any single moment. The gateway also supports POP3, RADIUS, and LDAP external authentication for larger-scale hot spot networks. Other features IP plug and play, user bandwidth control, network policy enforcement, customizable user timer, login/logout web-page, online traffic monitoring, and URL redirection provide a number of different ways for your organization to configure and manage your hot spot as either as a free or revenue-generating service.

Comprehensive Network Protection

The DSA-5100 includes a built-in DHCP server and a built-in high-speed routing engine, an easy-to-use web-based graphical user interface (GUI) with SSL protection to securely and quickly configure the device.
Configuration is also capable through the device's RS-232 console port. To prevent unwanted Internet intruders from accessing your network, the DSA-5100 has a built-in Security Firewall with Denial of Service (DoS) prevention. With IP PnP (Plug and Play) and IP/port redirection provided by the DSA-5100, users connecting to the hot spot don't need to re-configure their computer's settings to send or retrieve e-mail or access the Internet.

Ideal Hot Spot Solution

Capable of serving hundreds of simultaneous, discrete users, the DSA-5100 gateway is the perfect system for a mid-size enterprise and organization to provide a wireless hot spot. In a matter of just a few minutes, your business or organization can provide a wired or wireless hot spot while still maintaining a private network that the public will never see. Whether you're an enterprise, merchants association, factory, hospital, school, or public library, the DSA-5100 is your instant hot spot solution.

Functions & Features

Simplified wireless connection for end users

- No extra software required at end-user side
- No IP setting change on end-user computers
- Friendly end-user connection to login page from web browser
- Minimized training cost for hot spot service providers

Beyond the AAA, total wireless management

- Satisfies 4 requirements of WLAN management: Authentication, Authorization, Accounting, Administration (4A)
- Built-in end-user database with maximum 60 customizable access management rules for different groups
- Multiple external authentication systems support: RADIUS, POP3, POP3S, LDAP/AD
- Simultaneous support of multiple external authentication hosts
- Rational assignment of bandwidth usage through a bandwidth management tools
- Wireless Access Point on-line status monitoring through Monitor IP function
- Remote system maintenance in safe mode through SSL encryption

Complete security features

- Multi-layer traffic control from L2 to L4 with 802.1x standard integration
- End-user account information protection through SSL encryption at login
- Customizable packet filtering rules through group policies to manage end-users' access
- End-user access time control through login schedules management
- Multiple protection mechanisms against DoS attacks

Integrated accounting engine

- Multiple accounting mechanisms
- RADIUS and local-based account records support

Technical Specifications

Hardware

Device Ports

- 2 WAN ports (10/100BASE-TX Ethernet) with 802.3ad LACP Link Aggregation support
- 1 private LAN port (10/100BASE-TX Ethernet) with 802.1q VLAN tag support
- 1 public LAN port (10/100BASE-TX Ethernet) with 802.1x authentication support
- 1 RS-232 console port
- 1 RS-232 auxiliary port (reserved for thermal printer connection)

System Performance

- Maximum concurrent users supported: 400 users
- Maximum network throughput: 90Mbps

Dynamic Memory (RAM Buffer)

128MB

Flash Memory (Firmware)

64MB

LED Indicators

- Power (per device)
- Status (per device)
- Link/Activity (per WAN/LAN port)

Software Features

Networking

- NAT, router and bridge modes
- NAT Plug and-Play
- Static IP, DHCP client and PPPoE client on WAN1 interface
- Static IP, DHCP client and 802.3ad (under static IP) on WAN2 interface
- Built-in DHCP server
- DHCP relay
- Built-in NTP client
- HTTP proxy
- Destination IP/port redirect
- Inter-IP-segment roaming
- IPSec (ESP), PPTP and H.323 pass-through (under NAT)
- Virtual Server Mapping
- DMZ Server Mapping
- Static Route Mapping

User Management

- Maximum local user accounts in built-in database: 2,000 accounts
- Optional MAC address locking with local user database
- Maximum guest accounts: 10 accounts
- MAC ACL
- Maximum number of on-line users: 400 users
- Maximum number of authentication/authorization policies: 5 policies
- External authentication database support: POP3, POP3S, RADIUS, LDAP, Windows domain
- Allow/disallow multiple login
- User login schedule control
- Customizable logout timer
- Customizable guest session time control
- MAC/ IP address pass-through
- GRIC roaming in
- Customizable Black List
- Local/RADIUS accounting

Security Policy

- Secure HTML login page (SSL)
- 64-bit, 128-bit WEP encryption
- 802.1x user authentication (EAP, MD-5, EAP-TLS)
- Maximum 802.1q VLAN (for LAN ports): 32 VLANs
- VLAN tag range from 2 to 4094
- Machine/Subnet DoS protection
- Customizable packet filter rules by group
- Customizable Walled Garden (free surfing area)

DSA-5100

Technical Specifications

AirSpot Gateway

Administration
- On-line status monitoring/traffic data history
- SSL protected administration/user authentication interface
- IP monitoring
- Customizable user login/logout web interface
- Targeted URL redirect after successful login
- Console administration interface
- Web-based administration interface
- SSH remote administration interface
- SNMP v.2 management standard
- External SYSLOG server
- User bandwidth control
- Remote firmware update
- Configuration data backup/restore

Software Specifications

Networking

WAN Fail Condition Handling
- WAN fail condition detection using ICMP echo mechanism to ping default gateway and DNS periodically
- 2 configurable options prior to WAN failure:
  Display error message and block all access
  Allow free access without control

Policy Routing Profiles
- 6 sets of policy routing rules
- 10 rules for each policy routing set

NAT/Router Dual Mode Operation
Each VLAN/LAN port separately configurable to different modes of operation

Destination IP/Port Redirection
Maximum 40 definable IP/port redirection rules to force data packets to be redirected from one destination to another destination

Non-Authentication Private LAN Port
(For connection to desktops and servers)
Hosts on Private LAN still under control of firewall rules

Bridge Mode
- DSA-5100 can be set up as a bridge for easier network integration
- Limitations in bridge mode:
  All device interfaces are bridged; VLANs are disabled
  Available only when WAN port is set to static IP address

First WAN Port Connection Methods
- Static IP address
- DHCP client
- PPPoE client

Second WAN Port Connection Methods
- Static IP address
- DHCP client

Built-In DHCP Server
- Each LAN port independently configurable/enabled
- Configurable functions: IP pool, leasing time, WINS, DHCP relay, DNS (per port, primary, secondary)
- Default IP of Public LAN: 192.168.1.40
- Default IP of Private LAN: 192.168.0.40

NAT Application Protocol Pass-Through
When client is under NAT segment, following protocols can be passed through: IPSEC (ESP), PPTP/L2TP, H.323

HTTP Proxy
Maximum 10 sets of external proxy servers

Inter-Segment Roaming
Authenticated users can roam between VLAN segments without changing their network settings or re-login to system

Static Route Mapping
- Maximum 6 sets of policy routing rules
- Maximum 10 rules per policy routing set

Virtual Server Mapping
Maximum 40 configurable mapping rules

DMZ Server Mapping
Maximum 40 configurable DMZ server mapping rules

IP Plug-and-Play Support
Clients can use their existing pre-configured IP address to access Public LAN or Private LAN port without changing their IP settings *

** This function (1) not supported in bridge mode, (2) does not allow any L3 switch between clients and DSA-5100.*

User Management

Access Control to LAN Port
Users must login first to gain network access

Group
- Maximum 6 user groups (1 guest group, 5 definable user groups)
- Each group configurable to have own name, filter rules, routing, bandwidth control and schedule control

MAC Address Control
Maximum 40 sets of MAC addresses

External User Database Failure Condition Handling
Displays error message with administrator's contact information

Logout Method
- Manual logout (password & ID key-in required)
- By closing logout window (once user-friendly logout enabled)

Login Method
- Automatic login through user's cached login information
- Customizable maximum remembrance of user ID

Multiple User Databases
Simultaneous support of multiple internal/external user databases for authentication

Guest User Configuration
Maximum 10 predefined guest accounts configurable as active or inactive

Local User Accounts
- Maximum 2000 user accounts
- User accounts configurable to associate with individual MAC addresses
- Case-insensitive user IDs

RADIUS Authentication
- Primary/secondary RADIUS servers support for fault-tolerant user authentication
- RADIUS authentication protocols supported: PAP, CHAP
- RADIUS attributes supported: Session Timeout, Idle Timeout

LDAP User Database
- Microsoft Active Directory support
- Configurable fields: LDAP server IP, port number, Base DN

POP3 Authentication
Primary/secondary POP3 mail server support

POP3S Authentication
Primary/secondary POP3 mail server with SSL support

Windows Domain Authentication
Microsoft NT domain controller support

Transparent Windows Domain Login
Automatic login to DSA-5100 upon user's successful login to Windows domain *

** Windows 2000 domain controller support only*

GRIC Roaming
GRIC users can use DSA-5100 UAM to login to controlled network

Definable Guest Permission
Maximum 10 definable filter rules

Black List
Maximum 5 Black Lists to disallow up to 50 pre-defined user accounts from network access

User Login Schedule Profile
Maximum 5 schedules to control matrixes by the hour

Guest Session Time Control
1 to 12 hours' limit (default: no limit)

Local/RADIUS Accounting
- Local accounting mode generated CDR-liked recorder containing fields:
  Start time
  End time
  User ID
  User MAC
  User IP
  Packets In
  Bytes In
  Packets Out
  Bytes Out
- RADIUS accounting mode accounting attributes: *
  User-Name
  Calling-Station-ID
  Framed-IP-Address
  Acct-Terminate-Cause
  Acct-Input-Octets
  Acct-Output-Octets
  Acct-Input-Packets
  Acct-Output-Packets

** Generated using standardized RADIUS accounting protocols and put on RADIUS server*

Firewall

Firewall Profiles
- 6 sets of IP filtering rules (50 rules for the Global set, 10 rules for each set of other IP filters)
- Following fields can be applied to machines and subnets controlled by DSA-5100:
  Protocol
  Port/port range
  Source MAC
  Source/destination interface
  Source/destination IP address/segment

Walled Garden
IP/IP segments defined in Walled Garden can be visited prior to user login

Machine/Subnet DoS Protection
- NMAP FIN/URG/PSH
- Xmas Tree
- SYN/RST
- Ping of Death
- Null Scan
- SYN/FIN

Administration

Customizable User Login/Logout Page
- Uploaded login/logout page may include images
- Image size for all uploaded images limited to 512KB
- Login/logout pages can be enabled/disabled through 128-bit SSL

Home Page Support
- System administrator can customize home page
- 2 firmware versions for different regions using different default home pages
- Default homepage for USA: www.dlink.com
- Default homepage for other areas: www.dlink.co.uk

Authentication Policy
- 5 sets of management types (including 1 default management type) distinguished by postfix
- Postfix of default group can be omitted for users in default group
- Each management type can be associated with a Black List and an authentication database
- Users in a management type can belong to different user groups according to various pre-defined attribute-matching rules

Online User Monitoring
- Real-time monitoring tool containing following fields:
  User ID
  IP
  MAC address
  Packets In/Bytes In
  Packets Out/Bytes Out
  Idle time in seconds
- System administrator can logout online users individually from monitoring function

Off-line Usage History
- History file contains following fields:
  Start/End Time
  User ID
  IP
  MAC Address
  Packets In/Bytes In
  Packets Out/Bytes Out
- History log file can be periodically sent to system administrators in pre-defined time interval from 1 hour to 24 hours through email system
- Generated history log files can be kept maximum 4 days
- Customizable received administrator mail account and received history mail account
- History log accessible from specific IP address
- Local time display on history log

Web-Based Administration
SSL protected

Serial Console Management Functions
- Restore to factory default
- Change administrator's password
- Network debug utilities
- Device service status check

SSH Remote Management Functions
- Restore to factory default
- Change administrator's password
- Network debug utilities
- Device service status check

Remote Firmware Upgrade
Via a web-based administration UI

External SYSLOG
External SYSLOG server can store log data for DSA-5100.

Monitor IP List
- Using ICMP echo mechanism, DSA-5100 checks accessibility for all devices configured in Monitor IP List
- Maximum 40 sets of IP can be defined in Monitor IP List
- If any device in this list loses contact, DSA-5100 will send an alarm message to its system administrators via e-mail

SNMP Support
SNMP v.2c read-only access (basic MIBs only)

Welcome E-Mail Message
- Contains guidance to access DSA-5100
- This message will be sent when users try to receive e-mail before actually logged into DSA-5100 *

** Supports POP3 protocol*

DSA-5100

Technical Specifications

MAC/IP Pass-Through
Provides 100 sets of IP addresses and 100 sets of MAC addresses, which can bypass login procedure but still have all general user permissions applied

Idle Timeout
Provides different idle timeouts for guest groups

Sorry Page
- Mechanism to detect abnormal status of Internet connection and backend systems
- Displayed when WAN or external user database fails
- Sorry page will replace login page until abnormal status is recovered

Max Bandwidth Control
- Configurable bandwidth control to limit all groups
- Bandwidth control customizable by group in KB/MB per second (64KB, 128KB, 256KB, 512KB, 1MB, 2MB, 5MB, 10MB, unlimited)

Wizard Support
Setup wizard for easy system configuration

Specific User Account Support
- Provides manager account
- Can only access specific pages (e.g. Authentication Policies, Group Configuration, Black List Configuration, Guest User Configuration, Roaming Configuration, User Control, Upload File)
- If access to other pages attempted, system will display alarm message

Certificate to Upload
Provides upload customer key page and upload customer certificate page for user upload certificate

API Support
Provides API following attributes:
- Package size translated (in bytes)
- Timeout control
- Kick off users

Physical & Environmental

Power
110 to 240 VAC 50/60Hz
Internal universal power supply

Dimensions
425 mm (W) x 240 mm (D) x 44 mm (H) (device only)
19-inch rack-mount width, 1 U height

Weight
3.3kg (device only)

Operating Temperature
5 to 45 C

Storage Temperature
-25 to 55 C

Operating Humidity
5% to 95% non-condensing

EMI Certification
- FCC Class A
- CE Class A

Safety Approval
UL

ACN 052 202 838

Ordering Information

DSA-5100	4-Port AirSpot Gateway

D-Link®

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Germany	TEL: 49-6196-77990	FAX: 49-6196-7799300
France	TEL: 33-1-30238688	FAX: 33-1-30238689
Netherlands	TEL: 31-10-282-1445	FAX: 31-10-282-1331
Belgium	TEL: 32(0)2-517-7111	FAX: 32(0)2-517-6500
Italy	TEL: 39-2-2900-0676	FAX: 39-2-2900-1723
Iberia	TEL: 34-93-4090770	FAX: 34-93-4910795
Sweden	TEL: 46-(0)8564-61900	FAX: 46-(0)8564-61901
Norway	TEL: 47-23-897189	FAX: 47-22-309085
Denmark	TEL: 45-43-969040	FAX: 45-43-424347
Finland	TEL: 358-9-2707-5080	FAX: 358-9-2707-5081
Singapore	TEL: 65-6774-6233	FAX: 65-6774-6322
Australia	TEL: 61-2-8899-1800	FAX: 61-2-8899-1868
China	TEL: 86-10-5863-5800	FAX: 86-10-5863-5799
India	TEL: 91-022-2652-6696	FAX: 91-022-2652-8914
Middle East (Dubai)	TEL: 9714-3916480	FAX: 9714-3908881
Turkey	TEL: 90-212-289-5659	FAX: 90-212-289-7606
Egypt	TEL: 202-414-4295	FAX: 202-415-6704
Israel	TEL: 972-9-9715700	FAX: 972-9-9715601
Latin America	TEL: 56-2-232-3185	FAX: 56-2-232-0923
Brasil	TEL: 55-11-55039320	FAX: 55-11-55039322
South Africa	TEL: 27-1266-52165	FAX: 27-1266-52186
Russia	TEL: 7-095-744-0099	FAX: 7-095-744-0099#350
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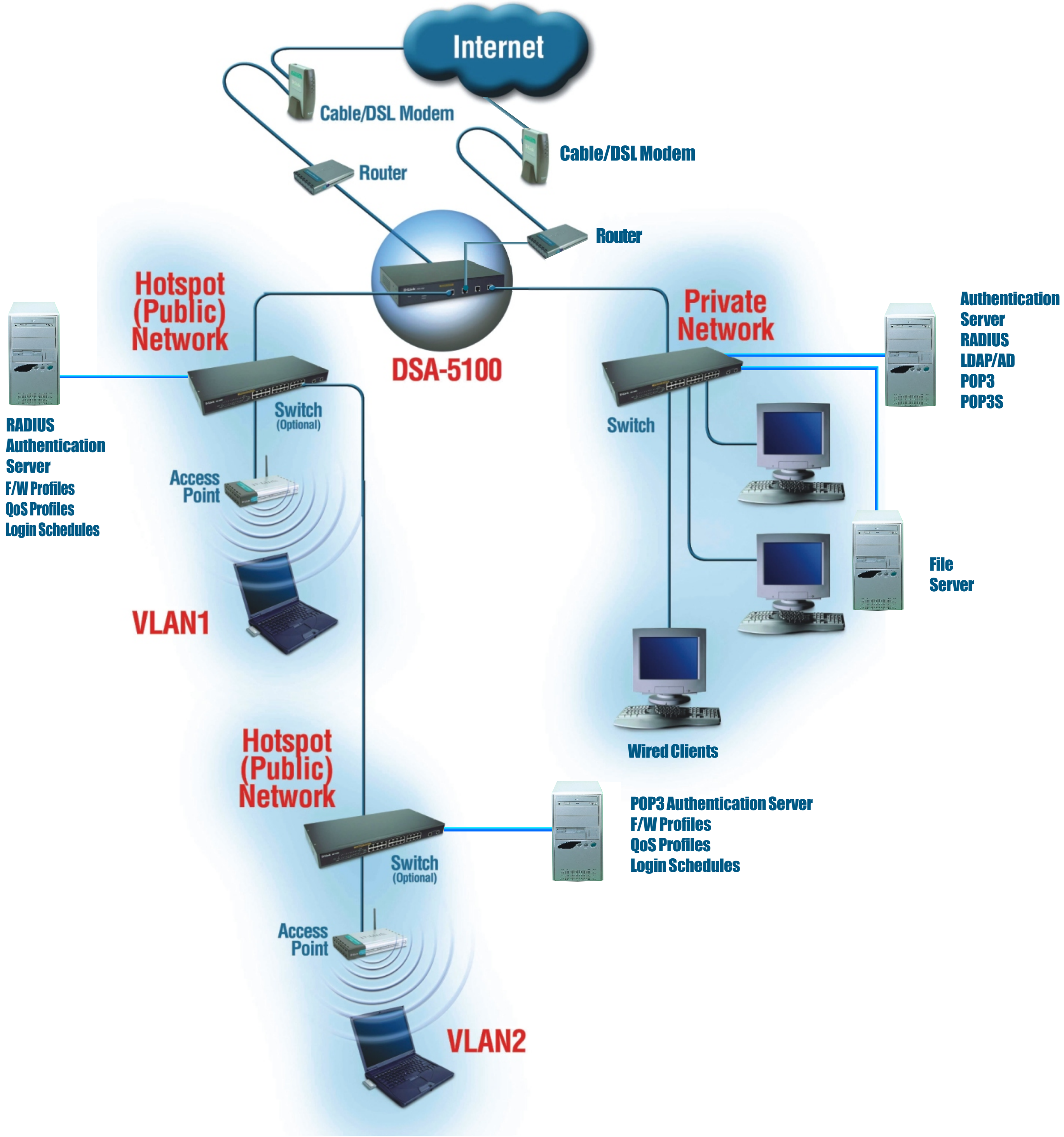

To cost-effectively double your Internet bandwidth, you can (1) connect both WAN ports of your AirSpot Gateway to two separate lower rate/lower charge broadband lines, then (2) allocate your users/servers' traffic to different WAN ports to create an even load balance.