EASY BOX SERVER

Brown's Enterprise Access SYstem (EASY) Box server

Networking for people on the move

The Brown's EASY Box is a secure, configurable networking platform for remote access. It manages all incoming VPN connections to your network. It adapts over many protocols and also acts as a firewall. With the Box in place, you can save costs by reducing the number of networks you have to support.

Applications in small and large organisations

The EASY Box server enables up to 1024 users to log on, with the new Smart VPN Server catering for small and medium sized enterprises who have a minimum of 10 users. Encrypted, authenticated and accounted access is provided to legacy systems, remote and mobile staff and branches.

The EASY Box connects to the Internet via synchronous link, and it provides secure remote access to the data centre via PSTN, ISDN, X.25 and mobile networks.

SNA encryption for IBM mainframes

With the Box in place, organisations with IBM-compatible mainframes or mid-range systems can deliver secure 3270 or 5250 access over the Internet.

Remote SNA users can access an IBM-style mainframe or midrange host with full protection at both ends.

First, the Brown's Box has a proven TCP/IP to SNA gateway and firewall. Second, remote users gain access to the system with a security token such as a Smart Card or challenge-response device. Third, the Box encrypts and authenticates SNA traffic destined for host systems over the Internet.

For SNA applications such as 3270 and 5250 terminal emulation, Brown's DNAccess software encrypts the SNA data and the encrypted request units are then tunnelled in IP. On reaching the Box an SNA proxy server strips off the outer wrapper of IP and decrypts the data. Unlike TN3270 implementations, Brown's DNROSE software supports LU6.2 and 3270 printing over the Internet.

The system can similarly encrypt data traffic over in-house LAN segments and over wide area public networks. As part of the overall process, the SNA data is first compressed, then encryption and finally authenticated.

Remote access security using the Internet as a virtual network

The Box can apply either 256-bit AES or 168-bit EDE Triple DES encryption at the interface to public networks to enable encrypted access across the Internet.

The VPN uses end-to-end encryption to carry your data safely through a secure tunnel over the Internet. It becomes a security barrier or firewall through which all WAN traffic must pass.

User management and firewall functions

The Brown's Box supports RADIUS accounting and authentication. All user log-on and log-off activity records can be sent to a standard RADIUS server or to Brown's own accounting and authenticating RADIUS-based server software, DNRACS.

DNRACS comes with a client package called DNManager to allow network administrators to create and manage user profiles, configure the Box and upload/download management files using FTP. The link between the PC based client and the server is securely encrypted so that only authorised administrators has access to the configuration data.

The Box also has a special server application, similar to DNRACS, for secure network management via the LAN.

Administrators can create, change or delete user profiles along with controlling their security and access rights. For example, by restricting access to mainframe and terminal-based server functions only. In addition, using IP packet filtering the Box can restrict user access to designated host servers.

Technical specifications

Capacity

The Smart VPN server supports 10 logged on users.

LAN connections

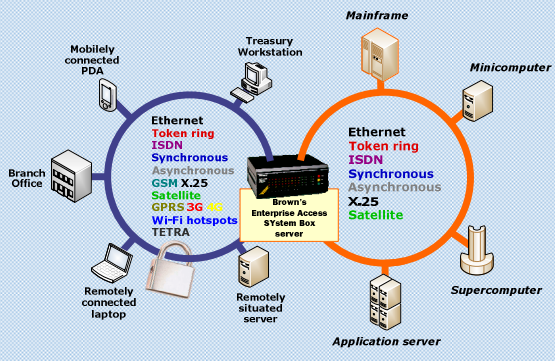
Two 1 Gbps/100 Mbps/10 Mbps Ethernet connections come as standard, one for the Internet and one for intranet connectivity. Token ring is an optional extra.

Throughput

30 mbps (megabits per second) at the intranet interface.

Options

- Supports up to 1024 logged on users.
- ISDN primary rate option available (up to 180 calls).
- Digital modem support (up to 180 calls – needs ISDN option.
- IBM SNA emulation available for s/390s and AS400s.
- DEC VT 100 support for ASCII host session.



Brown's Enterprise Access SYstem Box

DNROSE client software

Client platforms

- Microsoft Windows 2000 and XP.
- Windows CE v.3 (Pocket PC 2000, Pocket PC 2002, Pocket PC 2003 and HPC).

Hard disk

4mb on the laptop – about 0.5mb on the PDA.

Modems

Hayes-compatible or CAPI-2.

Hardware

Model Type
Series 8 Brown's Box and DNROSE version 1.0.

Main Processor, onboard memory and harddisk
Pentium M, 1.6 GHz / 1 Gigabyte / NO HARD DISK (firmware and variable data held in compact flash).

Network Interfaces
2 x 1 Gbps/100 Mbps/10 Mbps Ethernet (standard) / token ring (optional).

Form Factor
19inch wide, 4U high rack mounted or desk top / cPCI PICMG 2.6 backplane.

Operating System
100% proprietary OS, NOT a variant of, e.g., Linux.

Throughput
About 30 megabits per second of compressed and encrypted data at the intranet interface can be and sent to the Internet. Hardware accelerator available.

WAN Support
WAN and LAN support for the VPN / E1 lines (with ISDN and analogue calls) / X.25 lines / V.120, V.110 and PPP protocols supported.

Standards
Brown's Box: CE approved and built to FCC requirements. The Box and client software the process has started to ready the product for UK government use.

Appliance

Firewall Capabilites
Packet filtering is integrated. Up to 254 rule groups can be defined and each user classified as belonging to a group. Multiple rules can be defined for a group. Rules can also be defined for unqualified traffic at every interface. Filtering can specify IP address, port, protocol, and direction of traffic.

Redundancy
A second Box is recommended for critical applications. The absence of rotating media and the use of high quality parts mean that hardware failures are rare.

Availability and Load Balancing
HSRP is supported along with load balancing. Boxes operate in a group, monitor each other and direct new calls to the least loaded Box.

Protocol Conversion
Legacy conversions to SNA, ASCII and X.25 are available.

Connections
1024 concurrent connections can be supported by a single server.

New Connections
About 30 newly initialised connections can be established per second.

Integration

Strong User Authentication
RSA SecurID with ACE server and the lower-cost VASCO tokens are supported.

Authentication Server Support
VASCO token server support is integrated in the product. Other servers are supported via RADIUS. The Box will support multiple RADIUS servers and our own DNRACS authentication server supports primary and secondary operation. DNRACS is supported on MS Windows 2000 and XP

PKI / Certificate Management
Certificates can be acquired from external sources and also generated internally. Both installed with a manual process.

Load Balancing and Availability
Load balancing is automatic. HSRP failover is automatic but sessions on a failing server will be lost.

Monitoring
SNMP MIB is provided for the Box and our DNManager tool is able to view this and other critical Box states. Event logs and 24-hour usage levels are also displayed.

Management

Management Interface, Centralised Management
DNManager is a MS Windows 2000 / XP application. Administrators can use different instances of the same product at the same time with some restrictions. Simultaneous online editing of the same user profile is on a first come first served basis. The second editor will have their changes discarded.

Seperation of Duties
DNRACS can make usertable editing read only. In which case DNManager will grey the interface out. Administrators can be confined to editing user entries, the filtering tables or the Box configuration.

Authentication, Authorisation and Audit, Trails, Alarms and Reports
In addition to our DNRACS auditing, DNManager logs all Box events when it is running. The Box keeps a large buffer of these. The Box also generates SNMP traps. DNManager displays alarms in the Box status. DNRACS logs authentications. DNManager logs events.

Session Management and Internal Firewall Management
DNManager Box status can view active sessions and terminate individual or all sessions. DNManager can edit the packet filtering table offline only. New files becomes active on upload. A new feature has recently been added to allow blocked packets to be displayed and summarised.

Application Restrictions and Update Management
This can be provided on a custom basis. Brown's Box firmware files, configuration files, RADIUS configuration files and Allowed Routes configuration files would be uploaded via FTP over Brown's TLS 1.1 VPN, followed by a time-based or usage-based reset of the Box. Restrictions can apply.

VPN Connections

TLS Cipher Suites
TLS cipher suite 53 with a fallback to TLS cipher suite 10.

TLS Cipher Suites and Master Secret
- RSA 1024-bits (or greater) for key-exchange encryption
- 168-bit triple-DES in EDE mode with CBC for bulk encryption
- HMAC SHA-1 for MACs. 48-byte secret shared between client and server (and developed as part of the handshake protocol)

***Note**: TLS 1.1 is fully implemented*

Certificate Integration
Server certificates are installed in the Boxes to provide verification of server by client and CRLs are accessed via LDAP and shipped to client to speed up revocation checking as part of the TLS implementation.

Network Level TLS, TLS Extensions and Limitations of the VPN
Brown's proprietary protocol, referred to as BBMP, that carries the TLS 1.1 traffic within it, can flow either over TCP/IPv4 or UDP/IPv4. Private extensions are used for transporting CRLs to the client and for user authentication PINs or token codes. Session volume and time is monitored. If exceeded, the session is killed. Key re-negotiation is in plan.

TLS Session Re-use
The VPN engine preserves the TLS state but this is done privately at the network layer with our BBMP short-hold feature.

Compression
The VPN engine performs repeated character compression, a V.42bis-like repeated string compression and MIME compression. Furthermore, the engine compresses first and then encrypts to minimize the network traffic.

Integration

Dimensions

Width:	450 mm / 19 inches
Height:	183 mm / 4 U
Depth:	425 mm

Weight

Full chassis:	12 Kgs

Power consumption

Voltage:	100 to 132V a.c. or 176 to 260V a.c.
Power:	90 Watts typical
Frequency:	50 to 60 Hz

Temperature

Operating:	+10°C to 50°C +50°F to 122°F
Storage:	-40°C to 50°C -40°F to 122°F

Relative humidity
Non-condensing: 5% to 95%

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