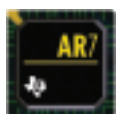


Product Brief

AR7 ADSL Network Support Package (NSP)



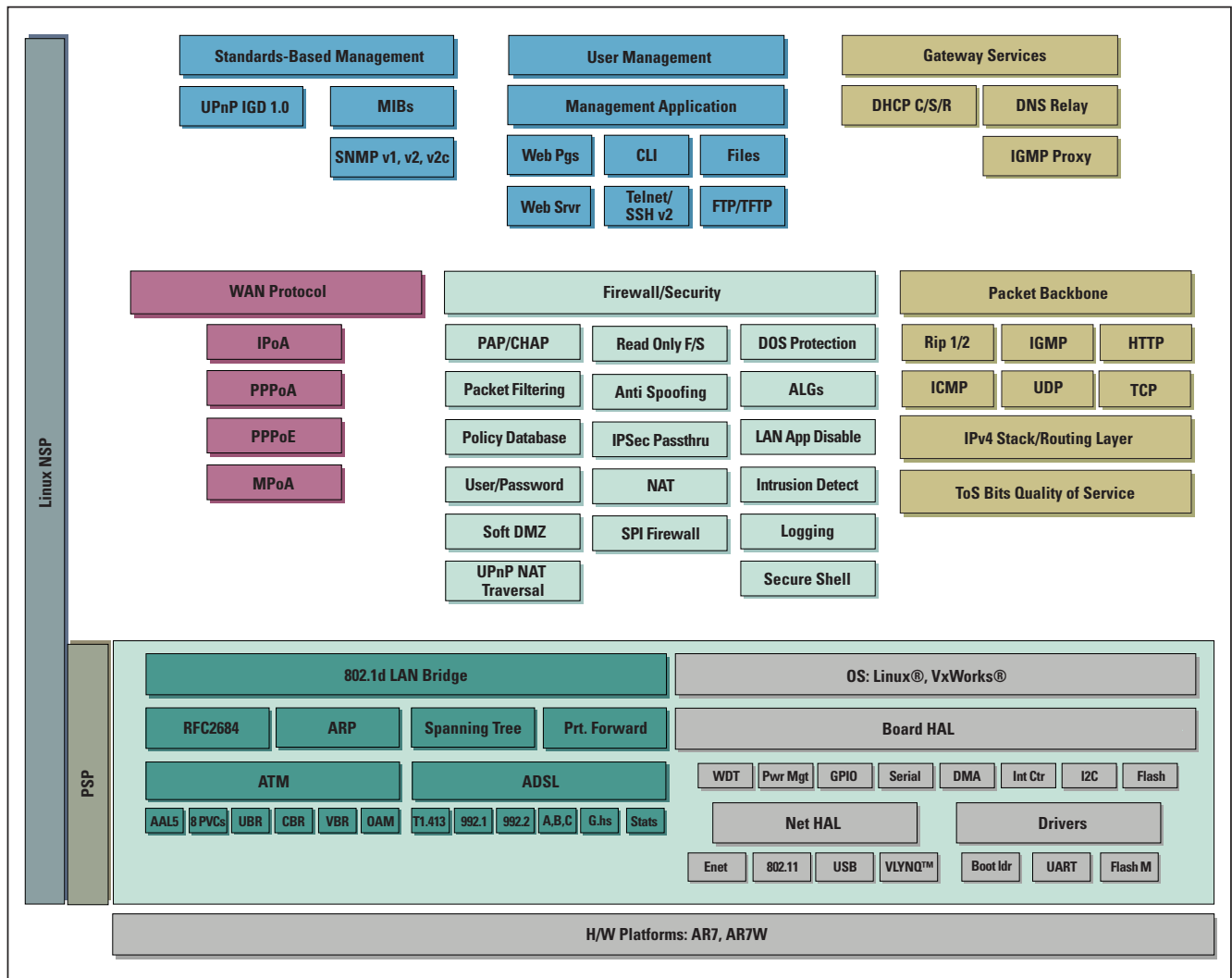
Texas Instruments' (TI) Network Support Package (NSP) is a Linux®-based router software stack for the AR7 customer premises ADSL reference design, providing all of the network protocols, bridging, gateway, routing and management features needed to quickly and easily design feature-rich customer premises modems. The NSP is a complete software package designed for single-port, Ethernet/ USB combination modems with an optimized architecture easily configured for high-volume deployments. Developed by Tology Software®, the NSP takes advantage of software core competencies to offer a field proven and highly interoperable solution to modem manufacturers worldwide. Three different configurations are available from a base router solution up to a high end router solution giving developers the right mix of features needed for their product.

Based on the Linux Kernel 2.4.17 from Monta Vista, the NSP is supported by a host of Monta Vista development tools, enabling manufacturers to easily integrate new code blocks on top of the existing NSP for additional router functionality. TI licenses the NSP to approved customers along with a comprehensive maintenance and support package to enable faster ramp to volume.

TI's AR7 product line provides a complete ADSL router reference design solution, from the network stack to the silicon. The NSP runs on TI's broadband communications processor which shares a common architecture with TI's other broadband products enabling the manufacturer additional flexibility and design reuse. Because it has been designed specifically for the AR7 processor, the NSP takes advantage of the advanced processing to provide the perfect platform for home networking.

Key Features:

- Linux®-based router stack optimized for the AR7 platform enabling addition of functional blocks for increased system differentiation
- TI's TurboDSL™ Packet Accelerator boosts multi-user network performance by 3X
- Included in AR7 Reference Design Package made up of the AR7 Evaluation Module, ADSL physical layer (PHY) firmware, device drivers, network processor drivers and network layer management software
- NAT/NAPT with support for basic Application Layer Gateways (ALGs)
- DNS Relay, Internet Protocol Stack
- RIP, Static Routing
- DSL Protocols:
 - PPPoE
 - PPPoA
 - RFC 2684
- SNMP
- ATM Quality of Service
- IP QoS ToS Bits
- LAN interfaces include single Ethernet and USB ports
- Supports bridging between Ethernet and USB port
- Web-based configuration with APIs for GUI customizations
- Stateful Inspection Firewall
- VPN, IPSEC passthru



The AR7 Network Support Package functional diagram

Router Software Stack Features			
ADSL/ATM Support		Gateway Services	
Modulations – T1.413 (i2) – G.992.1 (DMT) – G.992.2 (G.lite) – Annex A – Annex B – Annex I – Annex J – Annex L OAM – Respond to F4/F5 Loopback (Rx) – OAM AIS/RDI – OAM F4/F5 Ping (Tx) – OAM F4/F5 stats	Auto-negotiate mode Dying Gasp Line Statistics AAL5 8 PVCs VC QoS – UBR – CBR – VBR-nrt – VBR-rt	Packet Backbone – ICMP – ARP – RARP – UDP – TCP – Multicast – IPv4 – QoS – DHCP Client/Relay/Server – DNS Relay/Proxy – ToS Bits – IGMP Proxy	Bridging – 802.1d Bridge Routing – IP Forwarding – MAC Encapsulated – RIP v1/v2 – QoS Policies
Address Translation		Firewall/Security	
Basic NAT Bi-Directional NAT Static Port Mappings NAT policies upgradeable via Policy Database by User UPnP NAT Traversal	Application Layer Gateways – FTP – TFTP – H.323 Point to Point – PPTP and GRE – IRC – Talk	PPP PAP/CHAP Stateful Packet Inspection Firewall (SPI) – secure session management Packet filtering – enable/disable individual clients Extensive policy database: connection, servers, applications, game servers User and Password authentication Port Forwarding DMZ Toggle IPSEC passthru Toggle PPTP passthru Intrusion detection Denial of Service protection from common attacks IP and MAC spoofing protection Secure Shell (SSH) v2	
WAN Protocol		Other Features	
Protocols – RFC 2684 LLC Bridged – RFC 2516 PPP over Ethernet – Selective PPPoE keep alive mechanism – RFC 2364 LLC or Vx Mux PPP over ATM – RFC 1577 CLIP over ATM Topology Modes – Bridged connections – Routed dial-up connections with NAT – Routed dial-up connections without NAT – Bridged or routed connection over single VC – Bridged and/or routed connections over multiple VCs	LED API Software support for hardware reset to default POST (Flash warning LED) Manufacturing diagnostics Flash types: AMD, Intel, Atmel Enhanced diagnostics Auto detection of internal/external EMAC		
Network Management			
Management Applications – CLI Telnet (Remote and Local) – Web management/HTTP server – SNMP v1, v2 and v2c for four MIB II Groups <ul style="list-style-type: none"> • System • Interface Control Message Protocol (ICMP) • Internet Protocol (IP) • Interface 	– Syslog for logging and remote logging – UPnP (IGD 1.0) – 16-Discrete entry Access Control List (ACL) for management access	Flash ROM upgradeable Image disaster recovery User selectable logging Port 80 for local web access IPSEC/PPTP passthru GUI select Expanded test and diagnostics Detailed Statistics	

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