



## QorIQ® LS1 Processor Family

# QorIQ LS1043A Multicore Communication Processors NAS Application Solution Kit

The network attached storage application (NAS) application solution kit (ASK) for QorIQ LS1043A multicore communication processors shortens time-to-market and software design cycles for customers.

### TARGET APPLICATIONS

- ▶ Prosumer/Consumer network attached storage
- ▶ Media storage gateway

### OVERVIEW

NXP® offers a vertically integrated and comprehensive Linux®-based OpenWRT NAS ASK to OEMs and ODMs inclined to build multi-segment network products based on the QorIQ LS1043A communications processor. The field-hardened and feature-rich OpenWRT software package will enable customers to significantly shorten their software design cycle and achieve quicker time-to-market without compromising on quality or features.

The turn key software stack provides advanced hardware offloads and a rich set of RAID and file system support, secure storage and secure access of data, delivering best-in-class network attached storage (NAS) performance and allowing customers to free up CPU time. The OpenWRT NAS software, coupled with our QorIQ LS1043A communications processors, offers a high-performance, low-power and scalable platform that will help OEMs and ODMs meet the demanding needs of next-generation consumer or enterprise networks reliably and efficiently.

In addition to providing comprehensive software solutions, we offer commercial software support providing our customers with access to NXP's world-class support infrastructure and to new software releases as they become available. These new software releases include many key product updates and feature additions.

### QorIQ LS1043A SUPPORT PLAN OPTIONS

Support Level	Premium	Plus
Part numbers	LS1043A-SWSP-PRM	LS1043A-SWSP-PLS
New ASK software releases*	•	•
Assigned a voucher ID for software support issues	•	•
Access to test codes to facilitate early feature integration	•	•
Ability to request custom features	•	•
Software support hours included	250	100
Annual fee	\$50,000	\$25,000



## QorIQ LS1043A OPENWRT LINUX BSP AND APPLICATION SOLUTION KIT OVERVIEW

This package includes access to the source code of all the board support packages and OpenWRT NAS ASK and binaries of the packet forwarding engine. A list of supported third-party software ecosystem categories is shown below.

### Linux OpenWRT

- ▶ U-Boot
- ▶ BSPs
- ▶ Linux kernel ( 3.19)
- ▶ Linux file system
- ▶ Application drivers
- ▶ Binary for packet forwarding engine

### Networking Services

- ▶ TCP/UDP
- ▶ Ipv4
- ▶ RFC 2684 routed, bridged
- ▶ ICMP
- ▶ IP forwarding
- ▶ DNS
- ▶ IPerf
- ▶ RAID0/1/5/10 and JBOD

### Security

- ▶ SPI firewall
- ▶ OpenSSL

### Client/Server

- ▶ FTP
- ▶ HTTP
- ▶ Telnet
- ▶ SSH
- ▶ SAMBA
- ▶ NFS
- ▶ NTP

### QoS

- ▶ Classful and classless queuing
- ▶ Traffic shaping
- ▶ Rate limiting
- ▶ Ingress control
- ▶ Diff serv

### Fast Path Support

- ▶ TSO/LRO offload
- ▶ Scatter/gather
- ▶ RX/Tx checksum calculation
- ▶ MDMA XOR for RAID5
- ▶ Neon acceleration for RAID6

### Accessibility

- ▶ WEB GUI
- ▶ CLI
- ▶ Telnet
- ▶ SSH

The feature list is subject to change without prior notice at the sole discretion of NXP.

### Diagnostics

- ▶ TCPDump
- ▶ Cyclesoak

### Ordering part number:

LS1043A-SW-ASK (\$100,000)

### Part number includes:

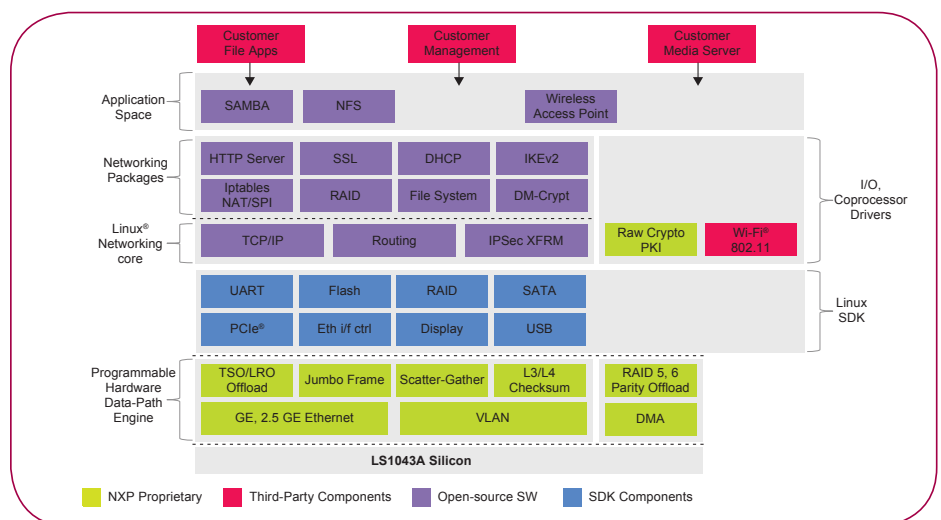
- ▶ Access to NAS software stack
- ▶ Access to binaries for PPFE
- ▶ NXP point-of-contact application engineer to resolve customer issues

## FEATURES

Features	Benefits
Programmable packet forwarding engine	Offloads NAS TSO & LRO operations to hardware; reduces CPU load
Hardware offloading	Application solution kit's hardware offloads deliver best-in-class NAS performance
Hardened OpenWRT distribution	More than six years of rigorous field tests and millions of deployments; hardened and mature software distribution reduces time-to-market
Flexible and optimized software architecture	Easy to port and integrate third-party software stacks; significantly reduces software design cycle and ensures ample headroom for run-time services even during peak performance
Highly optimized storage stack	SAMBA, NFS, HTTP, SSL, RAID 0, 1, 5, 6, JBOD Support
Software compatibility	Scalable software architecture and common code base across design for varying customer needs
Unmatched support	Commercial support packages gives customer direct access to R&D; get to production quickly

\*New software releases—regular updates to the QorIQ LS1043A software are made available via NXP production and patch releases.

## QorIQ LS1043A PROCESSOR NAS APPLICATION SOLUTION KIT BLOCK DIAGRAM



[www.nxp.com/LS1043\\_ASKNAS](http://www.nxp.com/LS1043_ASKNAS) and [www.nxp.com/partners](http://www.nxp.com/partners)

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