

# SOLIDserver™ Software Appliance Suite

## SOLIDserver™ Software Appliances

### **SOLIDserver™ 50**

*Designed for Network Services only (DNS-DHCP).*

### **SOLIDserver™ 170**

*Designed for Network Services only (DNS-DHCP).*

### **SOLIDserver™ 570**

*Designed for Management only or Network Services only (DNS-DHCP).*

### **SOLIDserver™ 1170**

*Designed for Management only or Network Services only (DNS-DHCP) or both.*

### **SOLIDserver™ 2270**

*Designed for Management only or Network Services only (DNS-DHCP) or both.*

### **SOLIDserver™ 3370**

*Designed for Management only or Network Services only (DNS-DHCP) or both.*

### **BLAST™ 4070 - 5070 - 5570**

*Designed for high performance and DNS security, large enterprises and ISPs.*

### **SOLIDserver™ 7070**

*Designed for large IPAM services with numerous objects to manage.*

The SOLIDserver™ suite of software appliances is designed to deliver high-performance DNS-DHCP-IPAM services, network automation, and user-to-application traffic routing. SOLIDserver™ provides vital benefits for the reliability, resiliency, and security of mission-critical network services and management.

Each software appliance runs on a range of hardware platforms and Virtual Machines (VM) to match requirements from small branch offices to the largest enterprises. SOLIDserver can be deployed as a standalone unit, in a high availability pair or distributed architecture managed centrally from a powerful and user-friendly web interface.

To fulfill each customer's specific needs and ensure flexible scalability, the EfficientIP's suite of software appliances includes 10 models with different levels of performance and targeting different roles.

## Software Appliance Network Service Sizing

SOLIDserver software includes multiple features and the sizing of each server can vary based on the role of the targeted appliance. The table below shows a typical performance indicator for each software appliance based on its DNS or DHCP services in the DDI infrastructure.

	Performance	
	DNS (QPS) <sup>(1)</sup>	DHCP (LPS) <sup>(2)</sup>
SDS-50	500	20
SDS-170	7,000	125
SDS-570	25,000	500
SDS-1170	50,000	1,000
SDS-2270	125,000	2,500
SDS-3370	250,000	6,000
SDS-7070	-	-
BLAST-4070	3,000,000	-
BLAST-5070	10,000,000	-
BLAST-5570	17,000,000	-

*(1) QPS: Queries per Second*

*(2) LPS: Leases per Second*

*Listed performance numbers were reached in a test environment and are conservative. Performance numbers in production may be different.*

## Software Appliance Usage and Feature Set

EfficientIP offers a large set of software appliances in order to cover various roles and capacity situations. Depending on the architecture of the network, the number of sites to cover, and the requested functionalities, the combination of appliances, running either on dedicated hardware platforms or virtual machines, may change. Each software appliance is supported with a committed capacity on each targeted role. When combining roles, the performance, and overall capacity may be impacted.

The virtual machine will be directly dependent on the hypervisor and the virtual server hardware it runs on. The two main impacts to consider are the storage and the network. With regards to CPU, most of the current virtual server hardware seen in the virtualization farms has enough power to handle most of the jobs. The storage system, either directly attached or on a storage array network, needs to be able to handle large volumes of input/output, mainly in the case of an IPAM service or DNS service with log enabled (query log or answer log). For the network part, the virtualization layers between the physical interface installed on the server and the one presented to the virtual server greatly impact performance. When the DNS Guardian engine is talking directly to the hardware on a DNS Blast appliance, the solution is capable of handling tens of millions of DNS queries per second, but on a virtualized system this number can go down to less than 2 million queries per second if the appropriate requirements are not properly applied.

For software appliances running on EfficientIP dedicated hardware platforms, there's no impact, as there is no need to tune the hypervisor infrastructure. This is why dedicated hardware platforms may be preferable when either high performance is required or when some network services (i.e. DNS, DHCP) are required for the virtual infrastructure to boot up.

## Recommended Roles by Software Appliances per Hardware Platform

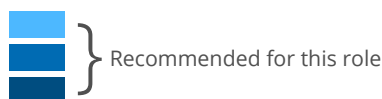
The following table presents the possible and recommended SOLIDserver roles for each software appliance per hardware platform.

	Virtual Machine			nano			small			medium			large			xtra		
SDS-50 <sup>1</sup>	NS																	
SDS-170	NS			NS			NS			NS			NS					
SDS-570	NS	MGT		NS			NS	MGT		NS	MGT		NS	MGT				
SDS-1170	NS	MGT	DDI				NS	MGT	DDI	NS	MGT		NS	MGT				
SDS-2270	NS	MGT	DDI							NS	MGT	DDI	NS	MGT				
SDS-3370	NS	MGT	DDI							NS			NS	MGT	DDI			
BLAST-4070	BLAST									BLAST			BLAST					
BLAST-5070													BLAST					
BLAST-5570													BLAST					
SDS-7070		MGT																MGT

**NS:** Network Services only - DNS / DHCP / GUARDIAN / BLAST

**MGT:** Management only - IPAM

**DDI:** Network Services + Management



*(1) SDS-50 is only available in software appliance format - Guardian is not available*

## Key Service Triggers

The number of users in the enterprise is not the only topology key. The number and type of software appliances required will also depend on the roles proposed. The main discriminants are:

- variety of devices connected to the network (IoT, BYOD, workstation, industrial equipment)
- number of remote locations with network infrastructure
- central and regional datacenters
- location of the applications, hosting variety, network flow complexity
- hosting of DNS for public domains
- service provision for external as well as internal users
- service redundancy level
- security protection required on the DNS service

## Software Appliances on VMs - Sizing and Requirements

	Performance		Virtual Machine Properties				
	DNS (QPS)	DHCP (LPS)	vCPU (min/max)	RAM (GB)	Virtual Disk (min GB)	Storage (min IOPS)	Network (min PPS)
<b>SDS-50 <sup>(1)</sup></b>	500	20	1 / 2	4	32	80	1,000
<b>SDS-170</b>	7,000	125	2 / 4	8	64	80	20,000
<b>SDS-270</b>	7,000	125	2 / 4	8	64	80	20,000
<b>SDS-570</b>	25,000	500	2 / 12	16	64	80	40,000
<b>SDS-1170</b>	50,000	1,000	2 / 12	16	128	160	80,000
<b>SDS-2270</b>	125,000	2,500	4 / 16	16	128	160	160,000
<b>SDS-3370</b>	250,000	6,000	8 / 20	32	128	160	300,000
<b>SDS-7070</b>	-	-	16 / 32	128	512	2000 <sup>(2)</sup>	300,000
<b>BLAST-4070</b>	3,000,000	-	8 / 20	32	128	160	3,000,000 <sup>(3)</sup>

(1) The SDS-50 virtual appliance requires a centralized management appliance for network services configurations (DNS & DHCP only).

(2) IOPS Bandwidth: 180 Mbps / 2000 IOPS Write / 10 ms max IO Latency

(3) Requires Intel X520 or X710 10GE Chipset in PCI Passthrough mode

## Software Appliance on Bare Metal - Hardware Sizing and Requirements

SOLIDserver software appliances can run on servers directly purchased from hardware vendors. Some rackable servers in the PowerEdge series from Dell are provided as an example. Here below is the recommended hardware sizing and requirements for SOLIDserver.

Example Dell Servers for SOLIDserver Appliance on Bare Metal						
	Dell PowerEdge	CPU	RAM (GB)	RAID Controller	Disk	Additional Eth Line Card
<b>nano</b>	R250	Intel Pentium G6405T	8	-	1* SATA 2TB 7.2K	Intel Ethernet i350 Quad Port 1GbE
<b>small</b>	R350	Intel Xeon E-2336 2.9GHz	32	PERC H355	2* SAS 600GB 10K	Intel Ethernet i350 Quad Port 1GbE
<b>medium</b>	R650XS	Intel Xeon Gold 5315Y	32	PERC H355	2* RAID1 480GB	Intel X710 Dual Port 10GbE SFP+
<b>large</b>	R650XS	Intel Xeon Gold 5315Y	64	PERC H355	2* RAID1 480GB	Intel X710 Dual Port 10GbE SFP+
<b>xtra</b>	R650XS	Intel Xeon Gold 5315Y	128	PERC H355	2* RAID1 480GB	Intel X710 Dual Port 10GbE SFP+

(1) Servers with 10GbE line cards are not provided with any SFP+ transceivers. They must be selected according to the customer's need from the Intel manufacturer list of compatible SFP+ for X710-DA2/DA4 (see [Compatible SFP+ Modules and Cables for Intel® Ethernet Server Adapter X710 Series](#))

## EfficientIP Hardware Platforms Characteristics

	Dimensions H*W*D	Weight	NIC (Ethernet)	PS	BTU/hr	Disk
nano	42.8 * 482 * 598.64 (mm)	12.48 (kg)	6 * 1 Gbps	1 * 450W AC	1,039	1
	1.68 * 18.97 * 23.56 (inch)	27.51 (lb)	RJ-45			
small	42.8 * 482 * 598.94 (mm)	13.14 (kg)	6 * 1 Gbps + 2 * 10 Gbps	2 * 350W AC	1,356	2
	1.68 * 18.97 * 23.58 (inch)	28.96 (lb)	RJ-45 + SFP+	hot swap		hot swap (RAID1)
medium	42.8 * 482 * 748.79 (mm)	18.62 (kg)	6 * 1 Gbps + 4 * 10 Gbps	2 * 600W AC / DC	1,356	2
	1.68 * 18.97 * 29.47 (inch)	41.05 (lb)	RJ-45 + SFP+	hot swap		hot swap (RAID1)
large	42.8 * 482 * 748.79 (mm)	18.62 (kg)	6 * 1 Gbps + 4 * 10 Gbps	2 * 600W AC / DC	1,356	2
	1.68 * 18.97 * 29.47 (inch)	41.05 (lb)	RJ-45 + SFP+	hot swap		hot swap (RAID1)
xtra	42.8 * 482 * 748.79 (mm)	18.62 (kg)	6 * 1 Gbps + 2 * 10/25 Gbps	2 * 800W AC / DC	1,356	4
	1.68 * 18.97 * 29.47 (inch)	41.05 (lb)	RJ-45 + SFP+	hot swap		hot swap (RAID10)

## Common Characteristics

<b>Form Factor</b>	1U
<b>Rack Rails Kit</b>	yes
<b>LCD Screen</b>	yes on the bezel
<b>Serial</b>	DB-9 (96008N1)
<b>Screen Attachment</b>	yes
<b>Light Out Of Band Management</b>	yes
<b>AC Adapter</b>	100-240V~ 50-60HZ 2-4.8A
<b>Operating Temperature</b>	10°C to 35°C 50°F to 95°F
<b>Storage Temperature</b>	-40°C to 65°C -40°F to 149°F
<b>Safety</b>	CE, CCC, C-Tick, EEA, EAC, FCC, GOST, ICES-003, RIAM, KCC, NEMKO, TUV-GS, UL/cUL, VCCI
<b>Environmental</b>	RoHS, WEEE
<b>Power Cord(s)</b>	C13/C14 cable(s) (One per PSU)

For additional network connectivity, a complementary line card can be added in hardware platforms based on EfficientIP price list (Intel line cards):

- quad ports 1Gb Ethernet copper RJ45:  
*for hardware platforms nano, small, medium, large, xtra*
- dual ports 10Gb Ethernet with SFP+ interface (optical module not provided):  
*for hardware platforms small*
- quad ports 10Gb Ethernet with SFP+ interface (optical module not provided):  
*for hardware platforms medium, large*
- dual ports 10/25Gb (Intel E810) Ethernet with SFP+ interface (optical module not provided):  
*for hardware platforms xtra*

Hardware platforms with 10Gbps line cards are not provided with SFP which can only be selected from Intel manufacturer list for line card model X710-DA2/DA4 (see [Compatible SFP+ Modules and Cables for Intel® Ethernet Server Adapter X710 Series](#))



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As one of the world's fastest growing DDI vendors, EfficientIP helps organizations drive business efficiency through agile, secure and reliable network infrastructures. Our unified management framework for DNS-DHCP-IPAM (DDI) and network configurations ensures end-to-end visibility, consistency control and advanced automation. Additionally, our unique 360° DNS security solution protects data confidentiality and application access from anywhere at any time. Companies rely on us to help control the risks and reduce the complexity of challenges they face with modern key IT initiatives such as cloud applications, virtualization, and mobility. Institutions across a variety of industries and government sectors worldwide rely on our offerings to assure business continuity, reduce operating costs and increase the management efficiency of their network and security teams.

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