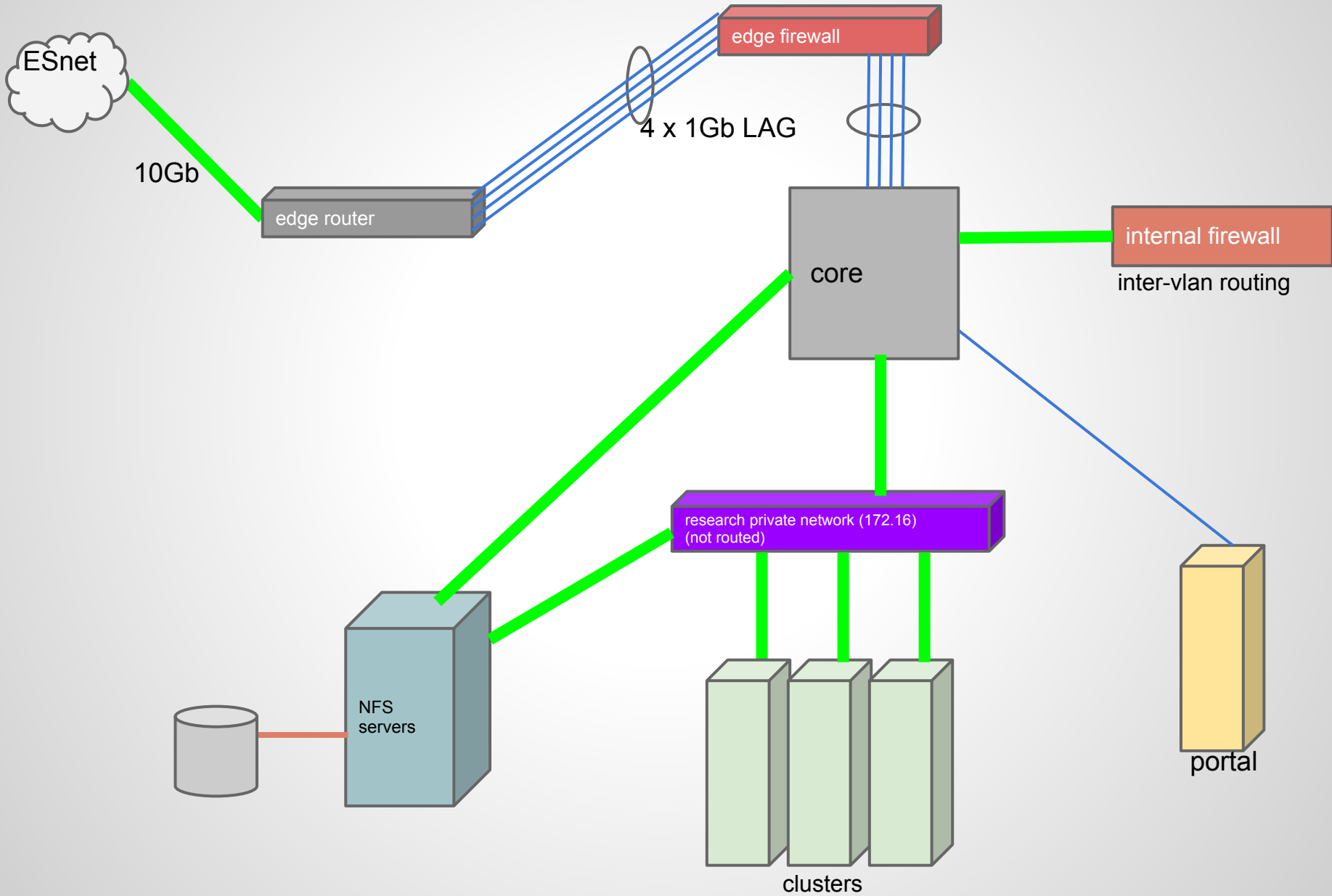
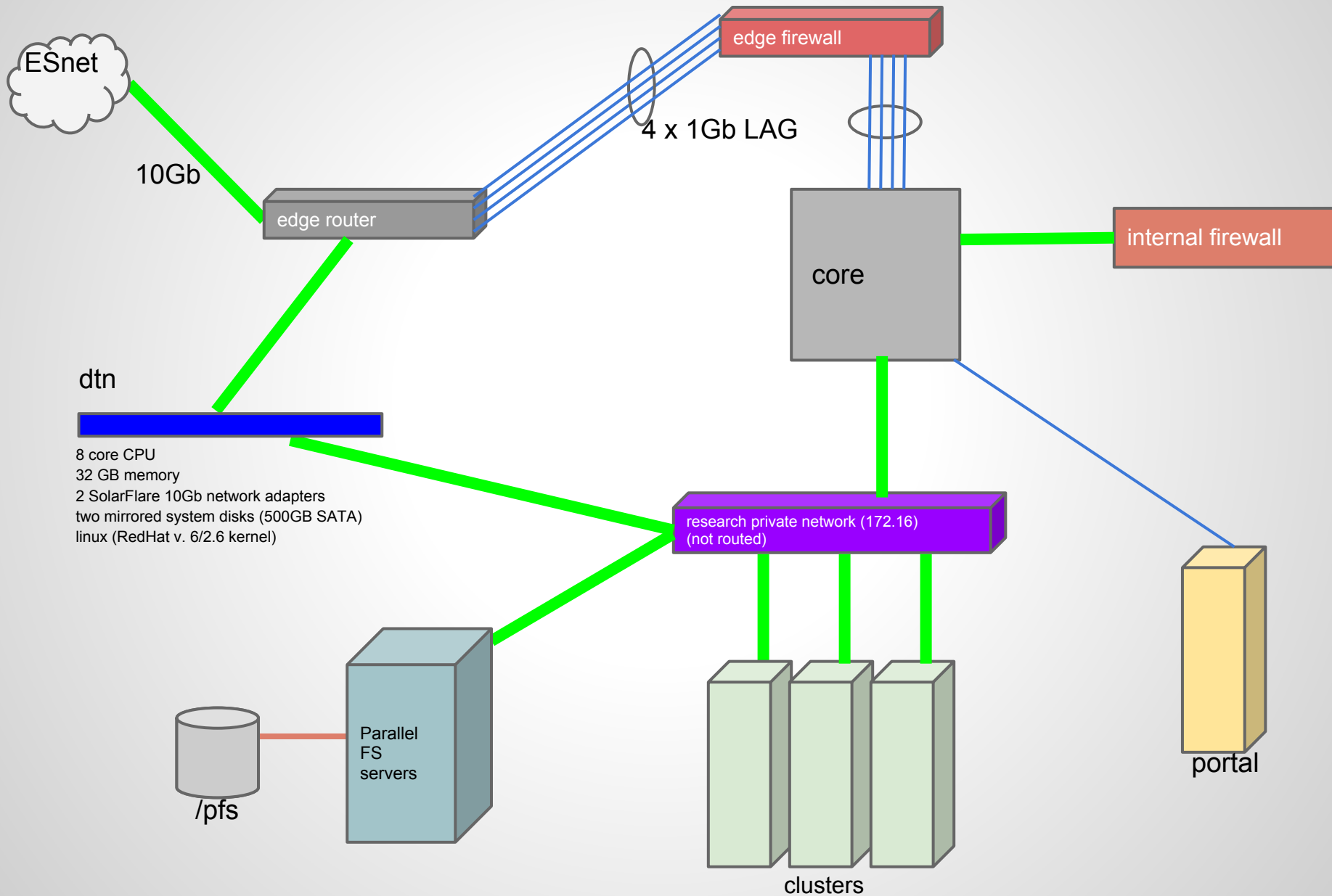


Current data path



Data Transfer Node (dtn) config



Transfer program	NIC Speed	source	destination	Size (MB)	MB/sec	Mbps	Elapsed (s)	Comments (PFS = Parallel File System)	Improvement
<i>PPPL to/from NERSC (before DTN)</i>									
scp (secure copy)	10Ge	Nersc (hopper)	PPPL portal	100	0.4	3.0	270.3	Through firewalls	
bbcp (large data copy)	10Ge	Nersc (hopper)	PPPL portal	100	1.1	8.8	90.9	Through firewalls	
<i>PPPL to/from NERSC (DTN to DTN)</i>									
scp	10Ge	Nersc dtn01	PPPL dtn01	100	6.0	48.0	16.7	PFS to local disk	1622%
scp	10Ge	PPPL dtn01	Nersc dtn01	100	8.7	69.6	11.5	Local disk to PFS	
bbcp	10Ge	Nersc dtn01	PPPL dtn01	100	5.2	41.6	19.2	PFS to local disk	473%
bbcp	10Ge	Nersc dtn01	PPPL dtn01	100	24.2	193.6	4.1	Quick repeat of the same test (cache work)	2200%
bbcp	10Ge	PPPL dtn01	Nersc dtn01	100	28.7	229.6	3.5	Local disk to PFS (great write perf at NERS)	
bbcp	10Ge	Nersc dtn01	PPPL dtn01	100	25.0	200.0	4.0	PFS to PFS	2273%
bbcp	10Ge	PPPL dtn01	Nersc dtn01	100	37.0	296.0	2.7	PFS to PFS	
bbcp	10Ge	Nersc dtn01	PPPL dtn01	100	151.0	1208.0	0.7	Mem fs to mem fs (no disk bottleneck)	13727%
bbcp	10Ge	PPPL dtn01	Nersc dtn01	100	382.0	3056.0	0.3	Mem fs to mem fs (no disk bottleneck)	
<i>PPPL to/from KSTAR fusion facility (before DTN)</i>									
bbcp	1Ge	PPPL portal	KSTAR portal	100	0.3	2.4	333.3	Through firewalls to KSTAR IPSEC VPN	
<i>PPPL to/from KSTAR fusion facility (DTN/FTP)</i>									
bbcp	10Ge	PPPL dtn01	KSTAR kgftp	100	3.3	26.4	30.3	local disk to local disk	1100%
bbcp	1Ge	KSTAR kgftp	PPPL dtn01	100	2.8	22.4	35.7	local disk to local disk	
bbcp	10Ge	PPPL dtn01	KSTAR kgftp	100	3.7	29.6	27.0	Mem fs to mem fs (no disk bottleneck)	1233%
bbcp	1Ge	KSTAR kgftp	PPPL dtn01	100	3.4	27.2	29.4	Mem fs to mem fs (no disk bottleneck)	
<i>Goal for physics community is 40MB/sec transfer</i>									