

BILL OF MATERIALS AND COST ESTIMATES



BOM

Description	Details	QTY	Unit \$	Total \$	Running Total	Notes	Specific Concerns
Open Access Environment							
DELL POWEREDGE R630 SERVER or equivalent Host servers for PROXMOX environment	2x XEON 12 CORE E5 w/128 DDR4 plus Quad 1Gbps and 10Gbps NICs (Broadbcom)	3	\$2,950	\$8,850	\$8,850	Typically order refurbished with 5 YR Warranty from ITCREATIONS - Pricing is based on this relationship	PROXMOX support may be desired and cost up to \$3,000 per year. Known issues with Intel 10 Gbps NIC cards not correctly supporting vlan trunks, use Broadcom NICs.
Storage Array: Synology UC3200 w/ 48 TB minimum Array for PROXMOX environment	Plus Dual port 10Gbps NIC min.	1	\$10,750	\$10,750	\$19,600	Units that have not previously used require work development work to validate required functionality.	
Storage Array Switching 10 Gbps required 2x for redundancy +1 for OA facing ports	EntryPoint E530-24T8X or equivalent	1	\$1,390	\$1,390	\$20,990	No specific functionality required outside of layer 2 switching.	Easily substituted.
Open Access Orchestration Environment Mangement Switch(s)	EntryPoint E530-48T8X or equivalent	1	\$1,514	\$1,514	\$22,504	No specific functionality required outside of layer 2 switching.	Easily substituted
Dell EMC R440 or equivalent PROXMOX environment backup server	Need HDD space w/10Gbps	1	\$3,850	\$3,850	\$26,354	Typically order refurbished with 5 YR Warranty from ITCREATIONS - Pricing is based on this relationship	Easily substituted
Fiber Store DAC cables or equivalent	10 Gbps passive (up to 5m)	10	\$20	\$200	\$26,554	Attention to switches used required when ordering.	Easily substituted
Core Network Equipment							
Cisco 920 router or equivalent	One per OA network instance	1	\$3,000	\$3,000	\$3,000	Management Network Router	this may be a lower quantity if we get a router with more interfaces. 1 interface = 4096 customers
WTI Console Server(s)	3 or 4 per geographic location	10	\$3,616	\$36,160	\$39,160	Out of Band Console Management	39 usable ports
Management Switch(es)	3 or 4 per geographic location	10	\$1,514	\$15,140	\$54,300		48 usable ports
CAT6 Cables	For Console + Management	870	\$7	\$6,090	\$60,390		
Centec E680-48X8C	Provider Edge (100 Gbps to 10 Gbps)	2	\$4,995	\$9,990	\$70,380	Service Provider Edge	At least one Provider Edge (PE) piece of equipment will be required at any location a service provider 'plugs' into the network. usually located in core location
FS DAC cables	100 Gbps passive (3m)	4	\$32	\$128	\$70,508	Provider Edge to Core DAC	
EntryPoint E680-32C	Core (100Gbps)	2	\$7,995	\$15,990	\$86,498	Redundant Core Equipment	usually located in core location
FS DAC cables	100 Gbps passive (3m)	10	\$32	\$320	\$86,818	Core to Top Of Rack DAC	
FS QSFP28	QSFP28-100G-BX20	12	\$2,300	\$27,600	\$114,418		Optics for diverse 100GB node connections
EntryPoint E680-48X8C	Top Of Rack (TOR - 100 Gbps to 10 Gbps)	10	\$4,995	\$49,950	\$164,368	Top Of Rack (TOR) equipment	Three per geographic location based on 55000 into 3 locations
FS DAC cables	10 Gbps passive (up to 5m)	320	\$20	\$6,400	\$170,768	TOR to Access DAC	
EntryPoint E530-48S4X	Access (10 Gbps to 1 Gbps)	320	\$1,595	\$510,400	\$681,168	Access ports based on supporting 4,000 1 Gbps customer installations	
Shipping	Best Estimate	1	\$50,000	\$50,000	\$731,168	Shipping costs for Network Equipment	
Miscellaneous Cables and cords	Best Estimate		\$10	\$0	\$731,168	Fiber jumpers and cables to support equipment connections	
CPE Hardware Installed in the field (7,500 customers)							
FS SFP	SFP-GE-BX	15000	\$12	\$180,000	\$180,000	Access Optics (one side)	
FS SFP	SFP-GE-BX	15000	\$16	\$240,000	\$420,000	Access Optics (one side)	
FS Patch Cable	3m (10ft) LC UPC to LC UPC Simplex	15000	\$3	\$43,500	\$463,500	from patch panel to switch	
Venoen Desktop Network Appliance, includes WiFi Capability	H1-J1900 SFP i225V	15000	\$240	\$3,600,000	\$4,063,500	Customer Premise Equipment (CPE)	This is the base price for a unit that provides up to 1GB data transfer and meets all specified requirements of Superior. Other options are available that offer additional features.
WiFi Mesh Equipment (Optional)	Predicted costs to add WiFi Mesh	15000	\$90	\$1,350,000	\$5,413,500	Under Development	This is a predicted future cost as this improvement is not currently available but in development.

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SaaS & NOC Services

Feature/Service Name	Description	Unit Cost	Unit	Pricing Term	Supported vendors/software/integrations	
F1	(F) Subscriber view, ISP view, and network operator view of platform	The platform currently provides web pages designed for all stakeholders; subscribers, providers, and operators to view and manage their roles and relationships within the system. The platform restricts their access to their ownership.	Included in the monthly \$2.50 per subscriber fee.	Per Subscriber (residential, commercial, or any end point installation)	For the term of the Contract.	Functionality internal to the system. See the hardware sheet for more detail.
F2	(F) Customer-initiated enrollment in services	The platform currently provides web pages to present available service options and allow subscribers to subscribe, provision, and test new IP services from the marketplace.	Included in the monthly \$2.50 per subscriber fee.	Per Subscriber (residential, commercial, or any end point installation)	For the term of the Contract.	Functionality internal to the system. See the hardware sheet for more detail.
F3	(F) Customer can add/remove services autonomously (without Vendor or service provider involvement)	The platform currently provides web pages to present available service options and allow subscribers to subscribe and unsubscribe to IP services in the marketplace without requiring assistance or intervention.	Included in the monthly \$2.50 per subscriber fee.	Per Subscriber (residential, commercial, or any end point installation)	For the term of the Contract.	Functionality internal to the system. See the hardware sheet for more detail.
F4	(F) Multiple ISPs able to service a single location using the same CPE	The platform allows for as many services to be subscribed to as there are physical ports on the CPE. The most common CPE used has four (4) ports allowing for four (4) separate services to be delivered on the same CPE. Physical port slicing is also possible.	Included in the monthly \$2.50 per subscriber fee.	Per Subscriber (residential, commercial, or any end point installation)	For the term of the Contract.	Functionality internal to the system. See the hardware sheet for more detail.
F5	(F) Platform integration with ACP eligibility verification	ACP benefit is paid directly to providers. Platform can identify ACP compliant options. Payment between ACP service provider and operator would be a business transaction that would need to be agreed to in advance. The platform can support this functionality.	Included in the monthly \$2.50 per subscriber fee.	Per Subscriber (residential, commercial, or any end point installation)	For the term of the Contract.	Functionality internal to the system. See the hardware sheet for more detail.
F6	(F) Capable of servicing up to 125,000 customers	The platform is capable of supporting more than 125,000 customers. EntryPoint would recommend the installation of a second hardware environment once more than 25,000 subscribers are connected to create redundancy. Load can be monitored and hardware added as needed.	Included in the monthly \$2.50 per subscriber fee.	Per Subscriber (residential, commercial, or any end point installation)	For the term of the Contract.	Functionality internal to the system. See the hardware sheet for more detail.
F7	(F) Marketplace offering automated enrollment in additional services such as television, telephone, medical, smart home, alarm systems, cyber security, etc.	The platform provides categorized services in a marketplace view similar to Amazon or Google. The platform is capable of adding any number of IP services and presenting them in the marketplace.	Included in the monthly \$2.50 per subscriber fee.	Per Subscriber (residential, commercial, or any end point installation)	For the term of the Contract.	Functionality internal to the system. See the hardware sheet for more detail.
F8	(F) Point-to-point and point-to-multi-point private 'circuits' between locations	This functionality is native to the platform. The specific interactions and dependencies required on the part of the providers of private circuits will need to be agreed upon and documented by Superior as part of implementation.	Included in the monthly \$2.50 per subscriber fee.	Per Subscriber (residential, commercial, or any end point installation)	For the term of the Contract.	Functionality internal to the system. See the hardware sheet for more detail.
F9	(F) Platform two-way integration with utility billing solution	User data maintained in the system can be exported as a file which could be 'pushed' into a billing system to create monthly billings, or specific APIs could be created to support these interactions. This should be negotiated as a part of contract award.	Functionality included in monthly \$2.50 fee, setup would be a one time cost.	Per Subscriber (residential, commercial, or any end point installation)	For the term of the Contract.	Expected integrations to include CSV file export, import and APIs as designed to support third party billing providers.
F10	(F) Platform integration with fiber asset management solution	User and equipment data is maintained in the system and could be used as hyperlinks to access fiber management platforms, or specific APIs could be created to support these interactions. This should be negotiated as a part of contract award.	Functionality included in monthly \$2.50 fee, setup would be a one time cost.	Per Subscriber (residential, commercial, or any end point installation)	For the term of the Contract.	Expected integrations to includesimple hyperlinks and potential APIs as designed to support third party asset management systems.
F11	(F) Platform integration with trouble ticket solution	Alarming and notifications are included. Creating processes to push an alarm or notification into a ticketing system as a new ticket could be accomplished through an API. This should be negotiated as a part of contract award.	Functionality included in monthly \$2.50 fee, setup would be a one time cost.	Per Subscriber (residential, commercial, or any end point installation)	For the term of the Contract.	Expected integrations to include API calls into third party ticketing systems to create new tickets based on triggers set within the platform.
F12	(F) Platform integration with network management/monitoring solution	The platform is intended to provide these functions. If additional needs are identified, EP would suggest adding those items to the development road map.	Included in the monthly \$2.50 per subscriber fee.	Per Subscriber (residential, commercial, or any end point installation)	For the term of the Contract.	Included using RABBIX, but could also support other third party options such as Open NMS, and CACTI. The pros and cons of these options could be discussed and documented as a part of final contract award.
F13	(F) Platform integration with a managed WiFi service or ability to provide end user managed WiFi	Providers are already offering managed WiFi using the platform. Integrating the WiFi hardware into the CPE is in progress as a part of platform development. Specific details and requirements should be negotiated and agreed upon as a part of final contract award.	Functionality included in monthly \$2.50 fee, setup could be a one time cost depending.	Per Subscriber (residential, commercial, or any end point installation)	For the term of the Contract.	Included in the current development roadmap. Expected delivery in 12 to 18 months. Could be expedited or designed specifically for Superior if negotiated as a part of final contract award.
S1	(S) Network Operations Center professional services	Tier 2 support is offered as an option. This support is intended to provide support beyond the initial call placed to the provider. A provide who cannot resolve a problem would call for support. This NOC would also dispatch local support if necessary.	Offered as an additional service as an additional monthly \$2.50 per subscriber.	Per Subscriber (residential, commercial, or any end point installation)	For the term of the Contract.	Offered today by internal EP operations.
S2	(S) Professional services	EP offers project management and consulting services as needed or requested by clients. EP offers a wide variety of consulting and management services. Superior's need could be negotiated and included as a part of final contract award.	Offered at an hourly rate or based on project needs as a 'not to exceed' contract amount.	Offered as requested by the client, typically by the hour or project.	For the term of the Contract.	Offered today by internal EP operations.

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5-Year Cost Projection

Assumes: 1 year planning, 2 year build, 15,000 total subscribers and 5% annual growth after initial build.

Year	Month	Total Subscribers	Monthly SaaS Fee (\$2.50 per Subscriber per Month)	Monthly NOC Fee (\$2.50 per Subscriber per Month - Optional)	Automated Billing (\$0.25 per Transaction - Optional)	Total Fees
YEAR 1						
	Month 1	-	\$0.00	\$0.00	\$0.00	\$0.00
	Month 2	-	\$0.00	\$0.00	\$0.00	\$0.00
	Month 3	-	\$0.00	\$0.00	\$0.00	\$0.00
	Month 4	-	\$0.00	\$0.00	\$0.00	\$0.00
	Month 5	-	\$0.00	\$0.00	\$0.00	\$0.00
	Month 6	-	\$0.00	\$0.00	\$0.00	\$0.00
	Month 7	-	\$0.00	\$0.00	\$0.00	\$0.00
	Month 8	-	\$0.00	\$0.00	\$0.00	\$0.00
	Month 9	-	\$0.00	\$0.00	\$0.00	\$0.00
	Month 10	-	\$0.00	\$0.00	\$0.00	\$0.00
	Month 11	-	\$0.00	\$0.00	\$0.00	\$0.00
	Month 12	-	\$0.00	\$0.00	\$0.00	\$0.00
YEAR 2						
	Month 1	625	\$2.50	\$2.50	\$0.25	\$3,281
	Month 2	1,250	\$2.50	\$2.50	\$0.25	\$6,563
	Month 3	1,875	\$2.50	\$2.50	\$0.25	\$9,844
	Month 4	2,500	\$2.50	\$2.50	\$0.25	\$13,125
	Month 5	3,125	\$2.50	\$2.50	\$0.25	\$16,406
	Month 6	3,750	\$2.50	\$2.50	\$0.25	\$19,688
	Month 7	4,375	\$2.50	\$2.50	\$0.25	\$22,969
	Month 8	5,000	\$2.50	\$2.50	\$0.25	\$26,250
	Month 9	5,625	\$2.50	\$2.50	\$0.25	\$29,531
	Month 10	6,250	\$2.50	\$2.50	\$0.25	\$32,813
	Month 11	6,875	\$2.50	\$2.50	\$0.25	\$36,094
	Month 12	7,500	\$2.50	\$2.50	\$0.25	\$39,375
YEAR 3						
	Month 1	8,125	\$2.50	\$2.50	\$0.25	\$42,656
	Month 2	8,750	\$2.50	\$2.50	\$0.25	\$45,938
	Month 3	9,375	\$2.50	\$2.50	\$0.25	\$49,219
	Month 4	10,000	\$2.50	\$2.50	\$0.25	\$52,500
	Month 5	10,625	\$2.50	\$2.50	\$0.25	\$55,781
	Month 6	11,250	\$2.50	\$2.50	\$0.25	\$59,063
	Month 7	11,875	\$2.50	\$2.50	\$0.25	\$62,344
	Month 8	12,500	\$2.50	\$2.50	\$0.25	\$65,625
	Month 9	13,125	\$2.50	\$2.50	\$0.25	\$68,906
	Month 10	13,750	\$2.50	\$2.50	\$0.25	\$72,188
	Month 11	14,375	\$2.50	\$2.50	\$0.25	\$75,469
	Month 12	15,000	\$2.50	\$2.50	\$0.25	\$78,750
Year 4						
	Month 1	15,063	\$2.50	\$2.50	\$0.25	\$79,081
	Month 2	15,126	\$2.50	\$2.50	\$0.25	\$79,412
	Month 3	15,189	\$2.50	\$2.50	\$0.25	\$79,742
	Month 4	15,252	\$2.50	\$2.50	\$0.25	\$80,073
	Month 5	15,316	\$2.50	\$2.50	\$0.25	\$80,409
	Month 6	15,380	\$2.50	\$2.50	\$0.25	\$80,745
	Month 7	15,444	\$2.50	\$2.50	\$0.25	\$81,081
	Month 8	15,508	\$2.50	\$2.50	\$0.25	\$81,417
	Month 9	15,573	\$2.50	\$2.50	\$0.25	\$81,758
	Month 10	15,638	\$2.50	\$2.50	\$0.25	\$82,100
	Month 11	15,703	\$2.50	\$2.50	\$0.25	\$82,441
	Month 12	15,768	\$2.50	\$2.50	\$0.25	\$82,782
Year 5						
	Month 1	15,834	\$2.50	\$2.50	\$0.25	\$83,129
	Month 2	15,900	\$2.50	\$2.50	\$0.25	\$83,475
	Month 3	15,966	\$2.50	\$2.50	\$0.25	\$83,822
	Month 4	16,033	\$2.50	\$2.50	\$0.25	\$84,173
	Month 5	16,100	\$2.50	\$2.50	\$0.25	\$84,525
	Month 6	16,167	\$2.50	\$2.50	\$0.25	\$84,877
	Month 7	16,234	\$2.50	\$2.50	\$0.25	\$85,229
	Month 8	16,302	\$2.50	\$2.50	\$0.25	\$85,586
	Month 9	16,370	\$2.50	\$2.50	\$0.25	\$85,943
	Month 10	16,438	\$2.50	\$2.50	\$0.25	\$86,300
	Month 11	16,506	\$2.50	\$2.50	\$0.25	\$86,657
	Month 12	16,575	\$2.50	\$2.50	\$0.25	\$87,019

5 YEAR INVESTMENT = \$1,488,071

SaaS	\$	1,417,213
NOC	\$	1,417,213
Automated Billing	\$	141,721