Project Name: Commercial Cloud - Checkpoint Redesign Project ID: TS8186CR

Leadership	Group: Info	rmation Technology	Steering Co	ommittee		
Department	: Information	Technology		Division: Tech	nical Systems a	nd Networking
Project Spo	nsor: Bridg	et Kravchenko	Date Req	uested: 9/11/2018	PM Custom	er No. 186
Request Ty	pe: New Dev	/elopment				
IT Team Na	me: SEP			IT Team No: T		
Project Mar	nager/Leade	r: Mahesh Parab				
Account Number:	17030	Account Description:	Technica Networkir	Systems and	Customer Name:	Information Technology
Grant Fund	ed? No	<u> </u>		Mandate? No		

Project Goal

To redesign security architecture for the Checkpoint Firewalls in the Commercial AWS Cloud so that security posture of the environment is improved.

Business Objective

Configure and set up the Check Point infrastructure in the Commercial AWS Cloud environment.

Major Deliverables

- Design for the CheckPoint firewall in the Commercial Cloud.
- EA tech review approval.
- Checkpoint management console and smartevent.
- Firewall blades comprehended in the design: IPS, App/URL, and Threat Management.
- Inspection at ingress and egress traffic points

Approach

 InfoSec and EA team to set up the Check Point infrastructure in the AWS Commercial Cloud environment.

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Research & Analysis

Gartner Research Recommendation

Not conducted. The project is part of the <u>strategy</u> developed with Coalfire for the Cloud environment.

Benefits

See Return on Investment (ROI) Analysis Document

Impact

Number of Users IT Divisions IT

Leadership Groups IT Steering Committee

Risk

Business Environment Low - Little or no impact to existing business processes.

Technical Environment Medium - Previously implemented technologies with new

aspects and/or new requirements.

Assumptions

Staffing IT Staffing: resources will be available for the hours indicated per the attached

project plan.

Other Staffing: additional staffing will be available as follows:

Role:	<u>Name</u>	Hours per Day
Project Sponsor	Bridget Kravchenko	As needed
EA Stakeholder	EJ Widun	As needed
Apps Stakeholder	Tammi Shephard	As needed
Internal Services	Janette McKenna	As needed
Stakeholder		
CLEMIS Stakeholder	Jeff Nesmith	As needed

Facilities

Project Name: Commercial Cloud - Checkpoint Redesign Project ID: TS8186CR

None

Technical

- Separate appliances will be used to inspection at ingress and egress traffic points
- The design would support a dedicated VPC and instances will span 2 Availability Zones
 (AZ-A and AZ-B) with the load balancer managing the traffic to each side for failover
 availability. Ideally the architecture design would comprehend network model leveraging
 high availability by utilizing autoscaling and/or a clustered model.
- Availability of a VPC in the AWS Commercial Cloud environment for setting up the Check Point security architecture.

Funding

ullet

Other

 The size estimates are based on assumption to replicate the Checkpoint design delivered in the TT8186CP GovCloud - Checkpoint Implementation project in the Commercial Cloud environment.

Priority

Constraints

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Exclusions

 Migration of workloads in the Commercial AWS cloud to the new Checkpoint environment delivered in this project.

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Project Name: Commercial Cloud - Checkpoint Redesign Project ID: TS8186CR

PROJECT PHASE AUTHORIZATION

Phase(s): All		
Total Estimated Application Services	Hours:	
Total Estimated Technical Systems	Hours: 264	
Total Estimated CLEMIS	Hours:	
Total Estimated Internal Services	Hours:	
IT Application Services Division Manager Approval:		Date:
IT Technical Systems Division Manager Approval:		Date:
IT CLEMIS Division Manager Approval:		Date:
IT Internal Services Division Manager Approval:		Date:
IT Management Approval:		
Approved: Yes	No	Date:
Reason:		
Project Sponsor Approval:		
Title:		Date:
PROJECT SUMI	MARY	
Authorized Development (see above)	Hours: 264	
Proliminary Ectimated Dayalonment for Future Phases	Hours.	

Hours: 264

Grand Total Estimated Development

Cost: \$43,560

Project Name: Commercial Cloud - Checkpoint Redesign Project ID: TS8186CR

PROJECT COMPLETION AUTHORIZATION

Customer Acceptance of Product:	
Title:	Date:
Project Office Review:	Date:

Commercial Cloud - Checkpoint Redesign - Size Estimate (+/- 10% to 50%)

1	Туре	ID	Task Name	Estimated	Estimate Notes
2				Hours	
3	Phase	000000	PROJECT ADMINISTRATION	95	
4	Phase	100000	Commercial Cloud CheckPoint	169	
5				264	

Project Summary

Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Benefits/Savings:											
Tangible Benefits Subtotal:	303,000	13,000	712,000	182,000	26,000	26,000	26,000	26,000	26,000	26,000	1,366,000
Cost Avoidance Subtotal:	858,196	570,821	1,057,262	785,653	529,439	1,299,651	793,503	940,339	785,653	663,503	8,284,019
Costs:											
Development Services Subtotal:	1,160,519	179,126	166,080	0	0	0	0	0	0	0	1,505,725
Hardware Subtotal:	795,105	338,842	302,178	302,178	302,178	455,538	338,842	302,178	302,178	302,178	3,741,394
Software Subtotal:	340,241	282,254	274,103	274,103	274,103	274,103	282,254	274,103	274,103	274,103	2,823,471
Infrastructure Subtotal	161,461	161,461	161,461	161,461	161,461	161,461	161,461	161,461	161,461	161,461	1,614,606
Training Subtotal:	0	0	0	0	0	0	0	0	0	0	0
Other Subtotal:	0	248	0	0	0	0	248	0	0	0	497
Annual Statistics:											
Annual Total Savings	1,161,196	583,821	1,769,262	967,653	555,439	1,325,651	819,503	966,339	811,653	689,503	9,650,019
Annual Total Costs	2,457,325	961,931	903,822	737,742	737,742	891,102	782,805	737,742	737,742	737,742	9,685,693
A ID to the first	(4.000.400)	(070.440)	005.440	000 044	(400,000)	104 540	00.000	000 507	70.044	(40,000)	(05.075)
Annual Return on Investment	(1,296,130)	(378,110)	865,440	229,911	(182,303)	434,549	36,698	228,597	73,911	(48,239)	(35,675)
Annual Costs/Savings Ratio	211.62%	164.76%	51.08%	76.24%	132.82%	67.22%	95.52%	76.34%	90.89%	107.00%	
Project Cumulative Statistics:											
Cumulative Total Savings	1,161,196	1,745,017	3,514,279	4,481,932	5,037,371	6,363,021	7,182,524	8,148,863	8,960,516	9,650,019	9,650,019
Cumulative Total Costs	2,457,325	3,419,257	4,323,078	5,060,820	5,798,562	6,689,663	7,472,468	8,210,210	8,947,952	9,685,693	9,685,693
Ourseleties Determ on lessesteres	(4.000.400)	(4.074.040)	(000,000)	(570,000)	(704.404)	(200.040)	(000.044)	(04.047)	40.504	(25.675)	(25.075)
Cumulative Return on Investment	(1,296,130)	(1,674,240)	(808,800)	(578,888)	(761,191)	(326,642)	(289,944)	(61,347)	12,564	(35,675)	(35,675)
Cumulative Cost/Savings Ratio	211.62%	195.94%	123.01%	112.92%	115.11%	105.13%	104.04%	100.75%	99.86%	100.37%	100.37%
Year Positive Payback Achieved									Year 9		Year 9
State or Federal Mandate?											
Signatures:											
Benefits Reviewed By Project Sponsor				Date:							
Costs (including IT Resources) Reviewed											
By Information Technology Project				5 .							
Manager				Date:							

Return on Investment Analysis

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		Budget					nu															
	Project Savings	Category/Fundi	Unit				al															
Benefit/Savings Description	Category	ng Source	Desc	Units	Rate per Unit	Total Savings	Mu Y1	Y2	Y3	Y4 \	Y5	Y6	Y7	Y8	Y9	Y10	Y1	Y2	Y3	Y4	Y5	Y6
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Gain the understanding of cloud	Intangible	Services &																				
computing and infrastructures	Benefit	Ntwkg				0																
		Technical				Ŭ		+			_											
Gain new and improved OC Cloud	Intangible	Services &																				
standards	Benefit	Ntwkg				0																
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Establish Goals and Objectives for Cloud	Intonaible	Services &																				
implementations	Benefit	Ntwkg				0																
implementations	Benefit	Ntwkg				0		4			_											ļ
Cloud Program - TT6186CP		Technical																				
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reducing enterprise pricing @ renewal	Cost Avoidance	Ntwkg	EA	1	29,705	29,705			х	х х	< x	(х	Х	Х	х			29,705.00	29,705.00	29,705.00	29,705
Cloud AD - TT6186AD		Technical						1			T											
Allows cloud connections for on-prem	1	Services &	l]			1			- 1											
applications	Intangible Benefi		l			0		1								l						
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		Technical					-	1														
	lasta a adia la																					
Davida and CAN	Intangible Benefit	Services &																				
Pay as you go servers and SAN	Benefit	Ntwkg						4			_											
Deferral of Maintenance and Upgrades		Technical																				
for Hardware and Storage to IAAS	Intangible	Services &																				
provider	Benefit	Ntwkg																				
		Technical																				
Unlimited resource scalability for servers	Intangible	Services &																				
and storage	Benefit	Ntwkg																				
Cloud Program - TT6186CP		Technical																				
Capital Equipment Plan Savings based		Services &																				
on budget reductions.	Tangible Benefit	Ntwka	EA	1	0	1,132,000	x		x	x							290,000.00		686,000.00	156,000.00	0.00	
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Cloud Program - TT6186CP		Technical																				
Intrusion Detection System with 24 by 7		Services &	l																			
monitoring by an outside firm.	Benefit	Ntwkg	EA								_											
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Cloud Refresh -																						
Separation of Dev/QA from production		Technical																				
which increases the availability of	Intangible	Services &																				
production	Benefit	Ntwkg	EA																			
Cloud Connect - TT6186NC																						
Checkpoint allows greater functionality			l]			1			- 1											
and capabilities than Fire Eye, including			l					1								l						
a single pane of glass, already supported			l					1								l						
in the environment, and minimal work to		Technical	l					1								l						
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implementing a new solution.	Deligiir		 		 		-	+-	\vdash		+					<u> </u>						
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Return on Investment Analysis

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Cloud Connect - TT618NC Cost Avoidance Services &	Packetshaper Maintenance	Cost Avoidance	,	ANN	1	15,803	15,803		Х	Х	Х	Х	Х	Х	Х	Х	Х		15,803	15,803	15,803	15,803	15,803
Cost Avoidance Niskég ANN 1 193,000 x x x x x x x x x 40,219 40,219 40,219																							
Technical Tech																							
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Cloud Connect - TT6188NC Free Per Gigmann Cards Coet Avoidance Niving EA	Fire Eye Annual Maintenance	Cost Avoidance	Ntwkg	ANN	1	40,219	40,219		х	х	х	х	х	х	х	х	х		40,219	40,219	40,219	40,219	40,219
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Return on Investment Analysis

				1	1	ı						Affort	s Project F	2013					Potential Savi	ngs Extension		
			1		 		An	1	1	1	1 1	Allect	s Froject P	l l	1				Foteritiai Savi	iiyə Exterision	•	
1		Budget					nu															1
	Project Savings						al															
Benefit/Savings Description	Category	ng Source	Desc	Units	Rate per Unit	Total Savings	Mu Y	1 Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y1	Y2	Y3	Y4	Y5	Y6
Cloud Program - TT6186CP		Technical																				1
SSD and additional disk- Bubble capacity		Services &																				ı İ
cost avoidance	Cost Avoidance	Ntwkg	EA	1	236,248	236,248	Х	-	<u> </u>	1		Х					236,248					236,248
Cloud Brown TT6196CD		Tankainal																				
Cloud Program - TT6186CP Y1 - 2 Microsoft Server License - Bubble		Technical Services &																				1
capacity & data center cost avoidance	Cost Avoidance	Ntwka	EA	1	41,772	41.772	.,	.,									41,772	41.772				ı İ
Cloud Program - TT6186CP	Cost Avoidance	INIWKG	LA	'	41,772	41,772	Х	X	1	1							41,772	41,772				
Y3 - 10 Microsoft Server License -		Technical																				ı İ
Bubble capacity & data center cost		Services &																				ı İ
avoidance	Cost Avoidance	Ntwkg	EA	2	41,772	83,544			v	v	v	v	v	v	Y	v			83,544	83,544	83,544	83,544
Cloud Program - TT6186CP	Cootytvoidanioo	Technical			41,772	00,044			Ŷ	Ŷ	^	^	^	^	^	r l			00,044	00,044	00,044	00,044
Backup (Avamar) - License bubble		Services &																				1
capacity cost avoidance	Cost Avoidance	Ntwkg	EA	1	16,380	16,380	х		x			х		x			16,380		16,380			16,380
Cloud Program - TT6186CP	_	Technical			-,	-,													-,			
VM Ware License - Bubble capacity cost		Services &																				
avoidance	Cost Avoidance	Ntwkg	EA	1	134,064	134,064	х		х	х		х	х		х	х	134,064		134,064	134,064		134,064
		Technical																				
Cloud Program - TT6186CP	Tangible	Services &																				, ,
_	-																					
LaserFiche (Imaging) Offset	Benefit	Ntwkg	EA					4		4												
		Technical																				
Cloud Program - TT6186CP	Intangible	Services &																				
Oracle License for Clarity	Benefit	Ntwkg	EA	12			x	x	x	x	x	x					0	0	0	0	0	0
,		Technical						+	1	1												
CL 12 TTC10CCD																						
Cloud Program - TT6186CP	Intangible	Services &																				
Storage Gateway Savings Vignette	Benefit	Ntwkg	EA	12			Х	Х	Х	Х	Х	Х					0	0	0	0	0	0
		Technical																				
Cloud Program - TT6186CP	Intangible	Services &																				
Oracle Upgrade for Clarity	Benefit	Ntwkg	EA	12			¥	¥	×	v	¥	v					0	0	0	0	0	0
				12			^	^	^	^	^	Λ					· ·	U	Ü	· ·	O I	
Cloud Program - TT6186CP		Technical																				
Y1 - 2 Power costs of the bubble	Tangible	Services &																				
hardware	Benefit	Ntwkg	EA	1	13,000	13,000	Х	х									13,000	13,000				
Cloud Program - TT6186CP		Technical																				
Y3 - 10 Power costs of the bubble	Tangible	Services &			1																	, !
hardware	Benefit	Ntwkg	EA	1	26,000	26,000			V	V	I, I	v	v		v	V			26,000	26,000	26,000	26,000
nar awar c	Denent	INCANE	LA	-	20,000	20,000		-	^	+	^	^	^	^	^	^			20,000	20,000	20,000	20,000
Cloud Program - TT6186CP		Technical			1																	, ,
Resiliency - Improved resiliency by the	Intangible	Services &			1																	, ,
cloud model vs our two data centers	Benefit	Ntwkg	EA		1		x	×	x	x	x	x										, ,
Cloud Program - TT6186CP		Technical	1	<u> </u>			<u> </u>	Ť	Ť	Ê	1	ř	1		1	1						$\overline{}$
Improved DR on premise in a full disaster	Intangible	Services &			1																	, !
we run in a degraded state	Benefit	Ntwkg	EA		ĺ				1						1							1
Wo Tull III a degraded state	DOMESTIC	rativing			 			-	1	+	\vdash		 		 							\vdash
Cloud Program - TT6186CP		Technical			1																	, ,
Nimbleness (e.g.(Clarity Oracle started	Intangible	Services &			1																	, ,
	Benefit	Ntwkg	EA		1																	, ,
	·					l .		-	•	•									- L			

Return on Investment Analysis

												Affects	Project F	ROI?					Potential Sav	rings Extension	s	
Benefit/Savings Description	Project Savings Category	Budget Category/Fundi ng Source	Unit Desc	Units	Rate per Unit	Total Savings	nu al Mu Y1	Y2	2 Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y1	Y2	Y3	Y4	Y5	Y6
Cloud Refresh - Automation: At the end of Phase 2, server builds are scripted so the 8 hour task reduces to less than 1 per server so you save \$1176 per server build (but we cannot claim a hard dollar savings)	Cost Avoidance	Technical Services & Ntwkg	EA	1,464	147	215,208		x	x	x	x	x	x	x	x	x		215,208	215,208	215,208	215,208	215,208
Cloud Program - TT6186CP DB Expense Reductions - Having Cloud opens the possibility of exploring additional/less expensive DB options compared to Oracle and SQL. Today we spend about \$200,000 per year in SQL Licensing. (ITB)	Intangible Benefit	Technical Services & Ntwkg	EA																			
Refresh - Autoscaling: At the end of Phase 2, we will begin Autoscaling, which will further reduce costs but cannot be estimated until the end of that Phase	Intangible Benefit	Technical Services & Ntwkg	EA																			
Cloud Program - TT6186CP Improved citizen engagement models: It will empower us to use APIs and begin connecting disparate apps and giving a better citizen experience	Intangible Benefit	Technical Services & Ntwkg	EA																			
Cloud Program - TT6186CP In Cloud we have separation between dev/qa/prod as well as apps/DB/Mangement/Security Services. We do not have this on premise and the fix on premise is a network redesign or implement NSX on the VM Environment or Implement McAfee ENS Firewall	Intangible Benefit	Technical Services & Ntwkg	EA																			
Cloud Program - TT6186CP Containerization - With Cloud, we will be able to leverage containerization for custom built apps that are migrated	Intangible Benefit	Technical Services & Ntwkg	EA																			

Return on Investment Analysis

Benefit/Savings Description	Project Savings Category	Y 7	Y8	Y9	Y10
Gain the understanding of cloud computing and infrastructures	Intangible Benefit				
Gain new and improved OC Cloud standards	Intangible Benefit				
Establish Goals and Objectives for Cloud implementations	Intangible Benefit				
Cloud Program - TT6186CP SQL License Cost Avoidance by reducing enterprise pricing @ renewal	Cost Avoidance	29,705	29,705	29,705	29,705
Cloud AD - TT6186AD Allows cloud connections for on-prem applications	Intangible Benefit				
Pay as you go servers and SAN	Intangible Benefit				
Deferral of Maintenance and Upgrades for Hardware and Storage to IAAS provider	Intangible Benefit				
Unlimited resource scalability for servers and storage	Intangible Benefit				
Cloud Program - TT6186CP Capital Equipment Plan Savings based on budget reductions.	Tangible Benefit				
Cloud Program - TT6186CP Intrusion Detection System with 24 by 7 monitoring by an outside firm.	Intangible Benefit				
Cloud Refresh - Separation of Dev/QA from production which increases the availability of production	Intangible Benefit				
Cloud Connect - TT6186NC Checkpoint allows greater functionality and capabilities than Fire Eye, including a single pane of glass, already supported in the environment, and minimal work to upgrade as opposed to procure and fully implementing a new solution.	Intangible Benefit				
Cloud Connect - TT6186NC Radware Infrastructure	Cost Avoidance	110,000			

Return on Investment Analysis

Benefit/Savings Description	Project Savings Category	Y 7	Y8	Y 9	Y10
Cloud Connect - TT6186NC					
Radware Maintenance	Cost Avoidance	7,400	7,400	7,400	7,400
Cloud Connect - TT6186NC					
Packetshaper Infrastructure	Cost Avoidance		150,000		
Cloud Connect - TT6186NC					
Packetshaper Maintenance	Cost Avoidance	15,803	15,803	15,803	15,803
Cloud Connect - TT6186NC					
Fire Eye Upgrade (10GB)	Cost Avoidance				
Cloud Connect - TT6186NC Fire Eye Annual Maintenance	Cost Avoidance	40,219	40,219	40,219	40,219
riie Eye Aimuai Maintenance	Cost Avoidance	40,219	40,219	40,219	40,219
Cloud Connect - TT6186NC					
Fire Eye Gigamon Cards	Cost Avoidance	20,000			
Cloud Connect - TT6186NC AT&T ISP Connection Services (2					
Drivers @\$3,091.97 *12 months)					
(updated per AT&T email with revised					
rate) Cloud Connect - TT6186NC	Cost Avoidance	74,207	74,207	74,207	74,207
C1-ASR1001-HX/K9 Routers (2)					
Replacement at EOL 2021. (*Prices					
reflects an 66% discount per Presidio	Cost Avoidance			104,380	
contract. \$307,000 Total List Price)	Cost Avoidance			104,360	
Cloud Connect - TT6186NC C1-ASR1001-HX/K9 Routers					
Maintenance (2) at EOL 2021. (*Prices					
reflects a 40% discount with a 5yr					
Maintenance agreements per Presidio contract. \$28,568 Total List Price)	Cost Avoidance	17,141	17,141	17,141	17,141
Cloud Connect - TT6186NC	000171101001100	17,141	17,141	17,141	17,141
C1-ASR1001-HX/K9 Routers Advanced					
Enterprise License (2) at EOL 2021 - No discount	Cost Avoidance			16,650	
Cloud Connect - TT6186NC	Cost / Woldaniec			10,030	
SFP Module (8) (*Prices reflects an 80%					
discount per Presidio contract. \$5,600 Total List Price)	Cost Avoidance			1,120	
Tutai List FIICe)	Cost Avoidance			1,120	
Cloud Refresh - TT8186CR					
AWS billing costs avoided by acquiring					
Park My Cloud tool and enhancing spin up/spin down strategy	Cost Avoidance	46,212	46,212	46,212	46,212
5,		,- 12	, - 12	,212	
Cloud Program - TT6186CP					
2 FX2s - Bubble capacity cost avoidance	Cost Avoidance		244,520		

Return on Investment Analysis

Benefit/Savings Description	Project Savings Category	Y7	Y8	Y 9	Y10
Cloud Program - TT6186CP					
SSD and additional disk- Bubble capacity					
cost avoidance	Cost Avoidance				
Cloud Program - TT6186CP					
Y1 - 2 Microsoft Server License - Bubble					
capacity & data center cost avoidance	Cost Avoidance				
Cloud Program - TT6186CP	Cost Avoidance				
Y3 - 10 Microsoft Server License -					
Bubble capacity & data center cost					
avoidance	Cost Avoidance	83.544	83.544	00.544	83.544
	Cost Avoidance	83,544	83,544	83,544	83,544
Cloud Program - TT6186CP					
Backup (Avamar) - License bubble	04 4:		40.000		
capacity cost avoidance	Cost Avoidance		16,380		
Cloud Program - TT6186CP					
VM Ware License - Bubble capacity cost avoidance	Cost Avoidance	404.004		404.004	404.004
avoidance	Cost Avoidance	134,064		134,064	134,064
Cloud Program - TT6186CP	Tangible				
LaserFiche (Imaging) Offset	Benefit				
Claud Burgary TTC10CCB					
Cloud Program - TT6186CP	Intangible				
Oracle License for Clarity	Benefit				
Cloud Program - TT6186CP	Intangible				
Storage Gateway Savings Vignette	Benefit				
Storage dateway savings vigilette	Donom				
Cloud Program - TT6186CP	Intangible				
Oracle Upgrade for Clarity	Benefit				
Cloud Program - TT6186CP					
Y1 - 2 Power costs of the bubble	Tangible				
	-				
hardware	Benefit				
Cloud Program - TT6186CP					
Y3 - 10 Power costs of the bubble	Tangible				
hardware	Benefit	26,000	26,000	26,000	26,000
	Schene	20,000	20,000	20,000	20,000
Cloud Program - TT6186CP					
Resiliency - Improved resiliency by the	Intangible				
cloud model vs our two data centers	Benefit				
Cloud Program - TT6186CP	Intensible				
Improved DR on premise in a full disaster					
we run in a degraded state	Benefit				
Cloud Program - TT6186CP					
· ·	Intensible				
Nimbleness (e.g.(Clarity Oracle started	Intangible Benefit				
working in the new environment in days	Dellelli				

Return on Investment Analysis

	Project Savings				
Benefit/Savings Description	Category	Y7	Y8	Y9	Y10
Cloud Refresh -					
Automation: At the end of Phase 2,					
server builds are scripted so the 8					
hour task reduces to less than 1 per					
server so you save \$1176 per server					
build (but we cannot claim a hard	Cost				
dollar savings)	Avoidance	215,208	215,208	215,208	215,208
-					
Cloud Program - TT6186CP					
DB Expense Reductions - Having Cloud					
opens the possibility of exploring					
additional/less expensive DB options compared to Oracle and SQL. Today we					
spend about \$200,000 per year in SQL	Intangible				
Licensing. (ITB)	Benefit				
Refresh -					
Autoscaling: At the end of Phase 2, we					
will begin Autoscaling, which will further					
reduce costs but cannot be estimated	Intangible				
until the end of that Phase	Benefit				
Cloud Program - TT6186CP					
Improved citizen engagement models: It					
will empower us to use APIs and begin					
connecting disparate apps and giving a	Intangible				
better citizen experience	Benefit				
Cloud Program - TT6186CP					
In Cloud we have separation between dev/ga/prod as well as					
apps/DB/Mangement/Security Services.					
We do not have this on premise and the					
fix on premise is a network redesign or					
implement NSX on the VM Environment	Intangible				
or Implement McAfee ENS Firewall	Benefit				
Cloud Program - TT6186CP					
Containerization - With Cloud, we will be					
able to leverage containerization for	Intangible				
custom built apps that are migrated	Benefit				

Savings Summary

Benefit/Savings Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Tangible Benefit:											
Cloud Program - TT6186CP											
Capital Equipment Plan Savings based on											
budget reductions.	290,000	0	686,000	156,000	0	0	0	0	0	0	1,132,000
Cloud Program - TT6186CP											
Y1 - 2 Power costs of the bubble hardware	13,000	13,000	0	0	0	0	0	0	0	0	26,000
11 21 ower costs of the bubble flatuware	13,000	13,000	- 0	U	U	0	U	U	- 0	U	20,000
OL LD TTG40G0D											
Cloud Program - TT6186CP											
Y3 - 10 Power costs of the bubble hardware	0	0	26,000	26,000	26,000	26,000	26,000	26,000	26,000	26,000	208,000
Cloud Program - TT6186CP											
LaserFiche (Imaging) Offset	0	0	0	0	0	0	0	0	0	0	0
Cloud Program - TT6186CP											
Oracle License for Clarity	0	0	0	0	0	0	0	0	0	0	0
Cloud Program - TT6186CP											
Storage Gateway Savings Vignette	0	0	0	0	0	0	0	0	0	0	0
Cloud Program - TT6186CP											
Oracle Upgrade for Clarity	0	0	0	0	0	0	0	0	0	0	0
Tangible Benefits Subtotal:	303,000	13,000	712,000	182,000	26,000	26,000	26,000	26,000	26,000	26,000	1,366,000
Cost Avoidance:											
Cloud Refresh - TT8186CR											
AWS billing costs avoided by acquiring Park											
My Cloud tool and enhancing spin up/spin											
down strategy	46,212	46,212	46,212	46,212	46,212	46,212	46,212	46,212	46,212	46,212	462,118
Cloud Program - TT6186CP			*	·		•	·				
2 FX2s - Bubble capacity cost avoidance	244,520	0	244,520	0	0	244,520	0	244,520	0	0	978,080
Cloud Program - TT6186CP											
SSD and additional disk- Bubble capacity											
cost avoidance	236,248	0	0	0	0	236,248	0	0	0	0	472,496

Return on Investment Analysis

Savings Summary

Benefit/Savings Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Cloud Program - TT6186CP											
Y1 - 2 Microsoft Server License - Bubble											
capacity & data center cost avoidance	41,772	41,772	0	0	0	0	0	0	0	0	83,544
Cloud Program - TT6186CP											·
Y3 - 10 Microsoft Server License - Bubble											
capacity & data center cost avoidance	0	0	83,544	83,544	83,544	83,544	83,544	83,544	83,544	83,544	668,352
Cloud Program - TT6186CP											
Backup (Avamar) - License bubble capacity											
cost avoidance	16,380	0	16,380	0	0	16,380	0	16,380	0	0	65,520
Cloud Program - TT6186CP											
VM Ware License - Bubble capacity cost											
avoidance	134,064	0	134,064	134,064	0	134,064	134,064	0	134,064	134,064	938,448
Cloud Connect - TT6186NC											
Radware Infrastructure	0	110,000	0	0	0	0	110,000	0	0	0	220,000
Cloud Connect - TT6186NC											
Radware Maintenance	0	7,400	7,400	7,400	7,400	7,400	7,400	7,400	7,400	7,400	66,600
Cloud Connect - TT6186NC											
Packetshaper Infrastructure	0	0	150,000	0	0	0	0	150,000	0	0	300,000
Cloud Connect - TT6186NC											
Packetshaper Maintenance	0	15,803	15,803	15,803	15,803	15,803	15,803	15,803	15,803	15,803	142,227
Cloud Connect - TT6186NC											
Fire Eye Upgrade (10GB)	139,000	0	0	0	0	139,000	0	0	0	0	278,000
Cloud Connect - TT6186NC											
Fire Eye Annual Maintenance	0	40,219	40,219	40,219	40,219	40,219	40,219	40,219	40,219	40,219	361,971
Cloud Connect - TT6186NC											
Fire Eye Gigamon Cards	0	20,000	0	0	0	0	20,000	0	0	0	40,000
Cloud Connect - TT6186NC											
AT&T ISP Connection Services (2 Drivers											
@\$3,091.97 *12 months) (updated per AT&T											
email with revised rate)	0	74,207	74,207	74,207	74,207	74,207	74,207	74,207	74,207	74,207	667,866
Cloud Connect - TT6186NC											
C1-ASR1001-HX/K9 Routers (2)											
Replacement at EOL 2021. (*Prices reflects											
an 66% discount per Presidio contract.											
\$307,000 Total List Price)	0	0	0	104,380	0	0	0	0	104,380	0	208,760

Return on Investment Analysis

Savings Summary

Benefit/Savings Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Cloud Connect - TT6186NC											
C1-ASR1001-HX/K9 Routers Maintenance											
(2) at EOL 2021. (*Prices reflects a 40%											
discount with a 5yr Maintenance agreements											
per Presidio contract. \$28,568 Total List											
Price)	0	0	0	17,141	17,141	17,141	17,141	17,141	17,141	17,141	119,986
Cloud Connect - TT6186NC											
C1-ASR1001-HX/K9 Routers Advanced											
Enterprise License (2) at EOL 2021 - No				40.050	•				40.050		00.000
discount	0	0	0	16,650	0	0	0	0	16,650	0	33,300
Cloud Connect - TT6186NC											
SFP Module (8) (*Prices reflects an 80% discount per Presidio contract. \$5,600 Total											
List Price)	0	0	0	1,120	0	0	0	0	1,120	0	2,240
Cloud Program - TT6186CP	0	U	0	1,120	U	U	U	0	1,120	U	2,240
SQL License Cost Avoidance by reducing											
enterprise pricing @ renewal	0	0	29,705	29,705	29,705	29,705	29,705	29,705	29,705	29,705	237,640
Cloud Refresh -			,		,	·	,	· · · · · · · · · · · · · · · · · · ·	,	·	,
Automation: At the end of Phase 2, server											
builds are scripted so the 8 hour task											
reduces to less than 1 per server so you											
save \$1176 per server build (but we cannot											
claim a hard dollar savings)	0	215,208	215,208	215,208	215,208	215,208	215,208	215,208	215,208	215,208	1,936,872
Cost Avoidance Subtotal:	858,196	570,821	1,057,262	785,653	529,439	1,299,651	793,503	940,339	785,653	663,503	8,284,019
Intangible Benefit:											
Gain the understanding of cloud computing											
and infrastructures											
Gain new and improved OC Cloud standards											
Establish Goals and Objectives for Cloud					-						
implementations											

Savings Summary

Benefit/Savings Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Cloud Connect - TT6186NC											
Checkpoint allows greater functionality and											
capabilities than Fire Eye, including a single											
pane of glass, already supported in the											
environment, and minimal work to upgrade											
as opposed to procure and fully											
implementing a new solution.											
Cloud AD - TT6186AD											
Allows cloud connections for on-prem											
applications											
Pay as you go servers and SAN											
Deferral of Maintenance and Upgrades for											
Hardware and Storage to IAAS provider											
Unlimited resource scalability for servers and											
storage											
Cloud Program - TT6186CP											
Intrusion Detection System with 24 by 7											
monitoring by an outside firm.											
Cloud Refresh -											
Separation of Dev/QA from production which											
increases the availability of production											
nicreases the availability of production											
U Claud Drawnana TTC40CCD											
Cloud Program - TT6186CP											
Resiliency - Improved resiliency by the cloud											
model vs our two data centers											
Cloud Program - TT6186CP											
Improved DR on premise in a full disaster we											
run in a degraded state											
Cloud Program - TT6186CP											
Nimbleness (e.g.(Clarity Oracle started											
working in the new environment in days											

Savings Summary

Benefit/Savings Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Cloud Program - TT6186CP DB Expense Reductions - Having Cloud opens the possibility of exploring additional/less expensive DB options compared to Oracle and SQL. Today we spend about \$200,000 per year in SQL Licensing. (ITB) Refresh -											
Autoscaling: At the end of Phase 2, we will begin Autoscaling, which will further reduce costs but cannot be estimated until the end of that Phase											
Cloud Program - TT6186CP Improved citizen engagement models: It will empower us to use APIs and begin connecting disparate apps and giving a better citizen experience											
Cloud Program - TT6186CP In Cloud we have separation between dev/qa/prod as well as apps/DB/Mangement/Security Services. We do not have this on premise and the fix on premise is a network redesign or implement NSX on the VM Environment or Implement McAfee ENS Firewall											
Cloud Program - TT6186CP Containerization - With Cloud, we will be able to leverage containerization for custom built apps that are migrated											
Savings Total:	1,161,196	583,821	1,769,262	967,653	555,439	1,325,651	819,503	966,339	811,653	689,503	9,650,019

Return on Investment Analysis

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							An	:	:	At	rects	Proje	ect R	UI?			<u> </u>		Potential Co	st Extensions	i
							nua	į	į	į	l										
							1	į	į	į	İ	- 1					į			į	
		Budget					Mul	i	i	i	l	i i									
Ocat Personal of the		Category/Fundin	Unit	1114	D-4 U-4	T-4-1 04	tipli			· ·		v				1)(0 (0040))/a (aaaa)		V-5	¥0
Cost Description	Category	g Source	Desc	Units	Rate per Unit	Total Cost	er	Y1	Y2	Y3	Y4	Y5 Y	6 Y	7 Y8	Y9	0 Y1 (2018)	Y2 (2019)	Y3 (2020)	Y4	Y5	Y6
Cloud Infrastructure Optimization - TT6186CO	Development Svcs	Technical Services & Ntwkg	EA	899	125	112,178		x								112,178					
Cloud Infrastructure Optimization - TT6186CO Professional Services (Coalfire/Strategic Solutions)	Development Svcs	Technical Services & Ntwkg	EA	1	52,000	52,000		x								52,000					
Program Management - TT6186PM IT Hours - New Development	Development Svcs	Technical Services & Ntwkg	EA	1,242	103	128,153		x								128,153					
Cloud AD - TT6186AD IT Hours - New Development	Development Svcs	Technical Services & Ntwkg	EA	1,326	76	100,544		x								100,544					
Cloud AD - TT6186AD Professional Services (Turing Group/Strategic Solutions)	Development Svcs	Technical Services & Ntwkg	EA	1	56,852	56,852		x								56,852					
Streams - TT8186CS IT Hours - New Development	Development Svcs	Technical Services & Ntwkg	EA	455	116	52,979		x								52,979					
Cloud 1.0 Foundation - TT8186C1 IT Hours - New Development	Development Svcs	Technical Services & Ntwkg	EA	154	117	17,963		x								17,963					
Cloud Refresh (Phase I YEAR 1) - TT8186CR IT Hours - New Development	Development Svcs	Technical Services & Ntwkg	EA	1,122	122	137,347		ĸ								137,347					
Cloud Refresh (Phase I YEAR 2) - TT8186CR IT Hours - New Development	Development Svcs	Technical Services & Ntwkg	EA	89	147	13,046			x								13,046				
Cloud Optimization - TT9186CO IT Hours - New Development	Development Svcs	Technical Services & Ntwkg	EA	250	148	36,891			x :	x							36,891	36,891			
Cloud Program - TT6186CP Y1 Hardware & Liscensing footprint (QA,Prod, Dev) supporting Alert Logic, CAMS, Checkpoint, GIS, Clarity,eLearning, LaserFiche, Neptune, NGINX	Hardware	Technical Services	EA	1	332,209	332209		×								332,209					
Cloud Program - TT6186CP Y2 - 10 Hardware & Liscensing footprint (QA,Prod, Dev) supporting Alert Logic, CAMS, Checkpoint, GIS, Clarity,eLearning, LaserFiche, Neptune, NGINX	Hardware	Technical Services & Ntwkg	EA	1	117,942	117942			x :	x	x >	x x	x	x	x x		117,942	117,942	117,942	117,942	117,942
Cloud Program Streams costs for CAMS @ 35% utilization	Software	Technical Services & Ntwkg	EA	1	4,236	4,236		x :	x 3	x :	x >	x x	x	х	x x	4,236	4,236	4,236	4,236	4,236	4,236
Cloud Program - TT6186CP Disk Storage	Hardware	Technical Services &	EA	1	180,000	180,000		x :	x :	x :	x)	х х	х	х	x x	180,000	180,000	180,000	180,000	180,000	180,000
Cloud Refresh (Phase I) - TT8186CR Professional Services (TBD)	Development Svcs	Technical Services & Ntwkg	EA	1	144,000	144,000		x								144,000					

Return on Investment Analysis

										Af	fect	s Proj	ject	ROI?	?					Potential Co	st Extensions	3
Cost Description	Project Cost Category	Budget Category/Fundin g Source	Unit Desc	Units	Rate per Unit	Total Cost	An nua I Mul tipli er	Y1	Y2	Y3	Y4	Y5 \	Y6 \	Y7 \	Y8 Y	Y1 /9 0	Y1 (2018)	Y2 (2019)	Y3 (2020)	Y 4	Y 5	Y6
Cloud Connect - TT6186NC	Development	Technical						i	i		i		_	_								
IT Labor - Implementation (Actuals) Cloud Connect - TT6186NC	Svcs Development	Services & Ntwkg	EA	276	110	30,432		х				-	-	-	-		30,432					
IT Labor - Implementation (Future ETC) Cloud Connect - TT6186NC	Svcs	Services & Ntwkg	EA	928	147	136,416		х				H	_	-	-		136,416					
AT&T ISP Connection Services (2 Drivers @\$4,894.36 * 12 months) (updated per AT&T		Technical																				
/Renee's email with revised rate) Cloud Connect - TT6186NC	Infrastructure	Services & Ntwkg	ANN	12	9,789	117,465		х	х	х	х	х	х	< x	(X	х	117,465	117,465	117,465	117,465	117,465	117,465
Windstream Direct Connection Services - (1G @ each site = 2@\$1,610 = \$3,220 x 12mths)	Infrastructure	Technical Services & Ntwkg	ANN	12	3,220	38,640		x	х	x	х	хх	×	с х	(x	х	38,640	38,640	38,640	38,640	38,640	38,640
Cloud Connect - TT6186NC AWS (Amazon)10GB Connection Services \$0.30/hr; \$2,628x2= \$5,256/year (note: X 2 redundant connections = \$39,420/year)	Infrastructure	Technical Services & Ntwkg	ANN	2	2,628	5,256		v		v	v			, y	, x		5,256	5,256	5,256	5,256	5,256	5,256
Cloud Connect - TT6186NC CISCO ASR1002-HX WAN Routers (2) (*Prices reflects an 66% discount per Presidio contract. \$346,000 Total List Price)	Hardware	Technical Services & Ntwkg		2	76,120	152,240		x	X	*	X	× ×				*	152,240	5,230	5,250	5,256	5,256	152,240
Cloud Connect - TT6186NC CISCO ASR1002-HX WAN Routers (2) Maintenance (*Prices reflects an 40% discount with a 5yr Maintenance agreements per Presidio contract. Total List price \$49,459)	Software	Technical Services & Ntwkg		2	14,837	29,674		x	x	x	x	x x	х	¢ χ	(x	х	29,674	29,674	29,674	29,674	29,674	29,674
Cloud Connect - TT6186NC CISCO ASR1006-X WAN Routers (2) Advanced Enterprise License - No discount	Software	Technical Services & Ntwkg	ANN	2	12,500	25,000		x									25,000					
Cloud Connect - TT6186NC CISCO SFP (8) (*Prices reflects an 80% discount per Presidio contract. \$5,600 Total List Price)	Hardware	Technical Services & Ntwkg	EA	8	140	1,120		x				×					1,120					1,120
Cloud Connect - TT6186NC WAN Routers Professional Services - ASR1006-X (No discount)	Development Svcs	Technical Services & Ntwkg	EA	1	65,000	65,000		x									65,000					
Cloud Connect - TT6186NC CheckPoint SFP+ transceiver for 10G fiber Ports - short range (10GBase- SR)	Hardware	Technical Services & Ntwkg	EA	8	797	6,376			x				×	(6,376				

Return on Investment Analysis

		1					1			Affec	ts Pro	oiect	ROI?	?					Potential Co	st Extension	S
Cost Description	Project Cost Category	Budget Category/Fundin g Source	Unit Desc	Units	Rate per Unit	Total Cost	An nua I Mul tipli er								Y1	Y1 (2018)	Y2 (2019)	Y3 (2020)	Y4	Y 5	Y6
Cloud Connect - TT6186NC	- autogoty	9 00000	2000	0	Trace per emit		-		+	1			+		-	(20.0)	. = (=0.0)	(2020)	• • •		
Check Point SFP+ interface card - 4 Port 10GBase. Requires an additional 10GBase SFP+ transceiver per interface port.	Hardware	Technical Services & Ntwkg	EA	2	15,144	30,288		x				2	ĸ				30,288				
Cloud Connect - TT6186NC Check Point Direct Enterprise Premium Support - Licenses	Software	Technical Services & Ntwkg	EA	1	8,151	8,151		x				,	ζ.				8,151				
Cloud Connect - TT6186NC CheckPoint SFP Shipping Charge	Other	Technical Services & Ntwkg	EA	1	248	248		х				2	ĸ				248				
Cloud Connect - TT6186NC CheckPoint Appliance CPAP-SBTE2000X-40VM - SandBlast TE Appliance TE2000X (*Prices reflects an 30% discount per Optiv contact. \$179,000 Total List Price)	Infrastructure	Technical Services & Ntwkg	EA	1	125,300	125,300		x								125,300					
Cloud Connect - TT6186NC CheckPoint Appliance Licenses (*Prices reflects an estimated 20% of hardware cost))	Software	Technical Services & Ntwkg	ANN	1	25,000	25,000		x x	x	x	x	x 2	()	x x	x	25,000	25,000	25,000	25,000	25,000	25,000
Cloud DNS - TT8186DN IT Labor - Implementation	Development Svcs	Technical Services & Ntwkg	ANN	508	123	62,478		х								62,478					
Cloud DNS - TT8186DN AWS Services for DNS	Infrastructure	Technical Services & Ntwkg	ANN	10	10	100		хх	x	x	х	х 2	()	x x	x	100	100	100	100	100	100
Cloud Program - TT6186CP Cloud Tools (Park My Cloud, Check Point, Alert Logic)	Software	Technical Services & Ntwkg	EA	12	8,300	99,600		x x	x	x	х	X 2	()	х	х	99,600	99,600	99,600	99,600	99,600	99,600
Cloud Program - TT6186CP Cloud Strategic Bill - YR 1	Software	Technical Services & Ntwkg	EA	1	156,731	156,731		х								156,731					
Cloud Program - TT6186CP Cloud Strategic Bill - YR 2-6	Software	Technical Services & Ntwkg	EA	1	115,593	115,593		x	x	х	х	x 2	x x	x x	х		115,593	115,593	115,593	115,593	115,593
Program Management (19/20) - TT9186CP IT Hours - New Development	Development Svcs	Technical Services & Ntwkg	HR	900	144	129,189		х	х								129,189	129,189			

Return on Investment Analysis

	1				
Cost Description	Project Cost Category	Y7	Y8	Y9	Y10
Cloud Infrastructure Optimization - TT6186CO IT Hours - New Development	Development Svcs				
Cloud Infrastructure Optimization - TT6186CO Professional Services (Coalfire/Strategic Solutions)	Development Svcs				
Program Management - TT6186PM IT Hours - New Development	Development Svcs				
Cloud AD - TT6186AD IT Hours - New Development	Development Svcs				
Cloud AD - TT6186AD Professional Services (Turing Group/Strategic Solutions)	Development Svcs				
Streams - TT8186CS IT Hours - New Development	Development Svcs				
Cloud 1.0 Foundation - TT8186C1 IT Hours - New Development	Development Svcs				
Cloud Refresh (Phase I YEAR 1) - TT8186CR IT Hours - New Development	Development Svcs				
Cloud Refresh (Phase I YEAR 2) - TT8186CR IT Hours - New Development	Development Svcs				
Cloud Optimization - TT9186CO IT Hours - New Development	Development Svcs				
Cloud Program - TT6186CP Y1 Hardware & Liscensing footprint (QA,Prod, Dev) supporting Alert Logic, CAMS, Checkpoint, GIS, Clarity,eLearning, LaserFiche, Neptune, NGINX	Hardware				
Cloud Program - TT6186CP Y2 - 10 Hardware & Liscensing footprint (QA,Prod, Dev) supporting Alert Logic, CAMS, Checkpoint, GIS, Clarity,eLearning, LaserFiche, Neptune, NGINX	Hardware	117,942	117,942	117,942	117,942
Cloud Program Streams costs for CAMS @ 35% utilization	Software	4,236	4,236	4,236	4,236
Cloud Program - TT6186CP Disk Storage	Hardware	180,000	180,000	180,000	180,000
Cloud Refresh (Phase I) - TT8186CR Professional Services (TBD)	Development Svcs				

Return on Investment Analysis

	I				
Cost Description	Project Cost Category	Y 7	Y8	Y 9	Y10
Cloud Connect - TT6186NC	Development				
IT Labor - Implementation (Actuals)	Svcs				
Cloud Connect - TT6186NC	Development				
IT Labor - Implementation (Future ETC)	Svcs				
Cloud Connect - TT6186NC	0703				
AT&T ISP Connection Services (2 Drivers					
@\$4,894.36 * 12 months) (updated per AT&T					
/Renee's email with revised rate)	Infrastructure	117.465	117,465	117.465	117,465
Cloud Connect - TT6186NC		,	,	,	,
Windstream Direct Connection Services - (1G @					
each site = 2@\$1,610 = \$3,220 x 12mths)	Infrastructure	38,640	38,640	38,640	38,640
Cloud Connect - TT6186NC AWS (Amazon)10GB Connection Services \$0.30/hr ;\$2,628x2= \$5,256/year (note: X 2 redundant connections = \$39,420/year)	Infrastructure	5,256	5,256	5,256	5,256
Cloud Connect - TT6186NC	illinaoti aotaro	0,200	0,200	0,200	0,200
CISCO ASR1002-HX WAN Routers (2) (*Prices					
reflects an 66% discount per Presidio contract.					
\$346,000 Total List Price)	Hardware				
Cloud Connect - TT6186NC					
CISCO ASR1002-HX WAN Routers (2) Maintenance					
(*Prices reflects an 40% discount with a 5yr					
Maintenance agreements per Presidio contract. Total					
List price \$49,459)					
	Software	29,674	29,674	29,674	29,674
Cloud Connect - TT6186NC CISCO ASR1006-X WAN Routers (2) Advanced Enterprise License - No discount	Software				
Cloud Connect - TT6186NC					
CISCO SFP (8) (*Prices reflects an 80% discount per					
Presidio contract. \$5,600 Total List Price)	Hardware				
Cloud Connect - TT6186NC WAN Routers Professional Services - ASR1006-X (No discount)	Development Svcs				
ľ	-				
Cloud Connect - TT6186NC CheckPoint SFP+ transceiver for 10G fiber Ports - short range (10GBase-	Hardware	6.070			
SR)	пагижаге	6,376			

Return on Investment Analysis

<u> </u>	1				
Cost Description	Project Cost Category	Y7	Y8	Y9	Y10
Cloud Connect - TT6186NC					
Check Point SFP+ interface card - 4 Port 10GBase.					
Requires an additional 10GBase SFP+ transceiver per interface port.	Hardware	30.288			
Cloud Connect - TT6186NC	naiuwaie	30,200			
Check Point Direct Enterprise Premium Support -					
Licenses	Software	8,151			
Cloud Connect - TT6186NC					
CheckPoint SFP Shipping Charge	Other	248			
Cloud Connect - TT6186NC CheckPoint Appliance CPAP-SBTE2000X-40VM - SandBlast TE Appliance TE2000X (*Prices reflects an 30% discount per Optiv contact. \$179,000 Total List Price)	Infrastructure				
Cloud Connect - TT6186NC CheckPoint Appliance Licenses (*Prices reflects an estimated 20% of hardware cost))	Software	25,000	25,000	25,000	25,000
Cloud DNS - TT8186DN IT Labor - Implementation	Development Svcs				
Cloud DNS - TT8186DN AWS Services for DNS	Infrastructure	100	100	100	100
		.00	.00	100	100
Cloud Program - TT6186CP					
Cloud Tools (Park My Cloud, Check Point, Alert Logic)	Software	99,600	99,600	99,600	99,600
Cloud Program - TT6186CP					
Cloud Strategic Bill - YR 1	Software				
Cloud Program - TT6186CP Cloud Strategic Bill - YR 2-6	Software	115.593	115.593	115,593	115,593
			,	,500	
Program Management (19/20) - TT9186CP IT Hours - New Development	Development Svcs				

Cost Summary

Cost Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Development Services:						
Cloud Infrastructure Optimization -						
TT6186CO						
IT Hours - New Development	112,178					
Cloud Infrastructure Optimization -						
TT6186CO						
Professional Services (Coalfire/Strategic						
Solutions)	52,000					
Program Management - TT6186PM						
IT Hours - New Development	128,153					
Cloud AD - TT6186AD						
IT Hours - New Development	100,544					
Cloud AD - TT6186AD						
Professional Services (Turing	56,852					
Streams - TT8186CS						
IT Hours - New Development	52,979					
Cloud 1.0 Foundation - TT8186C1						
IT Hours - New Development	17,963					
Cloud Refresh (Phase I YEAR 1) -						
TT8186CR	137,347					
Cloud Refresh (Phase I YEAR 2) -						
TT8186CR	0	13,046	0	0	0	0
Cloud Optimization - TT9186CO						
IT Hours - New Development	0	36,891	36,891			
Program Management (19/20) - TT9186CP						
IT Hours - New Development	0	129,189	129,189	0	0	0
Cloud Refresh (Phase I) - TT8186CR						
Professional Services (TBD)	144,000	0	0	0	0	(

Return on Investment Analysis

Cost Summary

Cost Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	0					
Cloud Connect - TT6186NC	U					
IT Labor - Implementation (Actuals)	30,432					
Cloud Connect - TT6186NC	,					
IT Labor - Implementation (Future ETC)	136,416					
Cloud Connect - TT6186NC						
WAN Routers Professional Services -	65,000					
Cloud DNS - TT8186DN						
IT Labor - Implementation	62,478					
GovCloud - Checkpoint Implementation - TT8186CP	64,177					
Development Services Subtotal:	1,160,519	179,126	166,080			
Hardware:	1,100,319	179,120	100,080			
Traidware.						
Cloud Program - TT6186CP						
Y1 Hardware & Liscensing footprint						
(QA,Prod, Dev) supporting Alert Logic,						
CAMS, Checkpoint, GIS, Clarity,eLearning,						
LaserFiche, Neptune, NGINX	332,209					
Cloud Program - TT6186CP						
Y2 - 10 Hardware & Liscensing footprint						
(QA,Prod, Dev) supporting Alert Logic,						
CAMS, Checkpoint, GIS, Clarity,eLearning,		447.040	117.040	447.040	117.040	117.040
LaserFiche, Neptune, NGINX		117,942	117,942	117,942	117,942	117,942
Cloud Program						
Streams costs for CAMS @ 35% utilization	4,236	4,236	4,236	4,236	4,236	4,236
Cloud Program - TT6186CP	1,200	1,200	1,200	1,200	1,200	1,200
Disk Storage	180,000	180,000	180,000	180,000	180,000	180,000
Cloud Connect - TT6186NC		,	,	,	,	,
CISCO ASR1002-HX WAN Routers (2)	152,240					152,240

Return on Investment Analysis

Cost Summary

Cost Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Cloud Connect - TT6186NC						
CISCO SFP (8) (*Prices reflects an 80%						
discount per Presidio contract. \$5,600 Total						
List Price)	1,120					1,120
Cloud Connect - TT6186NC						
CheckPoint Appliance CPAP-SBTE2000X-	125,300					
Cloud Connect - TT6186NC						
CheckPoint SFP+ transceiver for 10G fiber		6,376				
Cloud Connect - TT6186NC						
Check Point SFP+ interface card - 4 Port		30,288				
Hardware Subtotal:	795,105	338,842	302,178	302,178	302,178	455,538
Software:						
Cloud Program - TT6186CP						
Cloud Tools (Park My Cloud, Check Point,						
Alert Logic)	99,600	99,600	99,600	99,600	99,600	99,600
Cloud Program						
Streams costs for CAMS @ 35% utilization	4,236	4,236	4,236	4,236	4,236	4,236
Cloud Program - TT6186CP						
Cloud Strategic Bill - YR 1	156,731					
Cloud Program - TT6186CP						
Cloud Strategic Bill - YR 2-6		115,593	115,593	115,593	115,593	115,593
Cloud Connect - TT6186NC						
CISCO ASR1006-X WAN Routers (2)						
Advanced Enterprise License - No discount	25,000					
Cloud Connect - TT6186NC						
CISCO ASR1002-HX WAN Routers (2)						
Maintenance - (*Prices reflects an 40%						
discount with a 5yr Maintenance agreements						
per Presidio contract. Total List price						
\$49,459)						
	29,674	29,674	29,674	29,674	29,674	29,674

Cost Summary

Cost Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Cloud Connect - TT6186NC						
Check Point Direct Enterprise Premium		8,151				
Cloud Connect - TT6186NC						
CheckPoint Appliance Licenses (*Prices	25,000	25,000	25,000	25,000	25,000	25,000
Software Subtotal:	340,241	282,254	274,103	274,103	274,103	274,103
Infrastructure:						
Cloud Connect - TT6186NC						
AT&T ISP Connection Services (2 Drivers	117,465	117,465	117,465	117,465	117,465	117,465
Cloud Connect - TT6186NC						
Windstream Direct Connection Services -	38,640	38,640	38,640	38,640	38,640	38,640
Cloud Connect - TT6186NC		= 0=0	= 0=0	= 0=0	= 0=0	
AWS (Amazon)10GB Connection Services	5,256	5,256	5,256	5,256	5,256	5,256
Cloud DNS - TT8186DN	400	400	400	400	400	400
AWS Services for DNS	100	100	100	100	100	100
Infrastructure Subtotal	161,461	161,461	161,461	161,461	161,461	161,461
Training:						
Training Subtotal:						
Other:						
Cloud Connect - TT6186NC						
CheckPoint SFP Shipping Charge		248				
Other Subtotal:		248				
Costs Total:	2,457,325	961,931	903,822	737,742	737,742	891,102

Return on Investment Analysis

Cost Summary

Year 7	Year 8	Year 9	Year 10	Total
				112,178
				,
				52,000
				128,153
				100,544
				56,852
				52,979
				17,963
				137,347
				13,046
				73,782
0				258,378
				200,070
				144,000
				144,000

Return on Investment Analysis

Cost Summary

Year 7	Year 8	Year 9	Year 10	Total
				30,432
				136,416
				65,000
				62,478
				64,177
				1,505,725
				332,209
117,942	117,942	117,942	117,942	1,061,478
4,236	4,236	4,236	4,236	42,360
180,000	180,000	180,000	180,000	1,800,000
100,000	100,000	100,000	100,000	
				304,480

Cost Summary

Year 7	Year 8	Year 9	Year 10	Total
				2,240
				125,300
6,376				12,753
30,288				60,575
338,842	302,178	302,178	302,178	3,741,394
99,600	99,600	99,600	99,600	996,000
4,236	4,236	4,236	4,236	42,360
				156,731
445 502	445 500	445 500	115 500	
115,593	115,593	115,593	115,593	1,040,338
				25,000
29,674	29,674	29,674	29,674	296,740

Return on Investment Analysis

Cost Summary

Year 7	Year 8	Year 9	Year 10	Total
8,151				16,302
25,000	25,000	25,000	25,000	250,000
282,254	274,103	274,103	274,103	2,823,471
202,201	27 1,100	21 1,100	27 1,100	2,020,111
117,465	117,465	117,465	117,465	1,174,646
00.040	22.242	00.040	00.040	000.400
38,640	38,640	38,640	38,640	386,400
5,256	5,256	5,256	5,256	52,560
3,233	3,233	0,200	0,200	02,000
100	100	100	100	1,000
161,461	161,461	161,461	161,461	1,614,606
248				497
248				497
782,805	737,742	737,742	737,742	9,685,693

REV: February 24, 2012

Assumptions

Date	Project	Assumption Description
22-Mar-17	AD - TT6186AD	Consulting services from Strategic will be leveraged and funding will be available.
25-Mar-17	Program	Subsequent phases will include additional scope and leverage the remaining ETC.
14-Dec-17	Program Management	Support and enhancement efforts <200hrs are listed as tasks and managed under the Cloud Program labor costs.
	Network Connect	The Cloud Network Connect project is only sized through Design and RFP process. The labor and equipment costs have not estimated for
08-Feb-18	1	implementation.
		Year 1 assumes no spin up and spin down, and reserved instances. Year 2 assumes a greater amout of spin up and spin down and
22-Feb-18	Refresh	reserved instance for the apps.
22-Feb-18	Refresh	No backup/storage estimates or DR costs included
22-Feb-18		DR must be manually failed over. This will require pre-configuring fail over environment in another AWS datacenter
22-Feb-18	Program	Excluded is the shared stewardship (Labor) costs, because they are the same across the board for physical and virtual servers.
40 4 40	D	Anna la Caraca Clarita CAMa Invanian Nantura al camina CIC
10-Apr-18		Apps In Scope: Clarity, CAMs, Imaging, Neptune, eLearning, GIS Costs In Scope (for the 6 Apps): Strategic, Licenses, AWS Server Costs, AWS DB Costs
10-Apr-18	Program	Costs in Scope (for the 6 Apps): Strategic, Licenses, AvvS Server Costs, AvvS DB Costs
10-Apr-18	Program	Infrastructure In Scope (for Apps In Scope): Cloud AD, Streams, Refresh (Phase I), Optimization (Refresh Phase II), Secuirty/Cloud Tools
10-Apr-18		Scope assumptions are based on the Coal Fire validated design approved by OA
	9	VM Capacity Bubble estimates were based upon the technology and environment configuration available when the specific project was
10-Apr-18	Program	scheduled to be executed.
	Network Connect	ROI In Scope: Network Connect cost and savings (incl direct connect, upgraded internet)
16-Apr-18	DNS	ROI In Scope: Public DNS to Cloud because Network Connect benefits are not realized unless this is completed
10-Apr-18	Program	Billing, including offsets are in scope for the ROI
		Out of Scope: New Tools, Dev time for the 6, PCI Zone, WatchGuard, All CJIS, Any new systems brought in after 4/10, changes to existing
10-Apr-18	Refresh	(approved) cloud design
		Server build cycle time efficiencies will be realized by the Server Admin team in the future and will result in improved time to
26-Apr-18		market/completion
08-Feb-18	Network Connect	The Cloud Network Connect project is only sized through Design and RFP process. The labor and equipment costs have not estimated for
		implementation.
	Network Connect	All other Cloud projects are managed under the Cloud Program.
02-Mar-18	Network Connect	Checkpoint allows greater functionality and capabilities than Fire Eye, including a single pane of glass, already supported in the
05.14 40		environment, and minimal work to upgrade as opposed to fully implementing a new solution.
	Network Connect	CISCO products (ASR WAN Router) price in the 'Cost Detail' reflects a 66% discount based on current Presidio agreement.
	Network Connect	CISCO maintenance price in the 'Cost Detail' reflects a 40% discount per Guy Compton.
U5-Mar-18	Network Connect	AWS Connection cost is based on 10GB connection. The only option less than 10GB is a 1GB connection option: 1GB Connection
		\$0.30/hr = \$2,628/year x 2 redundant connections = \$5,256/year.
17-Apr-18	Refresh	Consulting Services will be used when practical.
•		Environments are priced with the assumption that dev and QA is shut down 108 out of the 168 hours in a week (a pay for what you use
20-Apr-18	Refresh	model and estimated for what we use and turning stuff off when not in use
23-Apr-18		CheckPoint numbers for redesign are not included
20-Apr-10	1.0110011	Should shirt have been supported that make make the make