



Annex A

Statement of Requirements Installation and configuration of telecommunications equipment at various DND locations

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Objective:

SSC has a requirement to upgrade Cisco Unified Communication systems at two Primary locations CFB Halifax, NS and CFB Esquimalt, BC.

Requirements summary:

- Manage requirements elicitation, communications framework and site logistics to;
- Create upgrade and test plans (x4 documents) for seamless migration with no downtime;
 - What is required;
 - How it will be achieved and by whom;
 - When events will occur;
- Install and configure servers;
- Install operating system and application layer software;
- Upgrade and test phone firmware;
- Migrate Database from Release 8.6(2) to Release 11.5(1) for CUMC and UC
- Upgrade and test Communication Manager and PSTN/CSN gateways;
- Upgrade and test of Unity voice mail with no impact to voicemail messages;
- Upgrade and test all UCCX scripts;
- Install Cisco Emergency Responder (CER)
- Install Instant Messaging & Presence (IM&P)
- Test CER for each location for proper routing of 911 calls
- Test IM&P with Jabber and make calls with jabber client
- Activate limited FIPS 140-2 compliance mechanisms
- Confirm license usage is implemented per plan
- Enable FIPS 140-2

Upgrade from JITC supported **Release 8.5(2)** to JITC supported **Release 11.5(1)**

Migration Plan:

The methodology to get to the proposed state will involve detailed planning and execution to ensure that there is no downtime for users. Upgrade from JITC supported Release 8.5(2) to UCS C240 Servers running JITC CUCM 11.5(1) interfacing with existing and new infrastructure and gateways. Deploy a mirror environment with different host names / IP addresses and licensing.

Areas of concern and needs to be addressed:

- Migration of licenses and uses; CUWL standard licensing were purchased and the licensing model changed dramatically and there will have to be programming on the systems to associate the owner ID with the devices, and tie together users so proper licensing will be enforced;



- The phone loads changed, as such firmware updates are required causing a reboot and reimage of the IP Phones. To minimize this, staging and localized upgrades during maintenance windows is suggested prior to the upgrade to get the phones at the target revision code;
- Migrate the database over to the new infrastructure and upgrade to the target revision;
- Unity will also be upgraded in 2 stages to allow for users to maintain their greetings and their old voicemail messages and not have any duplicate messages:
- Implementation plan to allow for a seamless site by site upgrade and allow for cutovers occurring during different days. Bridge the two environments and maintain continuity of service; and
- Leveraging the Cisco Pre-Release 8 feature and preparing the phones so we can move phones seamlessly between versions

Contingency Plan:

Based on migration plan above, SSC and Supplier will be in a unique position to test the environment prior to the cutover. Features, service access to the PSTN can be performed and validation of users, licenses, devices, functionality, site specific scenarios must be vetted.

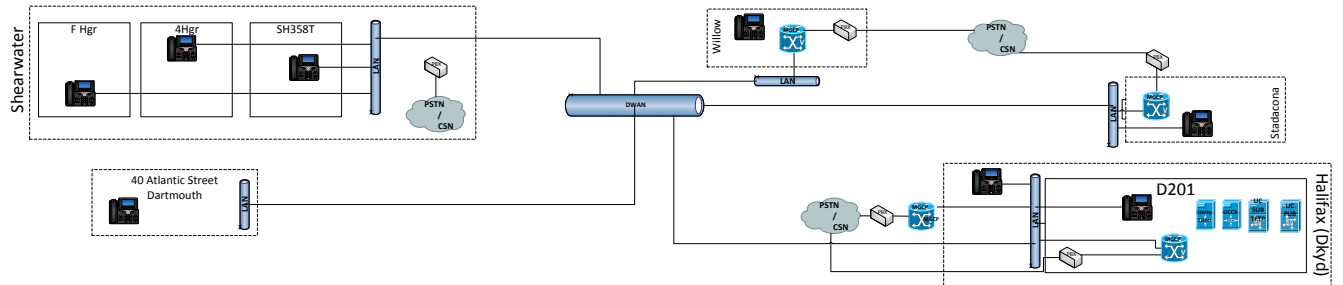
Once cutover is complete and executed on SSC approved test plan provided by the contractor. In the event there is a system level issue that makes the environment problematic, the system(s) must be fully transferred back to the existing environment through a few changes in system DHCP and a reset of phones.



Regional requirements:

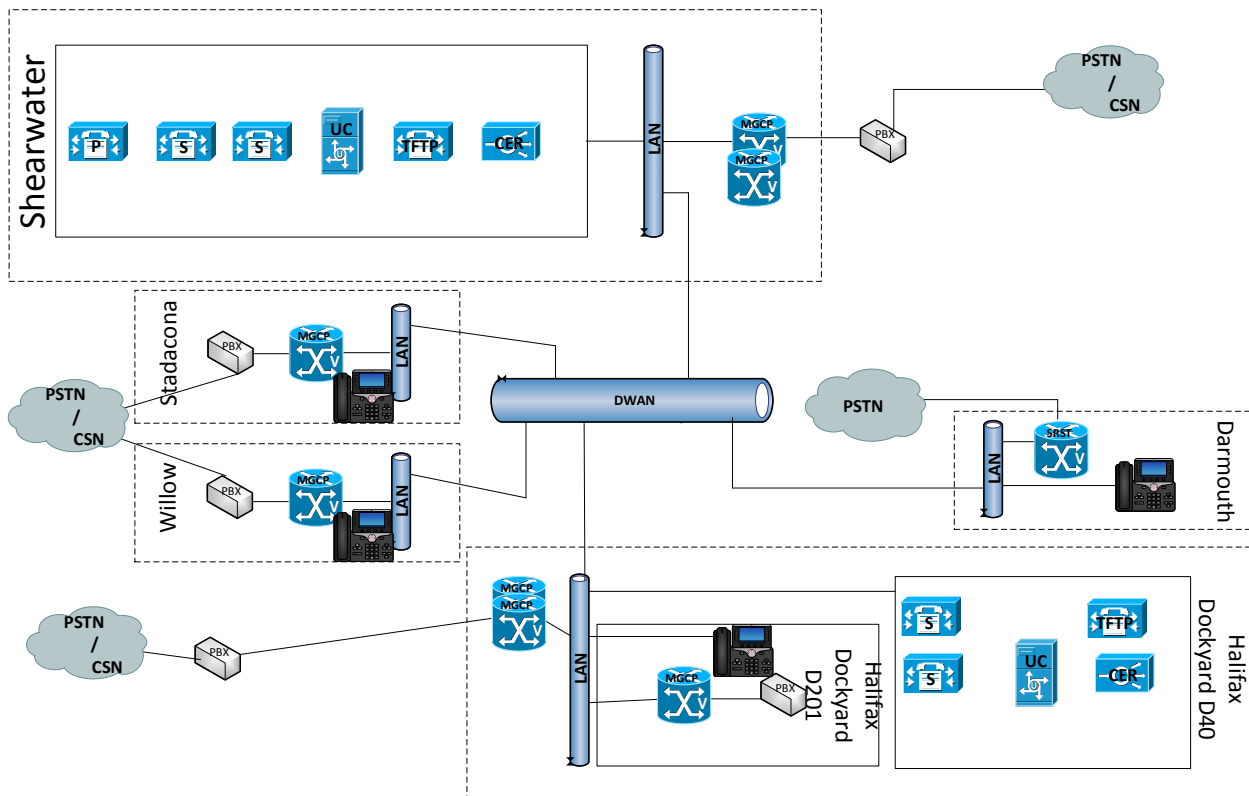
Maritime Atlantic (MARLANT) 5 sites Halifax Region:

Pre Configuration:



- Telecom platforms on Multi-Media Communication Server (MCS) technology;
- Approximately 760 IP Tel sets, 25 agents;
- Installation / Integration of customer provided certificates as well as configurations of Secure RTP are in scope of the required services.

Post Configuration:





Pre and Post Location Configuration Comparison:

Pre configuration	Post configuration
Site 1: CFB Shearwater, NS	
<ul style="list-style-type: none"> • No hosts only IPT • sets register to Dockyard no SRST 	<ul style="list-style-type: none"> • 1 PUB • 2 SUB • 1 CUC • 1 TFTP • Add 1 CER • Add 1 ISR 4321 c/w 2 PRI
Site 2: Halifax, Dockyard	
<ul style="list-style-type: none"> • 1 MCS SUB, TFTP • 1 MCS PUB • 1 CUC • 1 UCCX • 1 ISR with telecom links to PBX 	<ul style="list-style-type: none"> • 2 SUB • 1 CUC • 1 TFTP • Add 1 CER
Site 3: Halifax, Stadacona	
<ul style="list-style-type: none"> • no hosts only IPT • Sets register to Dockyard • 1 ISR with telecom links to PBX 	
Site 4: Halifax, Willow	
<ul style="list-style-type: none"> • no hosts only IPT • Sets register to Dockyard • 1 ISR with telecom links to PBX 	
Site 5: Dartmouth, 40 Atlantic St	
<ul style="list-style-type: none"> • No hosts only IPT • sets register to Dockyard no SRST 	<ul style="list-style-type: none"> • Add 1 ISR 4321 c/w 2 FXO and SRST



Target end state:

Post configuration allows one common call control to be centrally managed and have control to over 1000+ devices. There is inherent survivability in the design as the CUCM architecture allows for failover not only between servers (CUCM sub to CUCM sub) at local site, but also across sites. There is high availability in the applications as well as the server deployment and again in the WAN access. If one site loses both servers - the phones can run from a CUCM located at another site. The Cisco Emergency Responder (CER) and IM&P will be added across 2 locations.

Other applications that are deployed are the Cisco Unity Connection – deployed in a High Availability Pair across both servers.

Cisco Emergency Responder and UCCX are deployed in an HA fashion located across 2 hosts. The ancillary services such as Music On Hold, TFTP etc. are distributed amongst the cluster at various sites to maintain HA and aid in deployment and management of the environment.

VMWare Host Resource Config:

Shearwater												Halifax											
Business Edition 7000 Medium Density (UCS 240 M4) - Serveur 10.XX.XX.XX												Business Edition 7000 Medium Density (UCS 240 M4) - Serveur 10.XX.XX.XX											
Core 1	Core 2	Core 3	Core 4	Core 5	Core 6	Core 7	Core 8	Core 9	Core 10	Core 11	Core 12	Core 1	Core 2	Core 3	Core 4	Core 5	Core 6	Core 7	Core 8	Core 9	Core 10	Core 11	Core 12
CUCM Publisher v11.5.1 (7500 users) 2vCPU/8GB vRAM 110GB vDisk	CUCM Subscriber v11.5.1 (7500 users) 2vCPU/8GB vRAM 110GB vDisk	CUC Publisher v11.5.1 (5000 users) 2vCPU/6GB vRAM 200GB vDisk	UCCX Publisher v11.5 (300 Agents) 2vCPU/10GB vRAM 2x 146 GB vDisk	CER Publisher v11.5.(1) (12000 users) 2vCPU/4GB vRAM 80GB vDisk	IM&P (PUB) v11.5.1 (1000 users) 1vCPU/4 GB vRAM	ESXI v6.0						CUCM Subscriber v11.5.1 (7500 users) 2vCPU/8GB vRAM 110GB vDisk	CUCM TFTP v11.5.1 (7500 users) 2vCPU/8GB vRAM 110GB vDisk	CUC Subscriber v11.5.1 (5000 users) 2vCPU/6GB vRAM 200GB vDisk	UCXC Subscriber v11.5 (300 Agents) 2vCPU/10GB vRAM 2x 146 GB vDisk	CER Subscriber v11.5.(1) (12000 users) 2vCPU/4GB vRAM 80GB vDisk	IM&P (SUB) v11.5.1 (1000 users) 1vCPU/4 GB vRAM	ESXI v6.0					

Gateways and SRSTs confirmed running IOS 15.x code and will be compatible with the newer version of CUCM.

Dartmouth (1 x SRST with PSTN/911)

- 1 x Cisco 4331

CFB Shearwater (2 x MGCP GW)

- 2 x Cisco 4321

Halifax, Dockyard (Building D40 – 2 x MGCP GW)

- 2 x Cisco 4321

Halifax, Dockyard (Building D201 – Sea Deployed Operations Gateway – 2 x MGCP GW)

- 1 x Cisco 4321

Halifax, Stadacona (2 x MGCP GW)

- 1 x Cisco 4321

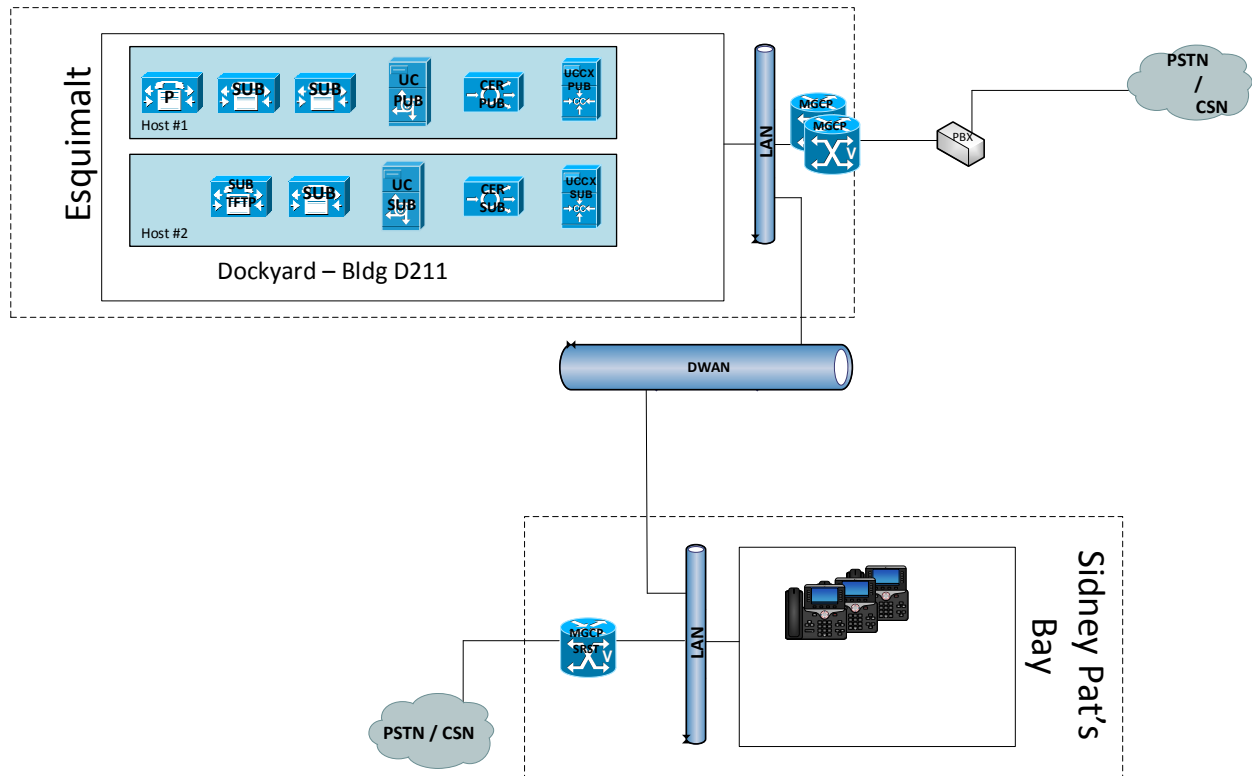
Halifax, Willow (2x MGCP GW)

- 1 x Cisco 4321



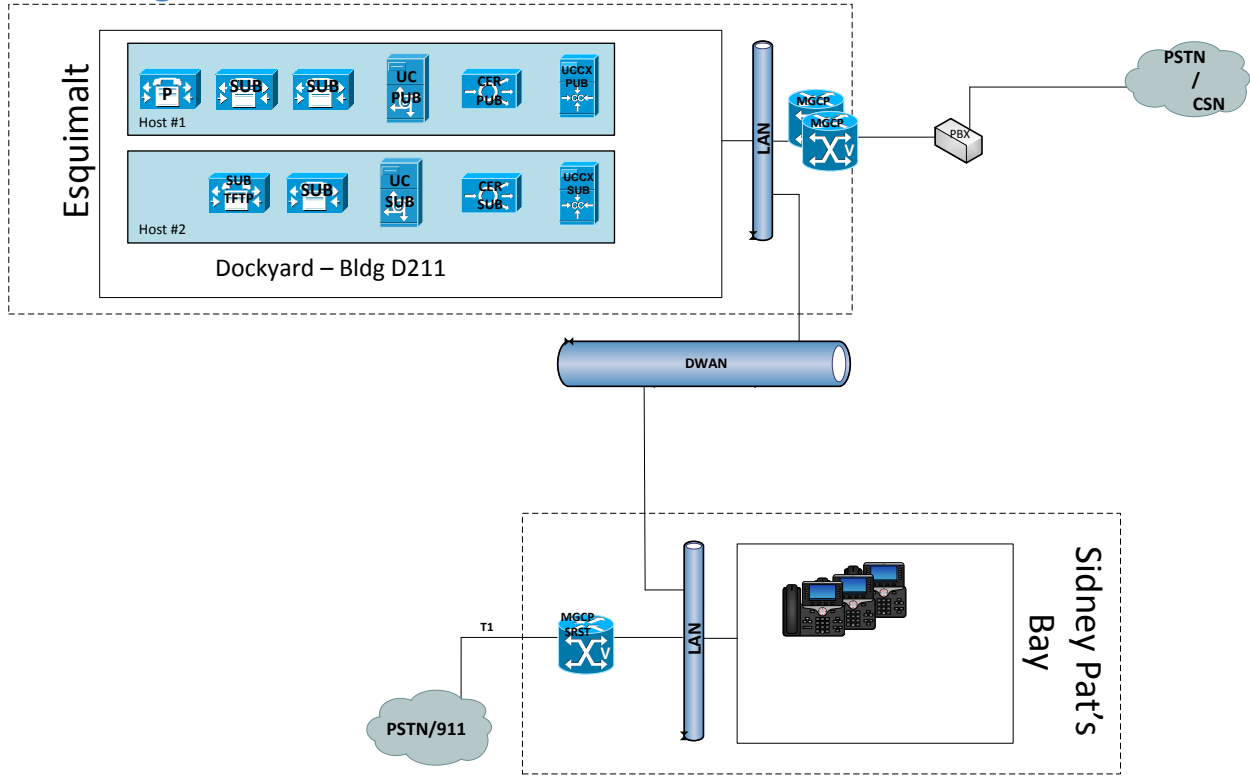
Maritime Pacific (MARPAC) 2 sites Vancouver Island Region:

Pre Configuration:





Post Configuration:



Pre and Post Location Configuration Comparison:

Pre configuration	Post configuration
Site 1: Esquimalt	
<ul style="list-style-type: none"> • PUB • 4 x SUB (with TFTP) • UC (PUB and SUB) • CER (PUB and SUB) • UCCX (PUB and SUB) • 2 x MGCP GW 	<ul style="list-style-type: none"> • PUB (TFTP) • 2 x SUB • 1 x TFTP • UC (PUB and SUB) • CER (PUB and SUB) • UCCX (PUB and SUB) • 2 x MGCP GW (ISR 4321)
Site 2: Sidney Pat's Bay	
<ul style="list-style-type: none"> • 1 x SRST with MGCP GW 	<ul style="list-style-type: none"> • 1 x SRST with MGCP GW (ISR 4331)



Target end state:

Post configuration allows one common call control to be centrally managed and have control of all devices. There is high availability in the applications as well as the server deployment and again in the WAN access. If the main site loses a server - the phones can run from the second server and if the remote site loses WAN access the remote phones will re-register to the ISR by way of SRST.

Other applications that are deployed are Cisco Unity Connection deployed in a High Availability Pair across servers, Cisco Emergency Responder and UCCX are also deployed in a HA fashion. The ancillary services such as Music On Hold, TFTP etc. are distributed amongst the cluster to maintain HA and aid in deployment and management of the environment. IM&P will be added across both servers as well.

VMWare Host Resource Config:

Data Centre (Bldg: Dockyard 199, CFB Esquimalt)												Data Centre (Bldg: Dockyard 199, CFB Esquimalt)											
Business Edition 7000 Medium Density (UCS 240 M4) - Serveur 10.XX.XX.XX												Business Edition 7000 Medium Density (UCS 240 M4) - Serveur 10.XX.XX.XX											
Core 1	Core 2	Core 3	Core 4	Core 5	Core 6	Core 7	Core 8	Core 9	Core 10	Core 11	Core 12	Core 1	Core 2	Core 3	Core 4	Core 5	Core 6	Core 7	Core 8	Core 9	Core 10	Core 11	Core 12
CUCM Publisher v11.5.1 (7500 users) 2vCPU/8GB vRAM 110GB vDisk	CUCM Subscriber v11.5.1 (7500 users) 2vCPU/8GB vRAM 110GB vDisk	CUC Publisher v11.5.1 (5000 users) 2vCPU/6GB vRAM 200GB vDisk	UCCX Publisher v11.5 (300 Agents) 2vCPU/10GB vRAM 2x 146 GB vDisk	CER Publisher v11.5.(1) (12000 users) 2vCPU/4GB vRAM 80GB vDisk	IM&P (PUB) v11.5.1 (1000 urs) 1vCPU/4 GB vRAM	ESXi v6.0						CUCM Subscriber v11.5.1 (7500 users) 2vCPU/8GB vRAM 110GB vDisk	CUCM TFTP v11.5.1 (7500 users) 2vCPU/8GB vRAM 110GB vDisk	CUC Subscriber v11.5.1 (5000 users) 2vCPU/6GB vRAM 200GB vDisk	UCCX Subscriber v11.5 (300 Agents) 2vCPU/10GB vRAM 2x 146 GB vDisk	CER Subscriber v11.5.(1) (12000 users) 2vCPU/4GB vRAM 80GB vDisk	IM&P (SUB) v11.5.1 (1000 urs) 1vCPU/4 GB vRAM	ESXi v6.0					

Gateways confirmed running IOS 15.x code and will be compatible with the newer version of CUCM.

Esquimalt (2 x MGCP GW)

- 2 x ISR Cisco 4321

Sindney Pat's Bay (1 x SRST with MGCP GW)

- 1 x ISR Cisco 4331



Work Completion Governance

The Maximum Delivery Interval (MDI) is defined as the maximum amount of time the Contractor is allowed for this work. The starting point for an MDI is the award date of the contract.

For this Work Order, the MDI is fixed to ten (10) days.

The Contractor must notify SSC of the completion of this work, no later than one (1) working day following the completion of the requested Work contained in the bid Solicitation, by issuing a Work Order Completion Notice (WOCN) to SSC. The WOCN must contain a statement that the implementation and testing of the requested Work is completed. The WOCN will also stipulate the date the Work was completed. This date will be used by SSC to measure the Contractor's compliance to mandatory MDI intervals.

The requested Work contained in the WO, and identified in the WOCN, will be considered accepted by SSC if SSC has not issued an incident ticket, where the cause is determined to be a Contractor implementation incident, within ten (10) working days from receipt of the WOCN.

Where SSC has conducted acceptance testing within ten (10) working days from receipt of a WOCN and raised an incident within this period, the WO will be considered incomplete.