Appendix A - Current CMN Information Technology Environment

Table of Contents

List of Tables

1 Summary

This Appendix provides an overview of the current computing and telephony environments at the Canadian Museum of Nature. It is intended to give Bidders a good sense of the overall makeup of the infrastructure including equipment types, quantities and overall architecture.

The Museum has two locations in the National Capital Region. The Victoria Memorial Museum Building (VMMB) in Ottawa which houses specimens and exhibits that are on display to the general public and the staff that are primarily concerned with public-facing services. The National Heritage Campus (NHC) in Gatineau, Quebec is the main storage facility for specimens that form the Museum's collection. The NHC houses the specimens used in research and the staff primarily concerned with the research.

IT Infrastructure is located in both sites. The main server room is located at the NHC and contains the majority of the IT equipment. The rest of the equipment is located in a server room in the basement of the VMMB.

The current environment includes:

- Approximately 235 supported personal computers (see Note to Bidders below) including 217 "WinTel" PCs and 18 Mac computers. Windows Office and Mac OS10.x/MS Office are desktop software standards;
- A network environment including 25 physical and 15 virtual Windows/Intel servers;
- Approximately 30 network printer/scanners;
- Eighteen (18) major corporate applications; and
- A voice telecommunications environment including two PBX switches, one at each site, connected to each other by a Bell Megaroute (T1) line and linked to the public network by Megalink lines to the local Central Office (CO) at both sites.

All information contained in this Appendix is accurate as of April 2016.

2   Application Software

There are 3 application software categories in use at the Museum:

    a) Major corporate applications;
    b) PC software (base and add-on); and
    c) Network System software.

As a general rule, CMN's approach is to use Commercial-Off-the-Shelf (COTS) software and then apply any required customization after installation (e.g. to user interfaces). The Museum has typically avoided in-house application development due to the risks and support/maintenance costs involved.

2.1   Major Corporate Applications

Major corporate applications are hosted on servers (physical or virtual) to meet the business needs of multiple users. The major corporate applications/services are:

Table 1 - CMN Major Corporate Applications

	Application/ Service	Description/Purpose	Comments/Additional Information
1	JD Edwards	Accounting and payroll	Running on a virtualized server platform. Upgraded in 2014.
2	Raiser's Edge	Fund raising campaign management, memberships and sponsorships	Currently resides on a single physical server.
3	MIMSY XG	Collection Management Software	Resides on a physical server and uses an Oracle database to store metadata.
4	Portfolio	Image management software	Resides on a physical server and functions similar to MIMSY except Portfolio only manages images.
5	TM Vista	Attraction admissions, reservations and scheduling software for visitor attractions	TM Vista processes 9,750 transactions monthly and uses a Microsoft SQL database.
6	Ungerboeck	Event planning service	The CMN Rentals group uses Ungerboeck, a Cloud based event management software. This application is not directly supported by CMN except for allowing access and installing an Active X control on the end user devices.
7	Exchange	Messaging software	The Microsoft Exchange Server 2010 currently resides on a physical server and provides messaging to all CMN staff and associates.

8	Documentation authoring tools	Microsoft Office suite	Microsoft Office tools 2013 (Word, PowerPoint, Excel, OneNote) are the predominant ones.
9	Media tools	Adobe Standard, Pro, Flash, Browsers, Elements and CS Suites, Autocad	
10	File Services	File storage and sharing	2 primary NAS environments (NetApp & Isilon)
11	Print Services	Network printing	Print queues are managed in Active Directory.
12	Interal	Facilities service desk & resource management	Transitioned to the Cloud in 2014. Minimal support provided by CMN.
13	KE EMu	Museum Collection Management System	Currently in Pilot phase with the collections team.
14	Yammer	Used for internal information.	Similar to Facebook. This is a Cloud service provided by Microsoft in the USA
15	V-parking	Parking management	Running on a CMN physical server. The vendor is currently managing this system.
16	BAS	Building Automation System	Provides alerts and reporting. Managed by Black & McDonald. Minimal support required by CMN.
17	Collaboration Services	CMN is considering an integrated solution	Future

Some corporate applications use, or are layered on Microsoft software products such as Internet Information Server (IIS), SQL Server and Visual C++ or Oracle's database product.

There are also a few specialized applications used by researchers for which support is provided on a best effort basis.

2.2 Personal Computer Software

Personal computer software consists of base software (i.e. software that is part of the standard configuration for every installed PC) and add-on software that is not installed on every PC. These are described in the following sections.

2.2.1 Base software

CMN maintains a base configuration for personal workstations to reduce configuration problems and facilitate initial rollout and subsequent maintenance and repair. The current base configuration consists of the following software:

Table 2: CMN Base Image Content

No.	Application/Service	Version
1	Windows 7 OS	
2	Drivers (specific to the workstation)	
3	Adobe Flash Player 18 Active X	18.0.x.x
4	Adobe Reader XI MUI	11.0.00
5	Adobe Shockwave Player	11.5.x.x
6	Adobe SVG Viewer	3.0
7	Google Chrome	44.0.x.x
8	Internet Explorer	9.x
9	Java ™	6.0.x
10	Microsoft .Net Framework	4.5.x
11	Microsoft Office Professional Plus 2013	15.0.x.x
12	Microsoft Visual C++ 2005 Redistributable	8.0.x
13	Microsoft Visual C++ 2010 x86 Redistributable	10.0.x
14	Mozilla Firefox	39.0
15	Roxio Creator Business	10.3
16	Symantec Endpoint Protection	12.1.x.x
17	VLC media player	2.2.x

Each PC requires an English and French image. The base configuration is periodically reviewed and, in particular, before major PC rollouts.

A few Windows 8.1 laptops and Microsoft Surfaces have been introduced in 2014 but no standard images have been created for them. Recently acquired workstations will be deployed with Windows 7 and Office 2013.

All user desktop, laptop, tablet, mobile or other computing devices that are located on the CMN production network are configured to deny local administration rights or privileges to users. Users that require such access are segmented from the production network on a separate administrative zone behind a firewall.

2.2.2 Add-on Software

Table 3 provides a list of add-on PC software, with an indication of the approximate number of installations for each one. Bidders should note that the level of support varies for each type of software. Additional detail on this aspect can be found in Appendix B, section 4.5.6.

Table 3 - Add-on PC Software

No.	Software Title	Purpose	approx.# current installs
1	ACDSee	personal image file management	63
2	Adobe Creative Cloud (Mac)	Graphic Design (Exhibits presentations)	1
3	Adobe Illustrator (Mac)	Graphic Design (Exhibits, Web and Research presentations)	9
4	Adobe InDesign (Mac)	Graphic Design (Exhibits, Web and Research presentations)	7
5	Adobe Photoshop (Mac)	Photo editing – advanced	9
6	Adobe Photoshop (PC)	Photo editing – advanced	26
7	Adobe Photoshop Elements	Photo editing	17
8	ArcView	Geographical Information Application	6
9	AutoCad	Architecture drawings – advanced	1
10	AutoCad Lt	Architecture drawings	5
11	Crystal Reports	Reporting tool for SQL databases	8
12	Delta	Research - taxonomy applic.	1
13	Digital Chart of the World	Maps for ArcView	6
14	EnterpriseOne (JDEdwards)- client	Finance, Pay and HR	38
15	File Maker Pro (Mac)	MAC personal database	4
16	Firefox – Mozilla (Mac)	Browser	15
17	InDesign Suite	Design (Exhibits and Research presentations)	1
18	Macromind Director (Mac)	Exhibit interactives development	
19	MS Front Page	basic html editing (Intranet)	7
20	MS Project	Proj. Management	18
21	MS Publisher	basic desktop publishing	3
22	MS Visio	Business and IT charts, diagrams	8
23	MultiMIMSY 2000 - client	Collections Management	20
24	OrgPlus 3.x	org charts	1
25	PC Anywhere 32	remote computer control	2
26	Portfolio - client	Digital Asset Management	5
27	ProCite	Research – citations	10
28	Quark Express (Mac)	Graphic Design (Exhibits and Research presentations)	
29	Raiser's Edge - client	Fundraising & Memberships	4
30	ReportSmith	Required for Collections System clients	11
31	Sequencer	DNA Research Tool	2
32	SigmaPlot	Statistics – Research	2
33	Smart Label Printer	Label printers	88
34	SmarTerm	Terminal Emulation	1
35	SPSS	Statistics – Research	2
36	SYSTAT	Statistics – Research	3
37	TM Vista - client	VMMB Admissions & Reservations	8
38	VectorWorks (Mac)	Exhibit Design, drawings	3
39	Volo View	Viewing AutoCad files	5
40	VPN Client (Cisco)	Remote Access	31
41	WinFax Pro	mass faxing (Communications dept)	5
42	WS FTP Pro	advanced FTP	

2.3   Network System Software

In addition to the inherent system management capabilities of the Windows Server NOS, CMN utilizes a range of Network system software products to facilitate network management and control functions (e.g. security, network monitoring, network backup, etc.):

Table 4 - Network System Software

	Application/ Service	Description/Comments
1	Active Directory (AD)	Current version of AD is 2008, configured in mixed mode. Currently resides on 3 domain controllers.
2	VMWare vSphere	The ESX cluster runs ESX 5.0.1 on 3 HP DL380 G7 servers.
3	Symantec MessageLabs	Cloud-based spam, virus & malware email protection.
4	Symantec Endpoint 12	Workstation Anti-Virus & Malware protection recently upgraded to Symantec Endpoint 12.
5	BlackBerry BES	BES 10 is deployed on a virtualized Windows server.
6	Infrastructure monitoring	N-Central from N-Able/Solar Winds
7	Network Traffic monitoring	CMN uses PRTG by Paessler for monitoring network traffic.
8	Wireless Monitoring	Future
9	Software Distribution and Patching Service	Microsoft System Center Configuration Manager (SCCM) 2007.
10	Network Backups	Symantec Backup Exec 2010 R3
11	Bradford Networks	Network Intrusion Detection/Response
12	Fortinet	Internet Content Monitoring
13	RADIUS	Remote Access Authentication

3   Network

The Museum has two network environments, one located at the NHC and the other at VMMB. The two environments are connected via a Bell T1 Megalink 1.5Mbps connection for phones and a Bell 200Mbps LAN extension. Both locations have independent connections to the Internet.

3.1   Topology

Figure 1 provides a visual representation of the network topology:

Figure 1 - CMN Network Diagram
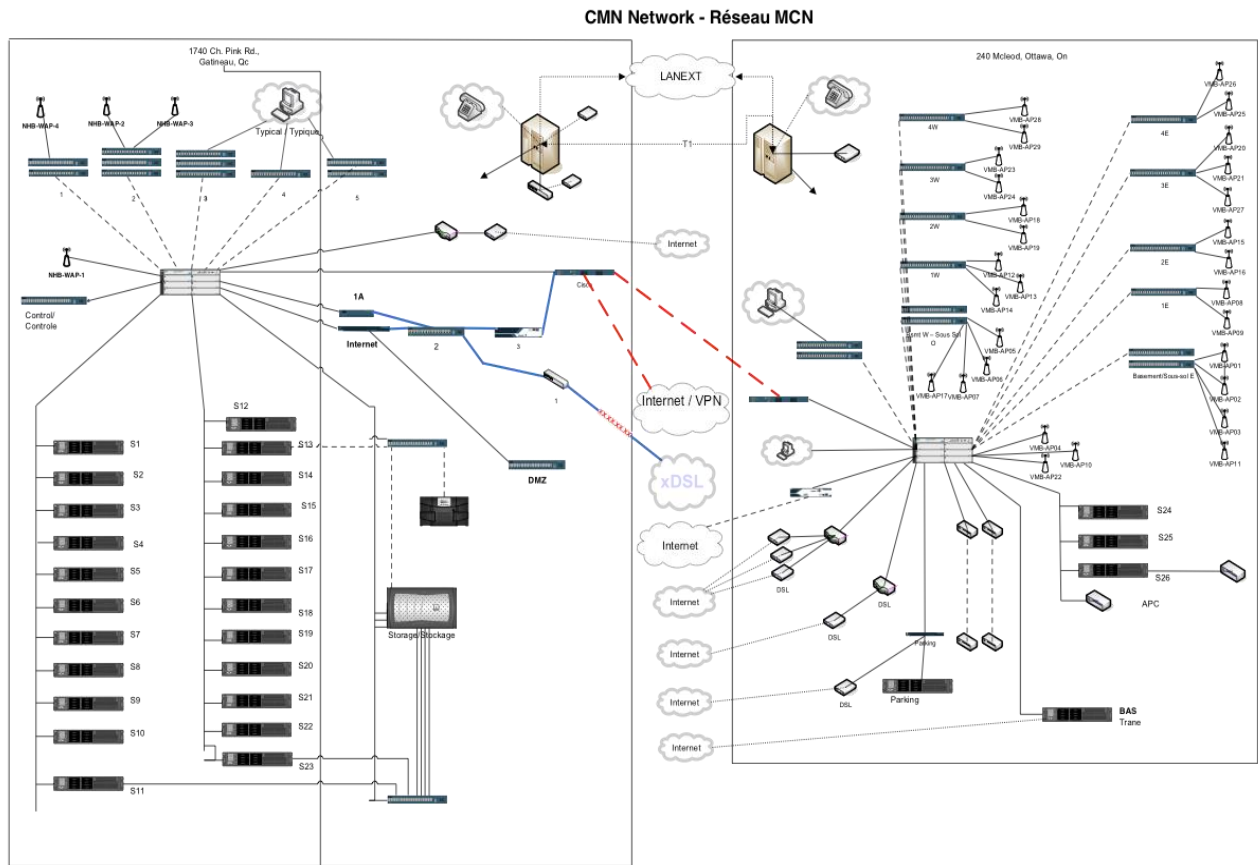
3.2 Server Equipment

3.2.1 Physical Servers

Table 5 presents a list of physical servers and their use:

Table 5 - CMN Physical Servers

No.	Server Name	Model	Description/Use
1	N-DC01	DL380 G5	Server 2008 R2 Domain Controller.
2	V-DC02	DL380 G6	Windows Server 2008 R2 Domain Controller.
3	N-ESX01	DL380 G7	N-ESX01 - vSphere
4	N-ESX02	DL380 G7	N-ESX02 - vSphere
5	N-ESX03	DL380 G7	N-ESX03 - vSphere
6	N-EXCHG	DL380 G7	Exchange 2010 Enterprise Server SP3
7	Exhibits	DL380 G3	Exhibits Server
8	INTRANET1	DL320	Internal website used by a few users
9	N-BACKUP	DL380 G6	Backup Exec Server
10	N-MAILSMR	DL380 G5	Exchange Mailbox Recovery Server
11	N-NETAPAV	DL380 G6	AV Server dedicated to the NetApp environment
12	N-PORTFOLIO	DL380 G5	Portfolio Server
13	N-SCCM	DL380 G7	SCCM - System Center Configuration Manager used for software update distribution
14	N-SCOM	DL380 G7	N-Central from N-Able/Solar Winds used for monitoring.
15	N-SCSQL	DL380 G7	SCSQL (used by SCCM)
16	N-TEST-1	DL320	Test - QA server
17	N-TMG	DL380 G7	MS Forefront Threat Management Gateway.
18	MULTIMIMSY	DL380 G7	Multimimsy Server for image management
19	N-RAISERS	DL380 G5	Raisers Edge server
20	RAVEN	DL380 Rev 01	Print server
21	N-SECURITY2	DL380 G7	Facilities Security Server
22	V-SECURITY1	DL380 G7	Facilities Security Server
23	V-PARKING	DL380 G7	Facilities parking ticket application server
24	N-ADMISS	DL380 G5	TM Vista Admissions Software

Notes:
1. Servers with names that start with N are hosted in the NHC server room.
2. Servers with names that start with a V are hosted in the VMMB server room. The exceptions are the Exhibits server which is hosted at VMMB.

3.2.2   Virtual Servers

CMN's approach is to increase the use of virtual servers over the life of the contract. Table 6 presents the current list of virtual servers and their use:

Table 6 - CMN Virtual Servers

No.	Server Name	Description/Use
1	N-DC03	Windows Server 2008 R2 Domain Controller.
2	N-BES10	Blackberry Enterprise 10 Server (UDS. Studio, BDS
3	N-Interal	Facilities Help Desk Server
4	N-NETMON2	Used to manage Network appliances including Firewalls and Switches.
5	N-PRTG	Network traffic monitoring
6	N-VCENTER	Used to manage VMWare environment
7	N-SAV	Endpoint Server
8	N-PRINT	Print Server
9	N-FINAPP	Finance Server JD Edwards
10	N-FINDEP	Finance Server JD Edwards
11	N-FINPRTL	Finance Server JD Edwards
12	N-FINWEB	Finance Server JD Edwards
13	N-Airwave	Aruba Controller Server
14	N-InsightIQ	Isilon reporting server
15	N-eMU	Mimsy and Portfolio replacement

Note:
1   Virtual servers are hosted on the ESX cluster in the NHC server room

3.3   Firewalls

Edge firewalls have been replaced in 2015. NHC and VMMB have independent Internet Access. NHC uses a Cisco ASA 5515 firewall while VMMB has a ASA 5525 firewall.

The DMZ's are logically separated as traffic destined for any device within the DMZ is analyzed by the firewall. The DMZ interface lands on an air gap switch, creating the physical separation from the production network.

3.4   Internet and Private Services

NHC currently has a 100 Mbps burstable Fiber from Bell Canada. VMMB has recently installed a 500 Mbps fiber which is now in production.

A connection to Shared Services Canada (SSC) is in place at NHC and available from both locations.

The network makes extensive use of VLANs to segregate functional networking areas.

3.5   Networking switches

The Museum's internal network has a stable and uniform backbone. Both locations have matching HP 5412zl core switches and all layer 2 switches are HP 3500yl-48G. OS release for both Layer 3 and Layer 2 class switches are currently running K.15.06.008. The core switches are configured in a similar fashion. Table 7 provides an inventory of CMN networking devices:

Table 7 - CMN Networking Devices

No.	Device Name	Model	Model Number
1	NHC-TR1-SW1	3500yl-48G	J8693A
2	NHC-TR1-SW2	3500yl-48G	J8693A
3	NHC-TR2-SW1	3500yl-48G	J8693A
4	NHC-TR2-SW2	3500yl-48G	J8693A
5	NHC-TR2-SW3	3500yl-48G	J8693A
6	NHC-TR2-SW4	3500yl-48G	J8693A
7	NHC-TR3-SW1	3500yl-48G	J8693A
8	NHC-TR3-SW2	3500yl-48G	J8693A
9	NHC-TR3-SW3	3500yl-48G	J8693A
10	NHC-TR3-SW4	3500yl-48G	J8693A
11	NHC-TR4-SW1	3500yl-48G	J8693A
12	VMB-1E-SW1	3500yl-48G	J8693A
13	VMB-1W-SW1	3500yl-48G	J8693A
14	VMB-2E-SW1	3500yl-48G	J8693A
15	VMB-2W-SW1	3500yl-48G	J8693A
16	VMB-3E-SW1	3500yl-48G	J8693A
17	VMB-3ESW2	3500yl-48G	J8693A
18	VMB-3W-SW1	3500yl-48G	J8693A
19	VMB-4E-SW1	3500yl-48G	J8693A
20	VMB-4W-SW1	3500yl-48G	J8693A
21	VMB-BE-SW1	3500yl-48G	J8693A
22	VMB-BE-SW2	3500yl-48G	J8693A
23	VMB-BW-SW1	3500yl-48G	J8693A
24	VMB-BW-SW2	3500yl-48G	J8693A
25	VMB-BW-SW3	3500yl-48G	J8693A
26	VMB-EXH-SW1	3500yl-48G	J8693A
27	VMB-EXH-SW2	3500yl-48G	J8693A
28	VMB-MER-SW2	3500yl-48G	J8693A
29	VMB-MER-SW3	3500yl-48G	J8693A
30	NHC-CORE-SW1	5412zl	J8698A
31	VMB-CORE-SW1	5412zl	J8698A
32	WLC01.MUS-NATURE.CA	MSM765	J9370A
33	WLC02.MUS-NATURE.CA	MSM765	J9370A
34	WLC03.MUS-NATURE.CA	MSM765	
35	WLC04.MUS-NATURE.CA		
36	VMB-ASA-01.mus-nature.ca	ASA5525	Edge Gateway from VMMB
37	CMNASA	ASA 5510, SSM CSC 10 K9	Edge Gateway from NHC
38	NHC-SC-FW1	ASA 5505	Edge Gateway to Shared Services

Notes:
1. CMN core switches currently use Static routing.
2. There are many Access Control Lists on the core switches at both locations.
3. There are currently 38 VLAN segments. VMMB uses 20 VLANs while NHC has 18.

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3.6 Remote Connectivity

Access for remote workers is currently provided through a Cisco ASA 5525 firewall at VMMB. The remote access VPN utilizes Cisco AnyConnect software and authenticates using Remote Authentication Dial-in User Service (RADIUS) with primary and secondary authentication servers.

3.7 Wireless

VMMB
An Aruba 7210 Wireless Access Controller System was installed at the VMMB in 2014. Over 80 Aruba Wireless Access Points (WAPs) are installed.

NHC
The NHC uses dual HP wireless controllers to manage the 20+ HP WAPs.

3.8 Security

CMN regularly hosts visiting researchers and has staff who bring their own devices and wish to connect to the network. CMN has purchased a Bradford Networks Sentry module to manage network access security.

3.9 Network Printers

There are currently 28 network printer/scanner devices. Mostly Konica Minolta and HP products.

3.10 User Devices – Computing and Smartphone

3.10.1 Computing
There is a total of roughly 235 user computing devices (i.e., Supported PCs) consisting of primarily of desktop stations, laptops, tablets and other mobile devices. Of this total, approximately 92% are Windows/Intel based and 8% are MAC (OS 10.x) based. Of the Windows/Intel devices, HP is the predominant brand.

3.10.2 Smartphone
Smartphone devices consist primarily of Blackberry devices with some iPhone and Android devices.

3.11 Cabling

Both phone and Ethernet cables terminate on a wall of Cross-connect BIX blocks. The wires are individually cross-connected to the phone system line card or to a switch.

The edge switches connects to the core switch using fiber links.

4   Storage

CMN Storage requirements are significant for the size of the organization. CMN IT manages two storage environments:

1. NetApp cluster (FAS3140 R5) installed in the NHC server room.
2. EMC Isilon X-Series installed at the VMMB.

NetApp –
- 5 TB of high speed SAS drive (approx. 3.5 TB used)
- 25 TB SATA total (approx. 18 TB used)
- 5 LUNs dedicated to Exchange
- 1 LUN dedicated to VMWare ESX Cluster

The NetApp hosts a VMware ESXi 5.0.1 environment with 15 VMs utilizing 2 TB of capacity. The NetApp also supports a Common Internet File Sharing (CIFS) environment that provides 9 TB consisting of mostly metadata pertaining to the Museum collections.

EMC Isilon –
The Isilon is a NAS appliance used to warehouse CIFS shared file data. The Isilon has a capacity of up to 30TB of usable storage.

5   Backups

Backups are provided for the servers and file storage. Symantec Backup Exec 2010 R3 is used to manage the backup jobs.

Notes:
1. The NetApp product uses NDMP protocol (proprietary to NetApp) .
2. Backup exec agent is used for VMWare.
3. Approximately 16.5 TB of data is backed up during the full backups and 3 to 4 TB for daily backups.
4. A Quantum tape library system is used.
5. Tapes are rotated and stored offsite with Iron Mountain.
6. NetApp provides SNAP technology which allows for more frequent recovery points for the various data types:

   a) Exchange
      • SNAPs are taken every 2 hours during the day (4 SNAPs during the day not verified). 1 SNAP is done at 7pm with a verify.
   b) File System
      • Incremental backups are done daily with full backup done weekly. Weekly backup become the Monthly every 4 weeks. Monthly backups turn into yearly.
   c) Servers
      • SNAPs are taken every 4 hours for the virtual servers.

6 Service Desk and IMAC Statistics

The Museum currently has approximately 235 internal IT users consisting of 135 FTEs and about 100 other "part time" users including students, interns, Museum Associates, volunteers, contractors, and others with various degrees of access to IT assets.

Service Desk, IMAC and other stats for 2015/16 are provided in Table 8 below. These include:

- 1082 Help Desk calls in 2015; and
- 414 IMACs in 2015 (excluding major installation/rollout projects of 20 or more computers at one time)

Table 8 - 2015/16 CMN Service Desk and IMAC Stats

Category	Sub-Category	2015													2016		
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOT	Jan	Feb	TOT
IMAC	Account	6	10	27	37	14	13	14	12	23	11	14	12	**193**	13	4	**17**
IMAC	Backup			3	1									**4**			**0**
IMAC	Cable		1		3		3					1		**8**	1		**1**
IMAC	H/W-Computer	8	5	4	5	3	2	2	2		2	5	3	**41**	2	2	**4**
IMAC	H/W-Other	1					3		6	1	1	1	5	**18**	2		**2**
IMAC	Other	5	3	2	3	4	6	8	5	7	1	4	2	**50**	3	1	**4**
IMAC	S/W	3	6	9		5	6	4	2	7	9	10	6	**67**	1	1	**2**
IMAC	Telephone	1	2		2	6	6	4	1	6	3	1	1	**33**	1	1	**2**
IMAC Sum	**TOTAL**	24	27	45	51	32	39	32	28	44	27	36	29	**414**	23	9	**32**
Incident	H/W	9	19	21	17	10	12	18	18	11	21	15	8	**179**	27	15	**42**
Incident	How-to	2	1	1		1	2	1	6	3	9	2	6	**34**	5	8	**13**
Incident	MAC						1	1					1	**3**			**0**
Incident	Malware	2		1	2		2	1		2	2		2	**14**			**0**
Incident	NetAlert													**0**			**0**
Incident	NetPrint-Other	4	7	23	9	4	4	2	15	8	9	7	15	**107**	3	9	**12**
Incident	NetPrint-Toner		2	2		2	3	3	1	2	3		1	**19**	1	6	**7**
Incident	Network	12	25	16	13	10	12	15	22	12	18	10	14	**179**	14	9	**23**
Incident	Other	1	2			1	1		3	5	1	1		**15**		2	**2**
Incident	P/W Reset	5	8	10	16	10	9	14	10	14	9	12	7	**124**	10	23	**33**
Incident	Peripheral													**0**			**0**
Incident	S/W-Office		2	1	2	6	10	4	2	2	3	1		**33**	1	5	**6**
Incident	S/W-Other	12	22	14	10	12	19	16	15	19	12	12	20	**183**	15	30	**45**
Incident	S/W-Outlook	8	13	6	10	10	13	12	12	7	11	4	5	**111**	11	8	**19**
Incident	Telephone	4	7	7	5	6	20	6	3	10	10	2	1	**81**	2	5	**7**
Incid Sum	**TOTAL**	59	108	102	84	72	108	93	107	95	108	66	80	**1082**	89	120	**209**
Incid Sum	**Sev1&2**	2	3	1	0	1	2	1	0	1	2	0	2	**15**	2	1	**3**
Incid Sum	**Sev3&4**	20	26	13	13	16	31	18	23	15	17	12	20	**224**	22	12	**34**
Incid Sum	**Sev5**	57	79	88	69	55	73	71	84	78	78	54	58	**844**	65	105	**170**

7   Voice Telecommunications

The Museum's voice telecommunications architecture is currently separate from the computing data architecture. It is based on Private Branch Exchange (PBX) switches at both the NHC and the VMMB sites with CAT5 communication cabling to each workstation. The two sites are linked together by Megaroute Services from Bell. The NHC PBX is linked to Bell's Hull Central Office (CO) and the VMMB PBX is linked to Bell's Ottawa CO through Megalink services.

The system consists of:

- 365 currently active lines;
- 3 trunk (overflow) line connections between each of the sites and the respective COs to handle overflow and emergencies;
- 370 Direct Inward Dialing (DID) numbers through the VMMB Megalink;
- Meridian Mail voice mail services (currently 240 user mail boxes);
- 290 handsets;
- The VMMB site includes incoming and outgoing Public Switched Telephone Network (PSTN) links while the NHC site has outgoing PSTN only.

Detailed system specifications are shown in Table 9:

Table 9 - CMN Voice System Hardware/Software Inventory

# items	Item
	Current Overall Voice Systems Stats
365	Lines programmed
240	Voice Mail Boxes
370	Direct Inward Dialing numbers (DIDs) Administered
290	Handsets
	VMMB PBX – Meridian Option 11 - Release 18.30
2	Cabinets (7 Slots Presently Available)
1	Visionary 2400XT Buffer Box
1	GVC 14400 FAX/Modem – PBX Maintenance
1	Battery Backup (3-4 hours battery life)
2	Power Supply (#NTAK04AB)
1	CPU Card (#NTAK01CA)
1	Digit Tone Receiver Card (#NTAK03DA)
2	T1 Digital Trunk Interface Cards (1 Megalink, 1 Megaroute) (#NTAK09BA)
2	Universal Trunk Card - 8 port Analog - Backup/Bell Lines (#NT8D14BA)
4	Digital Line Card - 16 TNs each (#NT8D02EA)
2	Analog Line Card - 16 TNs each (#NT8D09AK)
	Meridian Mail System - Release 10
	10 Ports - 10 hours memory
220	User Mailboxes (approx.)
22	Menus (CMN's Main Infoline)
6	Announcements (CMN's Main Infoline)

# items	Item
	NHC PBX – Meridian Option 11 - Release 21.35
3	Cabinets (8 Slots Presently Available)
3	Backup Batteries (total approx. 10 hours battery life)
1	Visionary 2400XT Buffer Box
1	GVC 14400 FAX/Modem – PBX Maintenance
3	Power Supply (#NTAK04AB)
1	System Core Card (#NTBK45AC)
2	T1 Digital Trunk Interface Cards (1 Megalink, 1 Megaroute) (#NTAK09BA)
1	Universal Trunk Card - 8 port Analog - Backup/Bell Lines (#NT8D14BB)
1	Digital Line Card - 16 TNs each (#NT8D02AA)
5	Digital Line Card - 16 TNs each (#NT8D02AB)
5	Digital Line Card - 16 TNs each (#NT8D02BA)
4	Digital Line Card - 16 TNs each (#NT8D02EA)
2	Analog Line Card - 16 TNs each (#NT1D09AK)
1	Analog Line Card - 16 TNs each (#NT8D09AK)
1	Analog Line Card - 16 TNs each (#NT8D09AG)
	System Management and Backup Console (also accessible through telnet to the switch)
1	HP Deskpro - EP/P500/6b/9/64c – (Serial # 6946 DCZ2 L231)
1	Cardinal 14400v32bis Modem – Avotus Maintenance Modem
1	DIGITAL TZ09 Dat Backup drive
	SCO Unix OpenServer(TM) Release 5 (sv1) (tty1A)
	Avotus InteleControl Version 6.4 - Release K03B
	Modules Installed: Communications Accounting, Database Maint, Directory, System Admin
	Handsets
42	Meridian 2006 Sets (6 keys, no display)
16	Meridian 2008 Sets (8 keys, with Display, some are Handsfree)
3	Meridian 2616 Sets (16 keys, with Display, Handsfree)
153	Meridian 2006 Sets (6 keys, no display)
46	Meridian 2008 Sets (8 keys, with Display, some are Handsfree)
19	Meridian 2616 Sets (16 keys, with Display, Handsfree)
279	**Total Handsets**
	Existing Lines which don't require handsets
30	500-type lines (Analog – FAX, Modem, or other) at the VMMB
60	500-type lines (Analog – FAX, Modem, or other) at the NHC

8   CMN IT Policies, Procedures and Plans

The Museum has adopted the Information Technology Infrastructure Library (ITIL) as a framework of IT services terminology and best practices. Following is a list of key documents listing Museum IT Policies, Procedures, and Plans:

a) **IT Strategic Plan**
   A five year plan developed by the IT Strategic Planning Committee and updated annually which outlines the Museum's IT priorities and major plans for the period.

b) **Policy on Acceptable Network and Device Use (CMN policy number 2004 dated December 2015**
   This Policy establishes the appropriate and acceptable use of corporate IT assets by users including such topics as accessing appropriate Internet sites, storage of appropriate material, software licensing, using assets for personal business, etc.

c) **CMN IT Security policy (CMN policy number 2406 dated January 2016)**
   This policy consolidates a number of existing IT security related procedures.

d) **IT Business Continuity Plan**
   This plan is currently included at a summary level in the Museum's overall Business Continuity Plan.   In general the continuity of IT services is critical to internal Museum productivity but is less important and time sensitive than some other systems and services which safeguard people and Museum collections.

e) **IT Procedures and Guidelines**
   The Museum maintains a library of written procedures and guidelines to guide and assist users on various IT issues and operations. Some major categories of these are:
   - Guidelines on acquisition of Personal Computer hardware;
   - Guidelines on acquisition and installation of Personal Computer software;
   - Opening, sharing and closing user accounts;
   - Remote access instructions (VPN, wireless, etc.);
   - Corporate data storage and backup guidelines, network drive data storage quotas, use of shared data repositories;
   - Restricted software applications;
   - IMAC and other user computer/telephone service request procedures; and
   - The most useful corporate software "how-to" tips.

   These are amended and added to as required.