



Hope and Life Outreach Internship 2018

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Hope and Life Outreach

- Non-profit outreach program targeting homeless and families in need.
- Somewhat began in 2004 but was named and established in 2007.
- They currently employ about 30 people and normally have 20-25 volunteers.
- Have a main office that includes:
 - Human resources
 - Financial department
 - Marketing and Grant writing/seeking
 - Also have social workers/case managers and programs for the community.
- Also so have a retail location to raise money.

Responsibilities and tasks:

- Create a small web based database app to keep track of certain aspects of their company. Mainly the services they offer and demographics of the community members that obtain such services.
- Update their server environment.
 - email
 - file server
 - Windows Domain controller. dhcp, dns, LDAP
 - active directory federation services
- Implement data protection and recovery plan
- Try to ensure little to no future downtime due to server environment.
- Security and threat protection
- DMZ for wireless network

Reasons for database:

- The company has grown a lot faster than expected.
- Currently using excel spreadsheets to capture all data
 - Not efficient
 - Lot of demographic data that could be used to target certain grants is being overlooked
 - They are not able to keep track of other data that could be used at a later date
 - The services they offer are not being recorded
 - They feel that there are certain trends with their guests that are being overlooked

PostgreSQL tables:

Client table

```
wesley — wesley@localhost:~/dbOutput — ssh wesley@192.100.5.40 — 103x46
```

Column	View "public.client" Type	Collation	Nullable	Default
client_id	integer			
name_last	character varying(40)			
name_first	character varying(30)			
name_middle	character varying(30)			
name_suffix	character varying			
name_alias	character varying(120)			
dob	date			
ssn	character(11)			
gender_code	character varying(10)			
pronoun_subject	character varying			
pronoun_object	character varying			
pronoun_possessive	character varying			
pronoun_possessive_pronoun	character varying			
pronoun_reflexive	character varying			
hispanic_origin_code	character varying(10)			
needs_interpreter_code	character varying(10)			
language_code	character varying(10)			
veteran_status_code	character varying(10)			
sexual_minority_status_code	character varying(10)			
clinical_id	integer			
king_cty_id	integer			
spc_id	integer			
comments	text			
med_issues	text			
medications	text			
med_allergies	text			
last_photo_at	timestamp(0) without time zone			
issue_no	integer			
resident_id	integer			
added_at	timestamp(0) without time zone			
added_by	integer			
changed_at	timestamp(0) without time zone			
changed_by	integer			
is_deleted	boolean			
deleted_at	timestamp(0) without time zone			
deleted_by	integer			
deleted_comment	text			
sys_log	text			
name_full	text			
name_full_alias	text			
is_protected_id	boolean			

Staff

Column	View "public.staff" Type	Collation	Nullable	Default
staff_id	integer			
username	character varying(21)			
username_unix	character varying(21)			
staff_email	character varying(60)			
kc_staff_id	integer			
name_last	character varying(40)			
name_first	character varying(30)			
name_first_legal	character varying(30)			
name_full	text			
is_active	boolean			
login_allowed	boolean			
staff_title	text			
agency_program_code	character varying(10)			
agency_project_code	character varying(10)			
staff_position_code	character varying(20)			
agency_facility_code	character varying(10)			
staff_shift_code	character varying(10)			
agency_staff_type_code	character varying(10)			
staff_employment_status_code	character varying(10)			
hired_on	date			
terminated_on	date			
supervised_by	integer			
pgp_key_public	character varying(1024)			
gender_code	character varying(10)			
notes	text			
added_by	integer			
added_at	timestamp(0) without time zone			
changed_by	integer			
changed_at	timestamp(0) without time zone			
is_deleted	boolean			
deleted_at	timestamp(0) without time zone			
deleted_by	integer			
deleted_comment	text			
sys_log	text			

Server started to fail:

- Services were stopping and had to be manually restarted
- Exchange server/mail servers in general are sometimes difficult
- All services were being handled by one machine
- Not backed up
- No firewall

Technologies, resources, utilities:

- Hypervisor
 - replication and fault tolerance
- Hardware based firewall
 - FreeBSD based
 - openVPN server
- Altaro VM backup
- Crashplan cloud based backup

Hypervisor

The screenshot displays the Hyper-V Manager interface. On the left, a tree view shows the hierarchy: Hyper-V Manager > HV-1 > HV-2. The main area is divided into three sections:

- Virtual Machines:** A table listing VMs with columns for Name, State, CPU Usage, Assigned Memory, Uptime, and Status.
- Checkpoints:** A tree view showing checkpoints for VM 'DC-1', including a 'Now' checkpoint.
- DC-1 Details:** A summary of the selected VM's properties.

The **Actions** pane on the right provides context-sensitive options for the selected VM (HV-1 or DC-1).

Name	State	CPU Usage	Assigned Memory	Uptime	Status
DC-1	Running	0%	8192 MB	19.13:49:23	
fileServer	Running	0%	16384 MB	24.11:49:15	
lamp-server	Off				

Checkpoints for DC-1:

- DC-1 - (7/2/2018 - 4:58:36 PM)
 - DC-1 - (7/3/2018 - 1:05:00 PM)
 - DC-1 - (7/7/2018 - 3:59:56 PM)
 - DC-1 - (7/9/2018 - 8:20:13 AM)
 - DC-1 - (7/18/2018 - 8:25:55 AM)
 - DC-1-Groups (7/26/2018 - 7:57:36 PM)
 - Now

DC-1 Properties:

- Created:** 7/2/2018 6:25:40 PM
- Configuration Version:** 8.0
- Generation:** 2
- Notes:** None
- Clustered:** No
- Heartbeat:** OK (Applications Healthy)

Actions for HV-1: New, Import Virtual Machine..., Hyper-V Settings..., Virtual Switch Manager..., Virtual SAN Manager..., Edit Disk..., Inspect Disk..., Stop Service, Remove Server, Refresh, View, Help.

Actions for DC-1: Connect..., Settings..., Replication, Turn Off..., Shut Down..., Save, Pause, Reset, Checkpoint, Revert...

Replication

Replication Health for "DC-1"

Replication

Replication State:	Replication enabled
Replication Mode:	Primary
Current Primary Server:	hv-1.mainOffice.haloministry.org
Current Replica Server:	HV-2.mainOffice.haloministry.org
Replication Health:	Normal

Statistics for past 19 Hours 10 Minutes

From time:	12/8/2018 9:00:03 PM
To time:	12/9/2018 4:10:22 PM
Average size:	23 MB
Maximum size:	276 MB
Average latency:	0:00:00
Errors encountered:	0
Successful replication cycles:	76 out of 76 (100%)

Pending replication

Size of data yet to be replicated:	4 KB
Last synchronized at:	12/9/2018 3:57:01 PM

Reset Statistics Save As... Refresh Close

Powershell

Select Administrator: C:\Windows\system32\cmd.exe - powershell

```
C:\Users\administrator.MAINOFFICE>powershell
Windows PowerShell
Copyright (C) 2016 Microsoft Corporation. All rights reserved.

PS C:\Users\administrator.MAINOFFICE> STARTALTARO
PS C:\Users\administrator.MAINOFFICE>
```

Enter number to select an option:

sconfig

```
C:\Windows\System32\cmd.exe - C:\Windows\system32\sconfig.cmd
Microsoft (R) Windows Script Host Version 5.812
Copyright (c) Microsoft Corporation. All rights reserved.

Search 14) Exit to Command Line
Search
Search
Search
Enter number to select an option: 6

List of options:
=====
                        Server Configuration
=====
1) 201
2) 201
3) Def 1) Domain/Workgroup:          Domain:  mainOffice.haloministry.org
      2) Computer Name:              HV-1
Select 3) Add Local Administrator
(A)ll 4) Configure Remote Management  Enabled
      5) Windows Update Settings:    Automatic
Downl 6) Download and Install Updates
      7) Remote Desktop:              Enabled (more secure clients only)

      8) Network Settings
      9) Date and Time
      10) Telemetry settings          Enhanced
      11) Log Off User
      12) Restart Server
      13) Shut Down Server
      14) Exit to Command Line

Enter number to select an option: 
```

Status / Dashboard



System Information



Name	pfSense.mainOffice.haloministry.org
User	admin@10.0.8.2 (Local Database)
System	pfSense Serial: MXL41013CV Netgate Device ID: cb029e4275fc0fa5ed86
BIOS	Vendor: AMI Version: 8.17 Release Date: Fri Oct 25 2013
Version	2.4.4-RELEASE (amd64) built on Thu Sep 20 09:03:12 EDT 2018 FreeBSD 11.2-RELEASE-p3 Version 2.4.4_1 is available. Version information updated at Tue Dec 11 10:04:17 +05 2018
CPU Type	Intel(R) Core(TM) i3-3240 CPU @ 3.40GHz 4 CPUs: 1 package(s) x 2 core(s) x 2 hardware threads AES-NI CPU Crypto: No
Kernel PTI	Enabled
Uptime	14 Hours 28 Minutes 38 Seconds
Current date/time	Tue Dec 11 10:05:36 +05 2018
DNS server(s)	<ul style="list-style-type: none"> 127.0.0.1 10.1.10.11

Interfaces



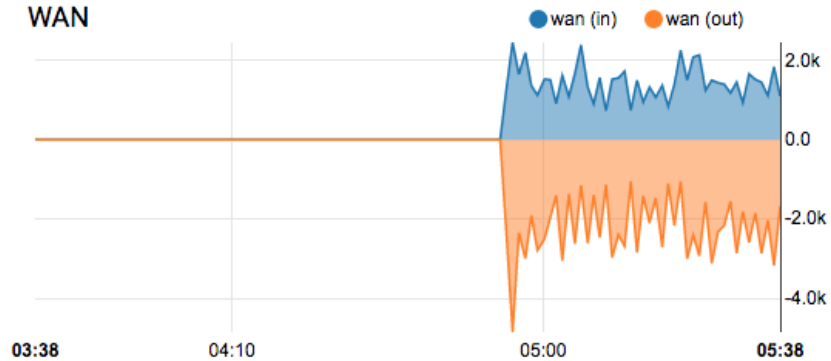
WAN	↑	1000baseT <full-duplex>	50.242.183.53
LAN	↑	1000baseT <full-duplex>	10.1.10.1
OTHER	↑	100baseTX <full-duplex>	192.168.1.1

OpenVPN



Open_VPN UDP4:1194	
Name/Time	Real/Virtual IP
wchildress	166.170.35.252:45608
Tue Dec 11 10:03:31 2018	10.0.8.2

Traffic Graphs



Several layers of backups

BU-1 on HV-2 - Virtual Machine Connection

File Action Media Clipboard View Help

backUps

- Documents
- Downloads
- Music
- Pictures
- Videos
- Local Disk (C:)
- backUps
 - Altaro
 - Data
- PerfLogs
- Program Files
- Program Files (x86)

Server Backup (D:)

- Desktop
- Documents
- Downloads
- Music
- Pictures
- Videos
- Local Disk (C:)
- Server Backup (D:)
 - crashPlan
 - 8595339157111063
- Network

Code42

PRO Online Backup Set — 220.0 GB

- CrashPlan PRO Online
Backup scheduled
- crashPlan
Backup complete

hv-1 - Remote Desktop Connection

Altaro VM Backup

ALTARO VM BACKUP

Dashboard

Schedule Settings

Refresh Infrastructure

Search VM Name...

Infrastructure

- Microsoft Hyper-V
 - DC-1
 - fileServer
 - lamp-server

Backup Schedules

- Mo Tu We Th Fr Sa Su Backup Schedule DC-1 (HV-1) 22:00 Enabled
- Mo Tu We Th Fr Sa Su Backup Schedule fileServer (HV-1) 23:00 Enabled

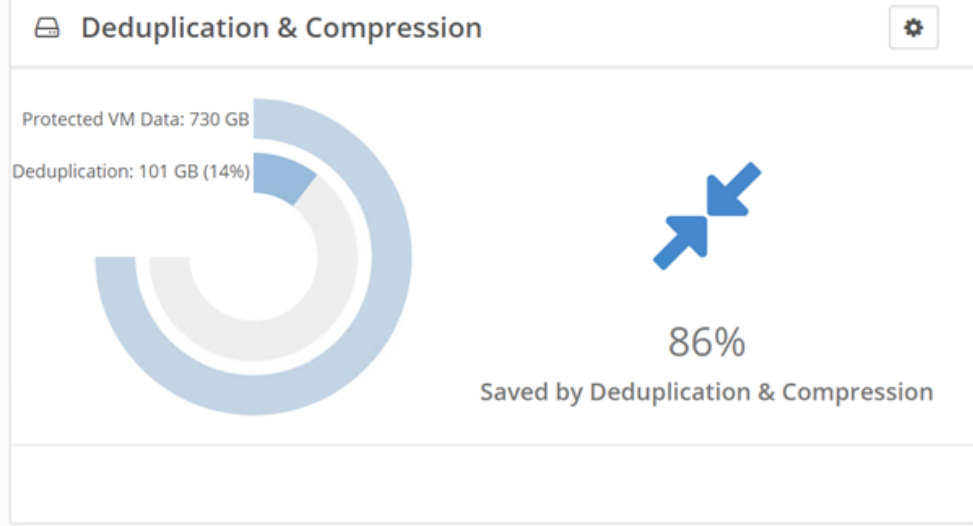
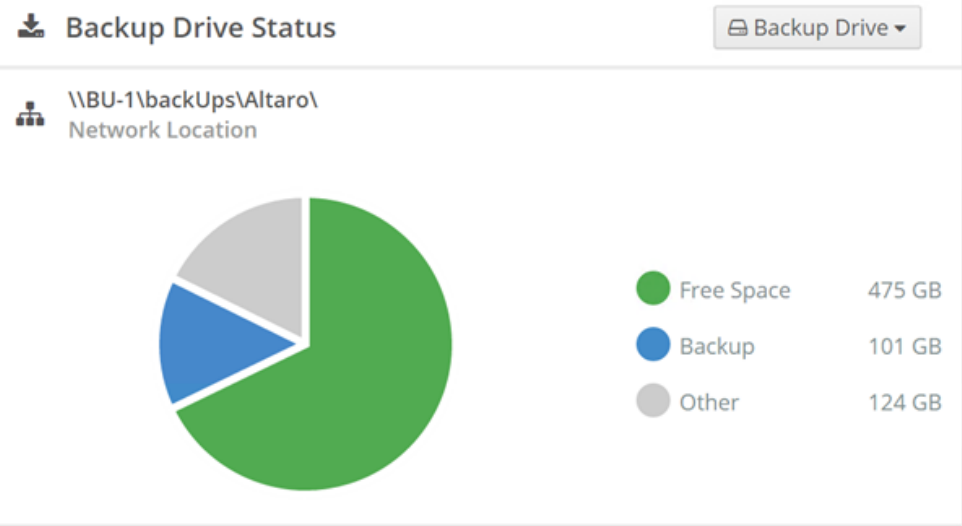
Dashboard

Dashboard

- Setup
 - Hosts
 - Backup Locations
 - Schedule Settings
 - CDP Settings
 - Retention Policy
 - Notifications
 - Advanced Settings
 - VSS Settings
 - Master Encryption Key

- Virtual Machines
 - Take Backup

Overview Details



Active & Upcoming Operations

0	0	0
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Recent Operations

Showing the latest 50 Operations. Not all CDP Backups are listed here ⓘ

How my classroom experience helped me during internship:

- Problem solving mentality
- Knowledge of technologies and utilities
- Efficiency / absolute approach
- Research
 - Seek out several solutions
 - Able to make a decision based on such research

Software discounts & donations:

The screenshot displays the Microsoft 365 Admin Center interface. On the left is a navigation pane with a search bar and several menu items: Office 365 apps, Add-In, Admin, Nonprofit Portal, and Security & Compliance. The main content area is titled 'Home' and includes a search bar for users, groups, settings, or tasks. Below the search bar are two primary sections: 'Active users' and 'Billing'. The 'Active users' section lists actions such as 'Add a user', 'Delete a user', 'Edit a user', and 'Reset a password'. The 'Billing' section shows a 'Total balance: \$0.00' and options to 'Update payment details' and 'View my bill'.

Navigation Pane:

- Office 365 apps
- Add-In
- Admin
- Nonprofit Portal
- Security & Compliance

Main Content Area:

Home [Customize your home](#) Hope and Life Outreach

Search users, groups, settings or tasks

Active users >

- + Add a user
- 🗑️ Delete a user
- ✎️ Edit a user
- 🔍 Reset a password

Billing >

Total balance: \$0.00

- ✎️ Update payment details
- 👁️ View my bill

Software discounts & donations:

Donation Details

Microsoft is pleased to support Hope And Life Outreach with a Microsoft software donation valued at US\$1,504.00*.

Your donation includes the following (the fair market value is listed after each item):

Product ID	Name	Qty	Unit FMV	Extended FMV
L-47924	Windows Pro Full Operating System – Get Genuine	8	188.00	1,504.00

Total Estimated Fair Market Value: USD **\$1,504.00**

Donation Details

Microsoft is pleased to support Hope And Life Outreach with a Microsoft software donation valued at US\$2,753.00*.

Your donation includes the following (the fair market value is listed after each item):

Product ID	Name	Qty	Unit FMV	Extended FMV
LVS-47862	Windows Server Standard	8	166.00	1,328.00
LS-2406	Windows Server User CAL 25	57	57.00	1,425.00

Total Estimated Fair Market Value: USD **\$2,753.00**

Challenges of this internship:

- Communicating with management
 - Hard to make decisions
- Working with a small budget
 - Repurposed Dell r610 servers
 - Turned older pc into firewall appliance
- Trying not to get frustrated
 - Microsoft and budget don't mesh well
 - Everything must work together
 - Microsoft not pleasant to work with

What I've learnt from this experience:

- Learned new utilities
 - backup and redundancy
 - Utilization of Hypervisors
- Best practices
- Communication skills
 - Working with management to try and best suit their needs
- Confidence
 - Through learning and experience.
- Valuable information and resources
 - Lot of donations for the nonprofit sector