BCNET

An Interactive Solution to Easily Manage Network Assets and Connectivity

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What is Patch Manager?

- It is an enterprise software application that provide a solution for documenting and managing changes to the physical layer connectivity and assets for your campus, building, data centre and or outside plant network.
- With realistic modeling mapping one-to-one with actual infrastructure. This system provides you with a simple to use but powerful application.

Patch Manager can assist you to:

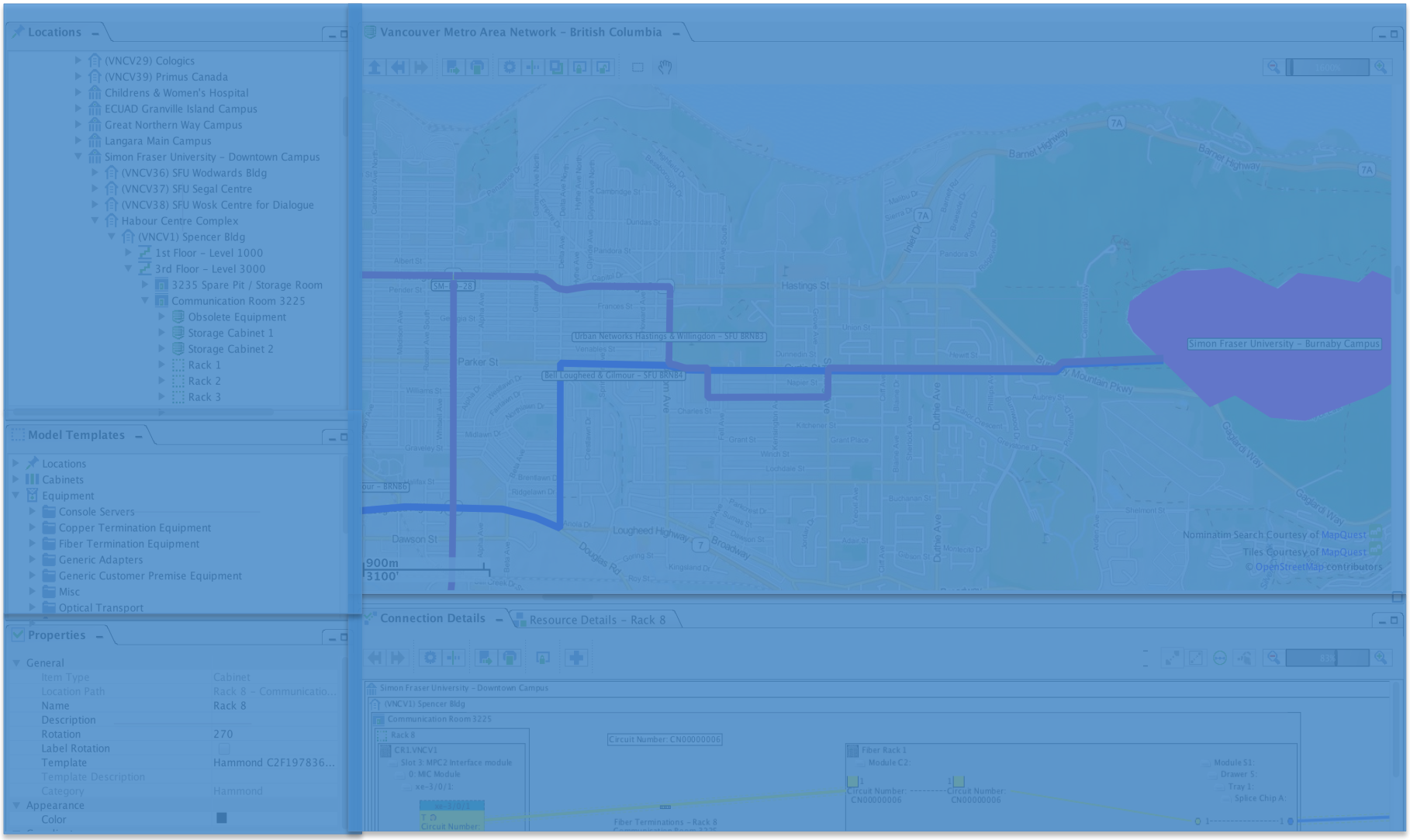
- Manager your copper, fiber and power infrastructure
- Manage your Moves, Adds and Changes
- Manage your available space, network and power capacity
- Assist in troubleshooting physical layer network problems
- Coordinate and plan work with teams and projects
- Generate engineering and Management reports on your network assets
- Easily find data

Patch Manager concept

The main concept which Patch Manager's system uses is:

- Building standard templates for your assets types, Cables and locations
- Once built, drag and drop as needed
- Then make the connection between the assets

Patch Manager's main screen



BCNET pre-installation

BCNET documentation before PatchManager

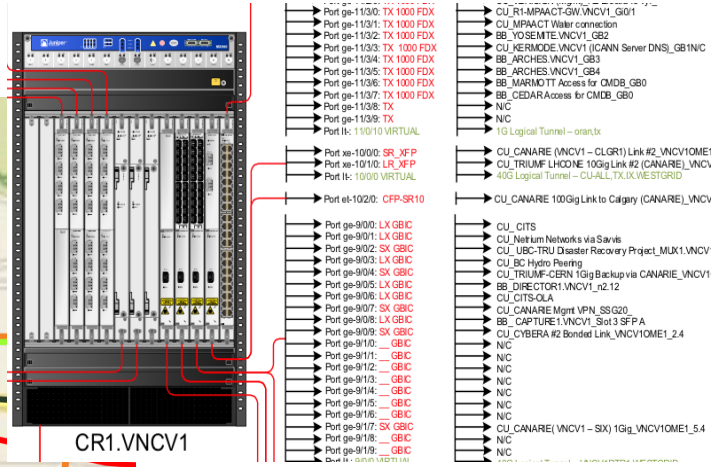
Spreadsheet to track Hardware and Fiber Assets, Circuit details

Fiber State	Operational Status	Circuit Number	Description	Rack	Panel	Bulkhead	Term. Type
Terminated	Working	CN00000006	CR1.VNCV1 to CR2.VNCV1 Link #2	VNCV1 3225 Fiber Rack 1	C2	1,2	SC
Terminated	Working	CN00000072	BC Hydro (HDMH81) Fiber cross connect link 1 to Fusepoint Colo	VNCV1 3225 Fiber Rack 1	C2	3,4	SC
Terminated	Working	CN00000073	BC Hydro (HDMH127) Fiber cross connect link 2 to Fusepoint Colo	VNCV1 3225 Fiber Rack 1	C2	5,6	SC
Terminated	Working	CN00000015	SW1.VNCV1 to SW2.VNCV1 Link #2	VNCV1 3225 Fiber Rack 1	C2	7,8	SC
Terminated	Unused	CN00000001	Canarie 100G to Edmonton via Telus	VNCV1 3225 Fiber Rack 1	C2	9,10	SC
Terminated	Unused			VNCV1 3225 Fiber Rack 1	C2	11,12	SC
Terminated	Unused			VNCV1 3225 Fiber Rack 1	C2	13,14	SC
Terminated	Working		Western ROADM cct to Point Roberts	VNCV1 3225 Fiber Rack 1	C2	15,16	SC
Terminated	Working		Canarie (OME 2/2) to Enviroment Canada	VNCV1 3225 Fiber Rack 1	C2	17,18	SC
Terminated	Unused			VNCV1 3225 Fiber Rack 1	C2	19,20	SC
Terminated	Working	CN00000027	Canarie VNCV1OME1 Port 13.1 - OC192 to Seattle via ALLSTREAM	VNCV1 3225 Fiber Rack 1	C2	21,22	SC
Terminated	Unused			VNCV1 3225 Fiber Rack 1	C2	23,24	SC

Originating Device	Interface Name	Terminating Device	Interface Name	Detail 1 Location	Detail 1	Detail 2 Location
CR1.KAMTX1.BC.NET	GE-0/0/0	TRU Equipment	N/A	KAMTX1	DFIB20M-S-SCLC	KAMTX1
CR1.KAMTX1.BC.NET	GE-0/0/1	CITS - RNC Equipment	N/A	KAMTX1	DFIB20M-S-SCLC	KAMTX1
CR1.KAMTX1.BC.NET	GE-0/0/2	IHA Equipment	N/A	KAMTX1	DFIB20M-S-SCLC	KAMTX1
CR1.KAMTX1.BC.NET	GE-0/0/3	TRU Equipment	N/A	KAMTX1	DFIB20M-S-SCLC	KAMTX1
CR1.KAMTX1.BC.NET	GE-0/2/0	TELUS Switch	Gi1/0/26	KAMTX1	DFIB20M-M-LCLC	
CR1.KAMTX1.BC.NET	GE-0/2/1	BELL	N/A	KAMTX1	DFIB20M-S-SCLC	KAMTX1
CR1.KAMTX1.BC.NET	GE-0/3/6	NP1.KAMTX1.BC.NET	NIC1	KAMTX1	14 Foot Copper Patch Cord	

BCNET CCT #	Service Provider Circuit Number	Client #					
CN00000001	55/L9XX/334658/000/BCTC/000	CU_	SW5.VNCV1 VANIX Peering 10Gig Uplink	SW5.VNCV1	0/0/31	Customer Equipment	
CN00000002	XC0001326	CU_(	CR1.VNCV1 to CR2.VNCV1 Link #1	CR1.VNCV1	xe-5/0/0	CR2.VNCV1	
CN00000003			CR1.VNCV1 to CR2.VNCV1 Link #2	CR1.VNCV1	xe-3/0/1	CR2.VNCV2	
CN00000004		CU_(					
CN00000005		BB_					
CN00000006		BB_					
CN00000007		BB_	BCNET ORAN UPLINK TO VCTR1 Link #1	CR1.VNCV1	xe-5/0/1	VNCV1OME2	

Diagrams to track Fiber Routes and Port Assignments



Pre-planning your file structure

We can not stress this point more.

- Understand what level of detail you need or want to show.
- Do you have the Data to support this level of detail?
- How much time and personnel resources to do have to commit to plan, build, populate and operationalize the system?
- Do you have naming standards that can scale.
  - Location
  - Circuit numbers
  - Cables

Understanding your existing data BCNET Location example

Do you have all the details in your existing spreadsheets?

- For example a BCNET location in Patch Manager consist of the following hierarchy.
  - Province, Metro Area, City, Campus, Building, Floor, Room, Rack, Rack RU

- The existing data in our spread sheets where only showing
  - Building, Room , Rack (All in one column)

- In order to populate the data we needed to add the following
  - Separate the location field in the SS to individual columns and add all the missing fields.
  - Change the building field information to use new Bldg. naming standard.
  - This was needed for all the data to be imported into the correct location in the system.

Understanding your existing data BCNET Fiber cable example

In order to build or import the fiber cables. BCNET needed to work on the following:

- BCNET had this information shown with the following attributes:
  - Start Location
  - Rack, Panel, Bulkhead
  - End Location
  - Rack, Panel, Bulkhead
  - Termination Type
  - Supplier
  - Fiber State
  - Operational Status
  - Circuit Number
  - Circuit Description

Understanding your existing data BCNET Fiber cable example cont.

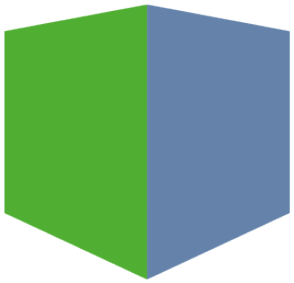
BUT, in order for BCNET to build or import the cables into Patch Manager. BCNET needed to have this information added:

- What Type of Fiber panel are the Fiber cables terminating on?
  - What level of detail do you want to capture?
  - Build panel templates to the details that you require.
- At this point BCNET then found it easier to manually build the panels and span cables.
- Once the panel and span cable was built the physical route of the cable needed to be added.

Final notes

- It always takes longer to implement than you originally expect.
- Take extra time at the beginning to plan the level of detail you want to see in final outcome.
- Establish a good working relationship with your provider.
- This is an system that does need to be maintained to add new features etc. Make sure you have resources assigned for this.

Questions ?



PATCH MANAGER
INFRASTRUCTURE MANAGEMENT SOFTWARE

For more information visit Patch Manager's web site:

www.patchmanager.com

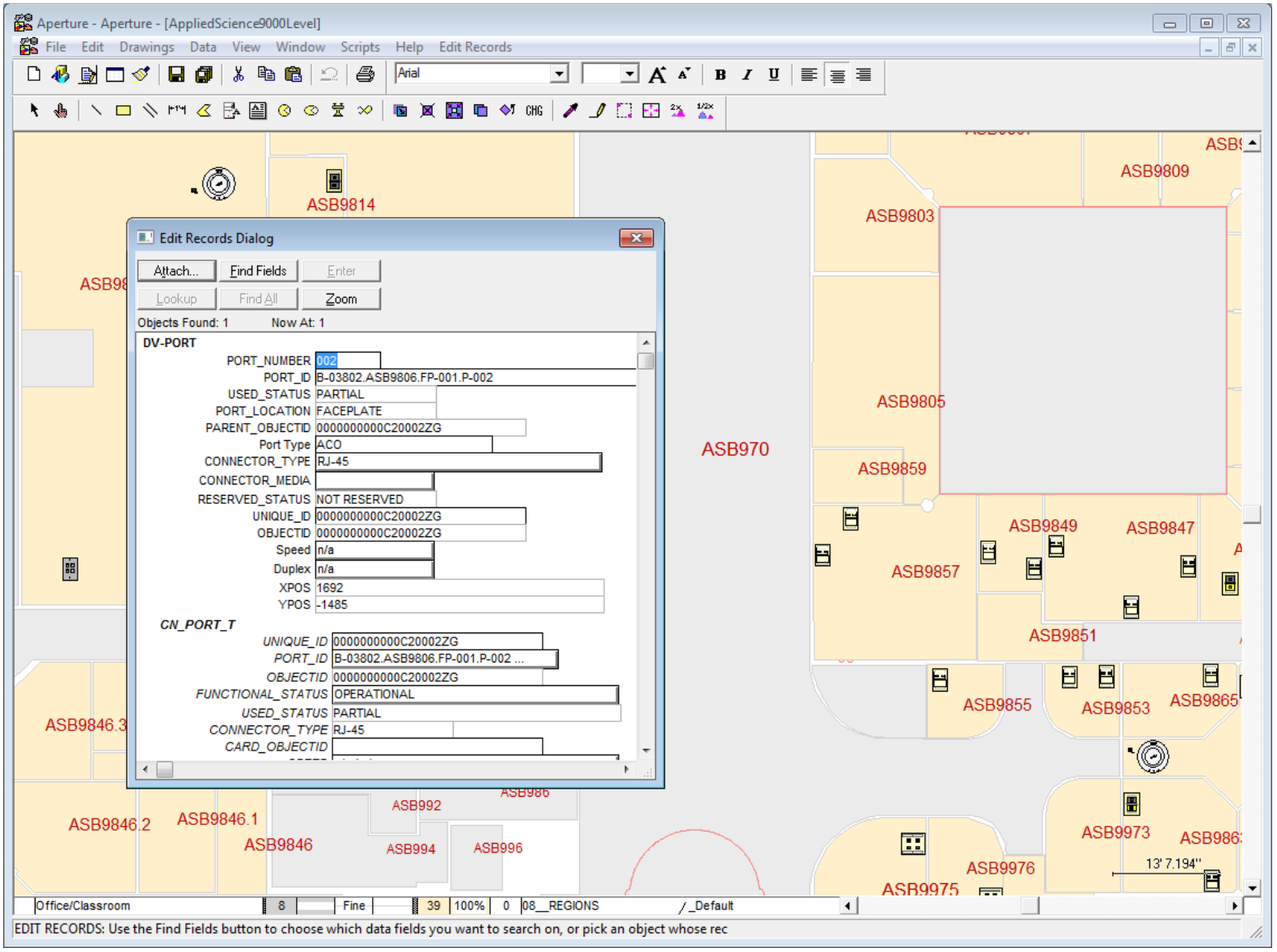
SFU Pre-installation

Prior migration to Patch Manager

- Home grown database to document the wired Copper network
  - Data stored as text in a database
  - Connection is simply a relation between ports
- Spreadsheet to document the campus Fibre plant
  - A list of all cables
  - Specific information about their terminations
  - Text description of the path each cable takes accompanied by photographs

Prior migration to Patch Manager

- Aperture
  - CAD like tool to draw floorplans and equipment
  - Very flexible
  - Hard to maintain any consistency in data records
    - Difficult to enforce standards


Aperture - Aperture - [AppliedScience9000Level]
File Edit Drawings Data View Window Scripts Help Edit Records
Edit Records Dialog
Attach... Find Fields Enter
Lookup Find All Zoom
Objects Found: 1 Now At: 1
DV-PORT
PORT_NUMBER 002
PORT_ID B-03802.ASB9806.FP-001.P-002
USED_STATUS PARTIAL
PORT_LOCATION FACEPLATE
PARENT_OBJECTID 0000000000C20002ZG
Port Type ACO
CONNECTOR_TYPE RJ-45
CONNECTOR_MEDIA
RESERVED_STATUS NOT RESERVED
UNIQUE_ID 0000000000C20002ZG
OBJECTID 0000000000C20002ZG
Speed n/a
Duplex n/a
XPOS 1692
YPOS -1485
CN_PORT_T
UNIQUE_ID 0000000000C20002ZG
PORT_ID B-03802.ASB9806.FP-001.P-002 ...
OBJECTID 0000000000C20002ZG
FUNCTIONAL_STATUS OPERATIONAL
USED_STATUS PARTIAL
CONNECTOR_TYPE RJ-45
CARD_OBJECTID
ASB9814
ASB9809
ASB9803
ASB9805
ASB970
ASB9859
ASB9849
ASB9847
ASB9857
ASB9851
ASB9855
ASB9853
ASB9865
ASB9846.3
ASB9846.2
ASB9846.1
ASB9846
ASB992
ASB994
ASB996
ASB9973
ASB9976
ASB9975
13' 7.194"
Office/Classroom
Fine
100%
08__REGIONS
/_Default
EDIT RECORDS: Use the Find Fields button to choose which data fields you want to search on, or pick an object whose rec

Benefits of Patch Manager

- Effective modelling of equipment
  - Front and Rear Views
  - Create pre-defined templates of equipment
  - Ability to search for specific equipment
  - Internal Connections

- History Overview
  - Ability to view log of past changes to an object

Benefits of Patch Manager

- Modelling Cables
  - Cables are entities with their own data and characteristics
  - Cable can be customized by
    - Cable elements
    - Connectors and port compatiblities
  - Assign attributes to cables
  - Model pathways for cables

Importing Data into Patch Manager

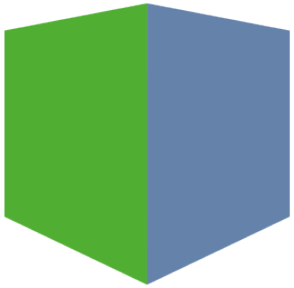
- Important Decisions
  - Analyse existing data and their users
  - Approach for modelling templates

Importing Data into Patch Manager

- Initial setup:
  - Buildup of Buildings, Floor plans and Network Closets
- Designing templates
- Importing equipment
- Importing connections
  - Setruns
  - Closet Patches

After migration into Patch Manager

- Some challenges
  - Inability to keep floorplans in a vector graphics format
  - Inability to modify floorplan
  - Understanding the construction of queries for reports
  - Making exceptions for a specific instance of a template



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http://surveys.bc.net/s/workshop-survey-2016/