



# Example AsciiDoc Document

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# Chapter 1. Example chapter

## 1.1. Example chapter section

With some example text. And folowed by an example sub section.

### 1.1.1. Background to the structure of the document

Each chapter and section can be kept in a separate folder and access can be provided on a book, chapter, or section level. The idea behind this is to be able to provide editor access to parts of the document by third parties. Also each chapter and section can be built as its own standalone document or web page so that parts of the overall document can be distributed as individual documents for review or editing without disclosing the entire document with all chapters.

*Advantages:*

1. Reduces workload for reviewers
2. Allows granular access to material subject to NDAs
3. Reduces the impact of errors made in sections
4. Allows integration with git so as to have tight version control in an automated fashion
5. Can integrate other documents and material
  - a. Text configuration data (JSON, txt, YAML, etc) can be linked as includes
  - b. Diagrams and tables are linked as includes
    - i. Original CSVs are untouched and stay up to date in the document
6. Does NOT require word as the document is ASCII at heart
  - a. Material is easiy tranferred to other documents
  - b. Recombining the document and expanding or shrinking it are very simple and do not destroy the removed data
  - c. Security for the document is high as any data that is removed is NOT present in the output but CAN be seen in the version control (github)
7. When integrated with git ownership of individual lines of documentation can be viewed
  - a. The history of each line of documentation can be followed through each commit
  - b. Merging the document with other documents is made simpler
  - c. The document CAN be split across sources and repositories

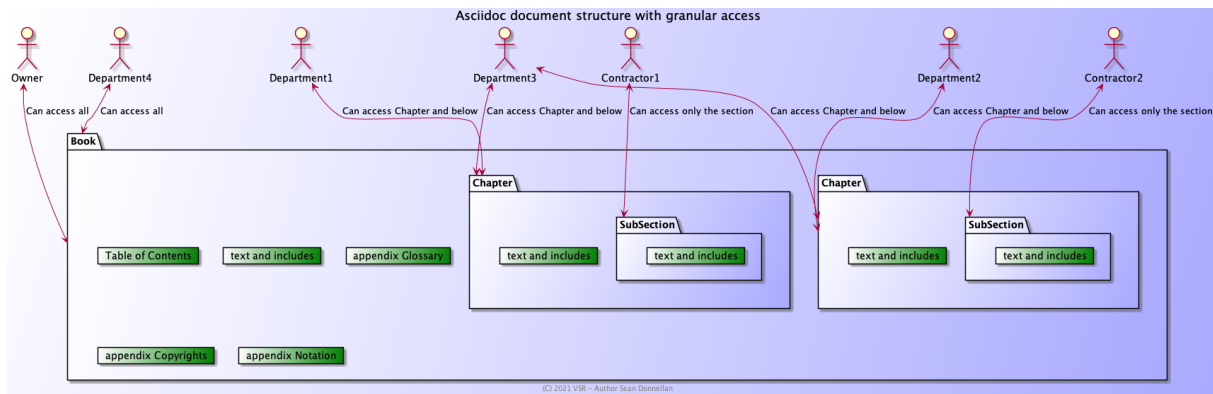


Figure 1. plantuml description of the document structure

## 1.1.2. Example sub section

(This text is, outside of the sub section, in the chapter).

### 1.1.2.1. Example section

(and this line is in the sub section)

#### 1.1.2.1.1. example sub section

With some test text here.

#### 1.1.2.1.2. example dynamic includes section

Listing 1. exampleJSON.txt

```
{
  "glossary": {
    "title": "example glossary",
    "GlossDiv": {
      "title": "S",
      "GlossList": {
        "GlossEntry": {
          "ID": "SGML",
          "SortAs": "SGML",
          "GlossTerm": "Standard Generalized Markup Language",
          "Acronym": "SGML",
          "Abbrev": "ISO 8879:1986",
          "GlossDef": {
            "para": "A meta-markup language, used to create markup
languages such as DocBook.",
            "GlossSeeAlso": ["GML", "XML"]
          },
          "GlossSee": "markup"
        }
      }
    }
  }
}
```

Listing 2. exampleinclude.txt

This is an example raw text file  
the file contains just text and could be a log file or output from some tests  
a list of these can be compiled and automatically pulled in  
It can also be source code or JSON or siilar and can then even be highlighted by  
syntax.



# Chapter 2. Description of logo

## 2.1. VSR logo description

VSR is an abbreviation for Virtual Space and Global Communications Research. The above is an imaginary company created by Sean Donnellan so as to facilitate progressing ideas without attaching them to a real company. The below is copyright Sean Donnellan as is Virtual Space and Global Communications Research itself. Feel free to create another imaginary company and please use a different name for your invention.

The VSR logo was created from a 2d table of 8x8 with 8 data points with only one data point in each row and column. This then was made 3 dimensional and the points are further distributed to be only one in each row and column no matter from which side the 3d cube is viewed.

While it's entirely possible to just distribute the points down a straight line through the cube they are distributed to make the 8 corners of a further cube like object within the outer cube.

The inner cube is skewed due to the constraints of the placements and it is this shape which is desired.

The overall idea behind this is that the inner cube when subtracted from the outer cube leaves a space within, virtual space, and it is defined by data points, nodes, in a multidimensional table, and connexions between the nodes, edges, that together represent a graph and an object. This represents the communication in Virtual Space and Global Communications Research.

The original logo also has an @ symbol in the center which is not shown in the SCAD file.

The idea behind the @ was to make it clear that communications is being referred to but it is redundant because the inner cube/graph represents a network. The @ can be added again to represent the applications that run across the network in virtual space.

When shown as a wire frame the inner cube should be hollow, and the inner space should be empty. When shown as a solid the inner cube can be assumed to be hollow if one so wishes.

When an @ is added to the logo it passes through both cubes and passes clearly through the inner space that would otherwise be hollow.

The use of the number 8 is a bow to the 8 bits that make a byte. The use of the 8x8 and 8x8x8 is desired. Also the use of the 8 data points that comprise the inner cube which is also a graph are desired.

When using only the inner cube for the logo the corners of the cube should be cubes so that the resulting cube has a complex shape and is not just a simple skewed cube but also has a clearly more complex geometry.

If using just the 8 corners of the inner cube for an animation these nodes should be cubes and no edges should be shown between them so that a complex dance of the cubes is visible as they

rotate on one or more axis.



Figure 2. Example of inner logo with text as mix



The above logo was just created ad-hoc for this document and does not signify an actual company. Also of note is that the logo is really just ad-hoc. It is not a final product but an indication of an idea.

Listing 3. VSR logo scad file with diffreent options

```
//Script to create a wire mesh cube with 8x8x8 empty spaces
//Virtual Space and Global communications research department logo base object
with 8.2 cm side length
//consisting of the multiplied basic primitives of an x,y,and z axis beam
iterate in one dimension in loops
$fn=100;
module x_beam(){
    cube([82,1,1]);
}
module y_beam(){
    cube([1,82,1]);
}
module z_beam(){
    cube([1,1,82]);
}
module vsr_cube(){
    union(){
        //xbeam
        for (xj=[0:10:80]){
            for (xi=[0:10:80]){
                translate([0,xi,xj])
                x_beam();
            }
        }
        //ybeam
        for (yj=[0:10:80]){
```

```

        for (yi=[0:10:80]){
            translate([yi,0,yj])
            y_beam();
        }
    }
    //zbeam
    for (zj=[0:10:80]){
        for (zi=[0:10:80]){
            translate([zi,zj,0])
            z_beam();
        }
    }
}

//basic primitive for VSR logo block.
color("#000",.25)
    vsr_cube();
// base cube with centre cube subtracted
*difference(){
    //basic primitive for VSR logo block.
    color("#000",.25)
        vsr_cube();
    //Whole to subtract
    hull() {
        translate ([30,50,70]) x_block();
        translate ([10,10,60]) x_block();
        translate ([70,40,50]) x_block();
        translate ([50,00,40]) x_block();
        translate ([20,70,30]) x_block();
        translate ([00,30,20]) x_block();
        translate ([60,60,10]) x_block();
        translate ([40,20,00]) x_block();
    }
}

//Just the Centre Block as a block
*hull() {
    translate ([30,50,70]) x_block();
    translate ([10,10,60]) x_block();
    translate ([70,40,50]) x_block();
    translate ([50,00,40]) x_block();
    translate ([20,70,30]) x_block();
    translate ([00,30,20]) x_block();
    translate ([60,60,10]) x_block();
    translate ([40,20,00]) x_block();
}

module x_block(){
    // Cubes as corners for complex wire frame centre
    *color([0,1,0]) translate ([02,02,02]) cube([8,8,8]);
    //spheres as corners for smoothe wireframe centre
    translate ([6,6,6]) sphere (r=1);
}

```



```

}
//Just 8 centre points as corners
union () {
  //1st set
  hull() {
    translate ([30,50,70]) x_block();
    translate ([10,10,60]) x_block();
  }
  hull() {
    translate ([70,40,50]) x_block();
    translate ([50,00,40]) x_block();
  }
  hull() {
    translate ([20,70,30]) x_block();
    translate ([00,30,20]) x_block();
  }
  hull() {
    translate ([60,60,10]) x_block();
    translate ([40,20,00]) x_block();
  }
  //second set
  hull() {
    translate ([30,50,70]) x_block();
    translate ([20,70,30]) x_block();
  }
  hull() {
    translate ([10,10,60]) x_block();
    translate ([00,30,20]) x_block();
  }
  hull() {
    translate ([70,40,50]) x_block();
    translate ([60,60,10]) x_block();
  }
  hull() {
    translate ([50,00,40]) x_block();
    translate ([40,20,00]) x_block();
  }
  //third set
  hull() {
    translate ([30,50,70]) x_block();
    translate ([70,40,50]) x_block();
  }
  hull() {
    translate ([10,10,60]) x_block();
    translate ([50,00,40]) x_block();
  }
  hull() {
    translate ([20,70,30]) x_block();
    translate ([60,60,10]) x_block();
  }
}

```

```
hull() {  
    translate ([00,30,20]) x_block();  
    translate ([40,20,00]) x_block();  
}  
}
```

## Chapter 3. Example external links to other material

*github link to an jupyter notebook of an example 3d Object*

<https://github.com/donnels/3d-objects/blob/main/spoolholder.ipynb>

The above is an example of dockerizing Jupyter while adding an openscad kernel to be able to describe the story of how an object was created. The ipynb is an extension assigned to jupyter notebooks and the kernel for openscad was added for a rasperry Pi by Sean Donnellan so as to give jupyter a home there in the VSR network. Normally Jupyter is used with Python or R for example for data analysis while mixing code and documentation. Output can also be PDF. When openen in the proper Jupyter environment it is interactive.

*The object created for printing*

<https://github.com/donnels/3d-objects/blob/main/spool.stl>

*A link to some ARM software for IOT created before the Raspberry Pi*

<https://www.auto.tuwien.ac.at/~mkoegler/index.php/eibnslu>

The above was created by Sean because he saw the potential of the Arm platform for IoT and began exploring it before the Raspberry Pi existed and before the Iphone existed.

# Appendix A: Glossary

**ACI**

Cisco Spine Leaf Ethernet infrastructure

**API**

Interface to a program or system

**APIC**

management console for Cisco ACI

**ARP**

Address Resolution Protocol - Used primarily on IP networks to dynamically link MAC addresses to IP addresses

**BGP**

Border Gateway Protocol - Path-Vector Routing Protocol

**CIO**

Chief Information Officer - At VSR the team responsible for the, primarily green, VSR internal network

**DB**

Data Base

**DCI**

Data centre interconnect. A switch that connects multiple DCs

**DLSW**

Data Link Switching - Normally DLSW+ as DLSW is deprecated - Is used to extend non routed networks across IP networks (example: Enterprise Extender)

**DNS**

Domain Name Service - resolve hostnames to IP addresses

**DR**

Disaster Recovery

**ECMP**

Equal Cost Multi Path - A method used, amongst others, by spine leaf architectures in which all the links to all the spines are used at the same time thereby increasing the overall bandwidth



## **Edge**

Is the connecting link between two Vertices (See Vertex). Also referred to as relationship

## **Enterprise Extender**

A network device used to interconnect non IP communication to Mainframes across IP networks

## **FICON**

A form of cabling used primarily for the Mainframe

## **GI**

Global Infrastructure - The VSR Internal Networks owned by the VSR CIO

## **GRE**

Generic Routing Encapsulation (GRE) is a tunneling protocol developed by Cisco Systems that can encapsulate a wide variety of network layer protocols inside virtual point-to-point links or point-to-multipoint links over an Internet Protocol network

## **Graph**

A mathematical structure used to model pairwise relations between objects (see also Vertex and Edge)

## **HA**

High Availability

## **HMC**

Hardware Management Console - Used to manage IBM P and Z series hardware

## **ICAP**

Intellectual Capital

## **IPSEC**

Internet Protocol Security (IPsec) is a secure network protocol suite that authenticates and encrypts the packets of data to provide secure encrypted communication between two computers over an Internet Protocol network. It is used in virtual private networks (VPNs).

## **LAN**

Local Area Network - Generally a layer 2 ethernet Environment

## **LDAP**

Lightweight Directory Access Protocol - Method often used to access credential databases

## **LISP**

Locator/Identifier Separation Protocol - A protocol that allows L3 mobility to be implemented



- commonly used by AT&T to migrate networks - Major limitations include inability to support layer 2 and also problems with overlap and segments with multiple subnets and load balancers amongst others

**LPM**

Live Partition mobility - IBM technology to move Virtual machines between systems without interruption

**MAC**

Media Access Control - Usually a layer 2 Ethernet Address linked to an ethernet NIC

**MF**

MainFrame

**MPLS**

Multi Protocol Label Switching - Transport technology used primarily by WAN carriers

**NAT**

Network Address Translation

**NFV**

Network Function Virtualisation - Virtual Firewalls, routers, switches etc. - Often within a device that thereby then combines multiple modular functions

**NIC**

Network Interface Card

**Neo4J**

A particular graph DB

**Node**

See Vertex

**OSA**

An Ethernet NIC used in the Mainframe

**OSPF**

Open Shortest Path First - Routing Protocol for dynamic routing (often required in conjunction with Mainframes and VIPA)

**OTV**

Overlay transport virtualization (OTV) is a Cisco proprietary protocol for relaying layer 2 communications between layer 3 computer networks



## **PAT**

Port Address translation - a form of NAT

## **PBR**

Policy based Routing - Normal routing is destination based and policy based routing may involve other things like source or type

## **Python**

A programming language

## **QSFP**

Quad Small Form Pluggable - Removable network interface for switches and devices

## **Relationship**

See Edge

## **SDDC**

Software Defined Data Centre - A cloud like DC that is centrally managed

## **SDWAN**

Software Defined WAN - A general Term for a centrally controlled and configured WAN - Usually with mixed Internet and MPLS instead of redundant MPLS

## **SFP**

Small Form Pluggable - Removable network interface for switches and devices

## **SQL**

Sequel Query Language - Database API

## **Spine Leaf**

Network Architecture that connects leaf switches with access ports to central switches called spines. The spin switches are not connected to anything but leafs.

## **VIPA**

Mainframe redundancy mechanism that involves dynamic routing of host routes.

## **VLAN**

Virtual LAN - VLANS are used to create separate layer 2 domains within a switch or network environment - Used primarily for customer separation.

## **VMotion**

VMware technology to move Virtual machines between systems without interruption

**VPN**

A virtual private network (VPN) extends a private network across a public network and enables users to send and receive data across shared or public networks as if their computing devices were directly connected to the private network

**VRF**

Virtual Routing Facility - essentially a router within a router used for routing separating between customers etc.

**Vertex**

Is a fundamental unit of graphs, usually labeled and denoted by a circle. Also referred to as a node

**WAN**

Wide Area Network - The network between remote sites

**YAML**

YAML (a recursive acronym for "YAML Ain't Markup Language") is a human-readable data-serialisation language

**YANG**

YANG (Yet Another Next Generation) is a data modelling language for the definition of data sent over network management protocols such as the NETCONF and RESTCONF



# Appendix B: Notation

This section contains examples of the notation used in the overall document.

## B.1. Warnings and Callouts

The style can be any one of the admonition labels:



Note Benne



This is a tip



This is a warning.



let me **caution** you.



This is important.

## B.2. Sidebars

### Related information

This is aside text.

It is used to present information related to the main content.

## B.3. Lists

*A numbered list of items*

1. spoon
2. fork
  - a. spork
  - i. spock
  - I. star trek

*A bulleted list*

- spoon
- fork

- spork
  - spock
    - Star trek

*A TODO list*

- ☒ Learn the AsciiDoc syntax
- ☒ Install AsciiDoc
- ☒ Write my document in AsciiDoc

## B.4. Links, Quotes and Listings

*A typical Link*

<https://asciidoctor.org>

*A Quote*

Don't Panic (Yet)

— Douglas Adams

*Listing 4. A Listing*

```
ssh -J sean@9.154.199.101 sean@192.168.2.2
```



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