

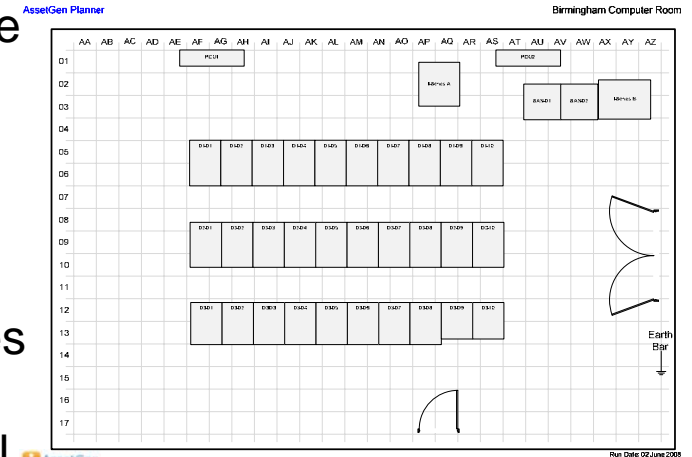
Visualizing Data Center Capacity with Visio™

1. Data Center Floor Views using Visio 2007
2. Creating the floor plan
3. Deciding on rack data / attribute fields
4. Rack views – text only
5. Rack views – colour / text
6. Rack views – icon / text
7. Other Visio views of the data center
8. Putting Visio diagrams on the intranet

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Data Center Floor Views Using Visio2007

1. As a frequently used feature Visio layers enables cable runs, paths of cable trays, earthing planes, cooling zones etc. to be superimposed so that they can be viewed without confusion or excessive detail.
2. With Visio 2007, the new data graphics feature enables other forms of information to be superimposed with colour changes based on embedded shape data. Ideal for the display of rack status, capacity, ownership etc.
3. Our approach is to automatically generate Visio diagrams from a data center management system where rack data is embedded for you and updated constantly. This reduces the amount of manual effort involved, as well as the control of a database solution.

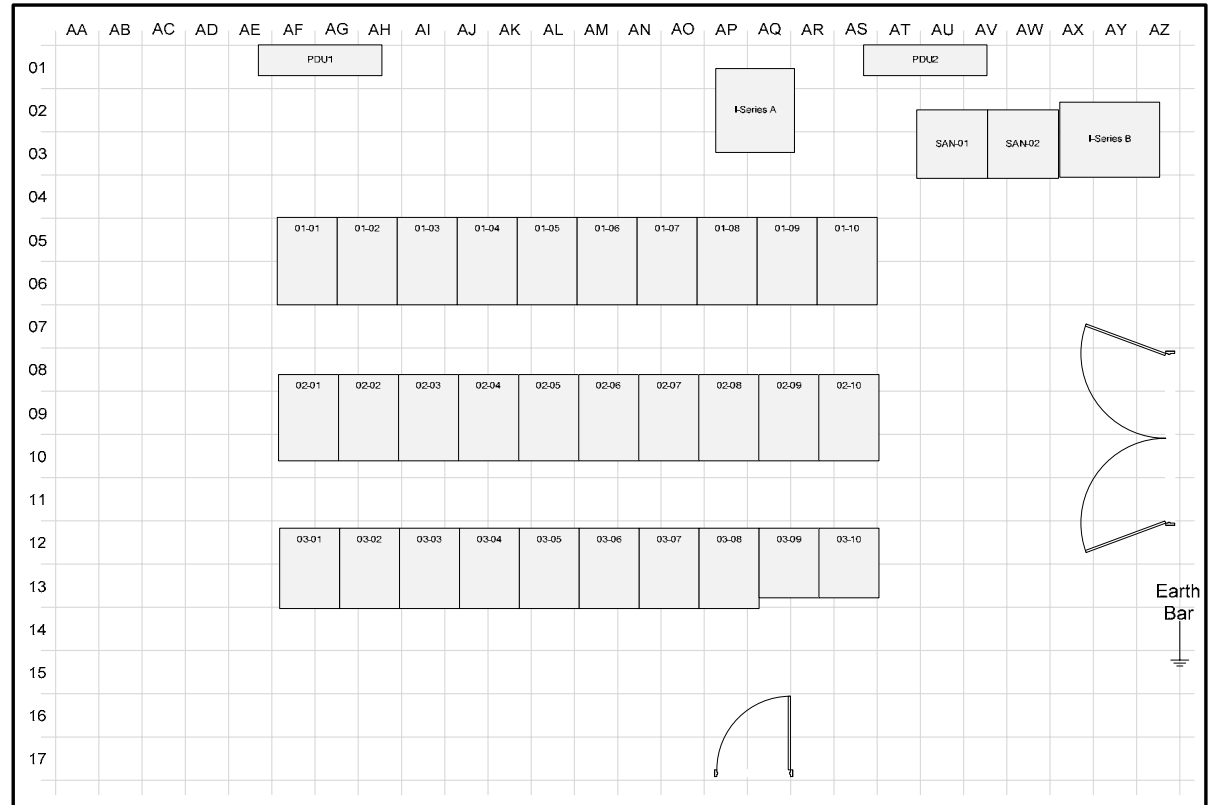


Creating the Initial Floor Plan

AssetGen Planner

Birmingham Computer Room

1. Create a Visio floor plan using AssetGen Planner
2. The Visio diagram on the right shows racks and floor mounted systems sized and positioned a background of floor tiles
3. The default displayed data for each rack is the name.
4. Rack data is embedded automatically along with hyperlinks back to AssetGen
5. This diagram can then be refreshed with changes as required



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Example Rack Data Display (1)

Text only display

01-01	01-02	01-03	01-04	01-05	01-06	01-07	01-08	01-09	01-10
Network	Network	Server	Server	Server	Server	Server	Storage	Storage	Mixed

Rack function

01-01	01-02	01-03	01-04	01-05	01-06	01-07	01-08	01-09	01-10
01/04/ 2007	01/04/ 2007	01/04/ 2007	01/04/ 2007	01/04/ 2007	01/04/ 2007	01/04/ 2007	13/05/ 2006	13/05/ 2006	13/5/ 2006

Last rack audit

01-01	01-02	01-03	01-04	01-05	01-06	01-07	01-08	01-09	01-10
27	26	27	23	23	15	29	21	13	16

Available U space

Example Rack Data Display (2)

Colour / text display

01-01	01-02	01-03	01-04	01-05	01-06	01-07	01-08	01-09	01-10
Network	Network	Server	Server	Server	Server	Server	Storage	Storage	Mixed

Rack function

01-01	01-02	01-03	01-04	01-05	01-06	01-07	01-08	01-09	01-10
Green - Internal	Amber - Customer /3rd party	Green - Internal	Green - Internal	Green - Internal	Green - Internal	Green - Internal	Green - Internal	Green - Internal	Not applicable

Network side

01-01	01-02	01-03	01-04	01-05	01-06	01-07	01-08	01-09	01-10
BT	BT	Reuters	Internal	Bloomberg	Datafeed Inc	MIS	Internal	Internal	Internal

Rack Owner/User

Example Rack Data Display (3)

Icon/text Display

01-01	01-02	01-03	01-04	01-05	01-06	01-07	01-08	01-09	01-10
1095	2505	3355	5655	2755	2055	7455	1705	1455	3505

Racks exceeding power limit

01-01	01-02	01-03	01-04	01-05	01-06	01-07	01-08	01-09	01-10

Space available

01-01	01-02	01-03	01-04	01-05	01-06	01-07	01-08	01-09	01-10
18	20	14	8	14	16	4	18	20	24

Patch ports free

Defining the Rack Data Fields

Standard AssetGen Fields

1. Total Height
2. Used space – front
3. Used space – back
4. Max contiguous space – front
5. Max contiguous space – back
6. Sum of Equipment power – design
7. Sum of Equipment power - actual
8. Sum of power strip power readings
9. Sum of spare patch panel ports
10. Sum of spare switch ports
11. Other summations as desired

Numbers 6-11 are examples of user selected data to suit power/network teams

Adding a new server will update most of these for you

Typical Custom Fields

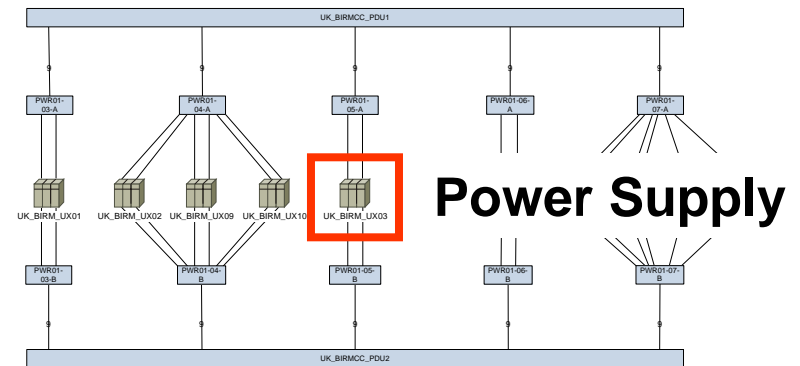
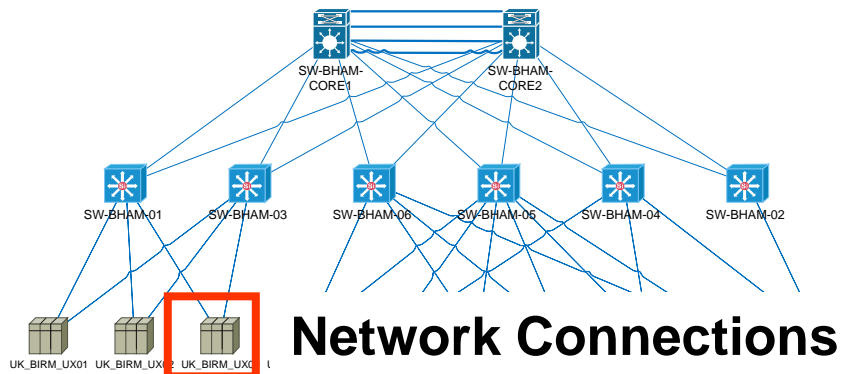
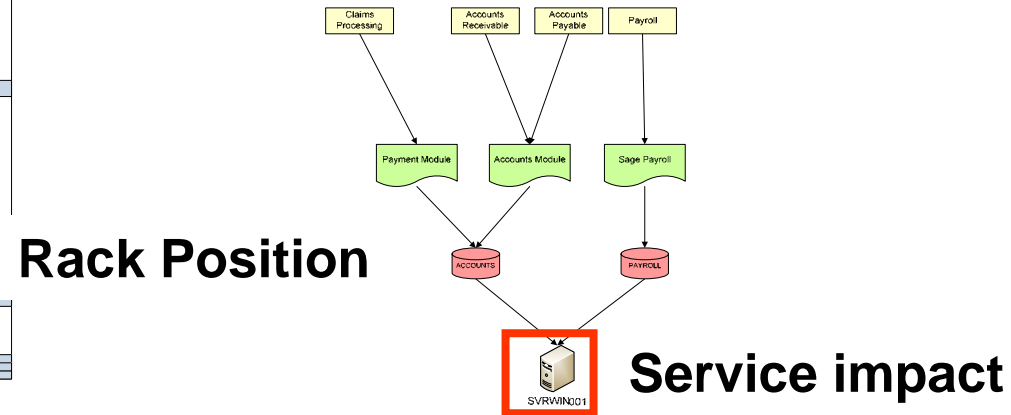
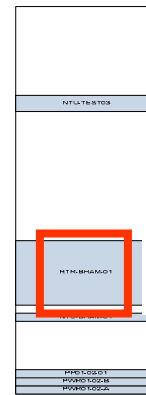
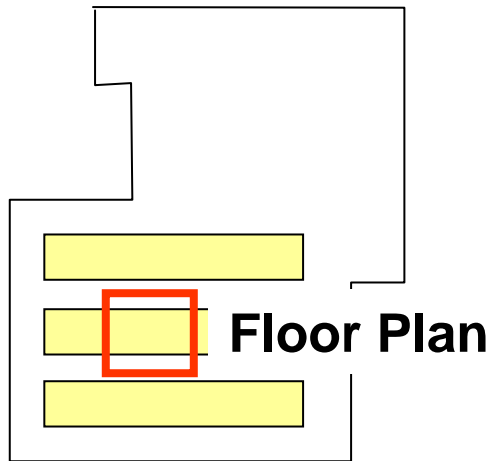
1. Rack depth
2. Last audit date
3. Last PAT test (electrical safety)
4. Manufacturer
5. Model / order reference
6. Power Limit - Maximum
7. Date installed
8. Safety hazard (multiple phases)
9. Installed date
10. Business or technical owner
11. Key code reference

Custom fields make it easy to compare or show rack data without creating more Visio diagrams

These are manually updated as part of work flow or documentation needs

Different Visio views of a Data Center

All are drawn from the same data source!



Visualizing Data Center Capacity Summary

Communicating capacity and status of racks in data centers and colocation facilities can be easily achieved using MS Visio. Visualizing where capacity exists and where limits have been reached is a fast way to explain complexity within data centers.

Rather than produce multiple diagrams of the same floor plan, Visio data graphics allows a single diagram to communicate multiple data sets. Text, colour and icons can be used to suit the type of data provided by data center management systems such as AssetGen.

To finish with, Visio combined with AssetGen provides

- a. A quick, automated way to produce Visio diagrams of data center rack capacity
- b. An easy method of communicating available capacity and rack data
- c. Consistency of symbols, content and embedded data across diagrams
- d. Savings in staff time in producing and maintaining complex capacity diagrams

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