Data Center Visualization Using Visio

1. Data Centers and Visualisation
2. Linking Visio to data center management systems
3. Embedding data and hyperlinks into Visio shapes
4. Data Center Space - Floor plans, rack diagrams
5. Topology maps – Network, Power
6. Other Topologies – Infrastructure, equipment, architectures
7. Creating a Visio diagram automatically
8. Putting Visio diagrams on the intranet

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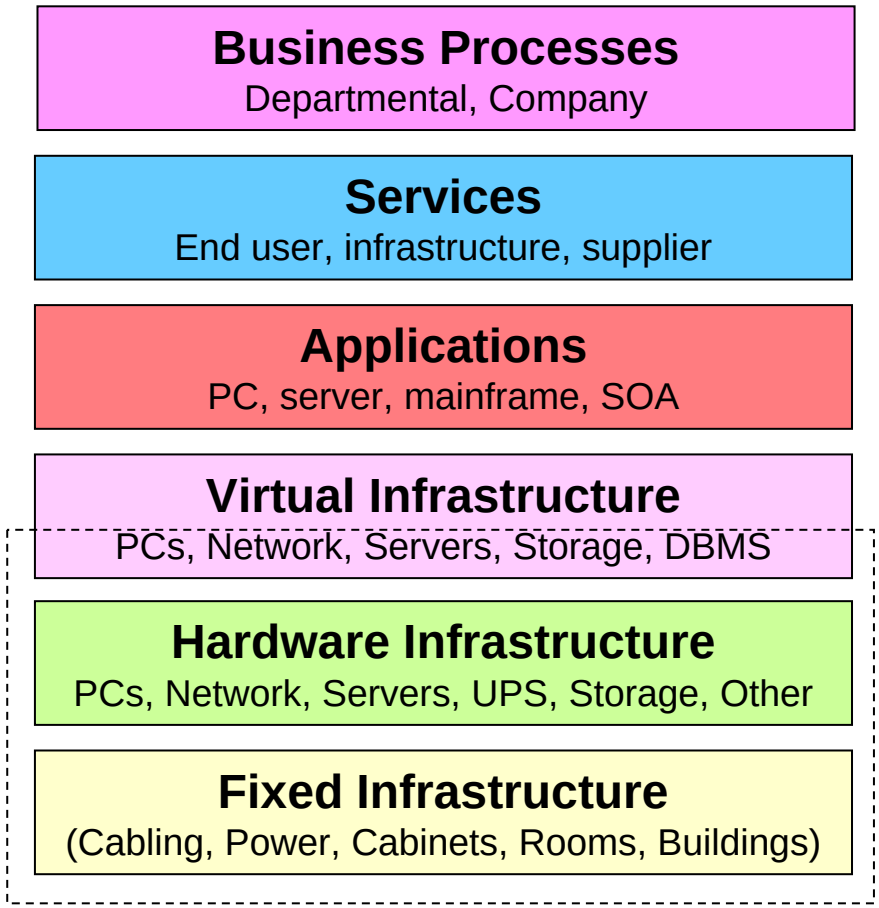
Data Center Visualization Using Visio

Understanding a data center is difficult due to the amount of devices and connections crammed into a small space. The best way to explain location, paths, risks and capacity is often with a picture or diagram, so our techniques that automate Visio diagram production significantly reduces the work on data center, operations and project teams.

Examples of typical diagrams covering the Data Center

1. Floor plans
2. Pathways and cabling routes
3. Fixed infrastructure overviews – Cabling and Power
4. Rack layouts (front and back)
5. Network LAN/SAN/WAN topology diagrams
6. Resilience and SPOF (single point of failure) diagrams
7. Visual status – hot spots, capacity, ownership

As with any diagram, a specific view is created to meet the needs of planners, project teams, operations etc. Visio provides a wealth of features to enhance diagrams with additional data as well as publish to intranets.



The focus for Data Center Visualisation

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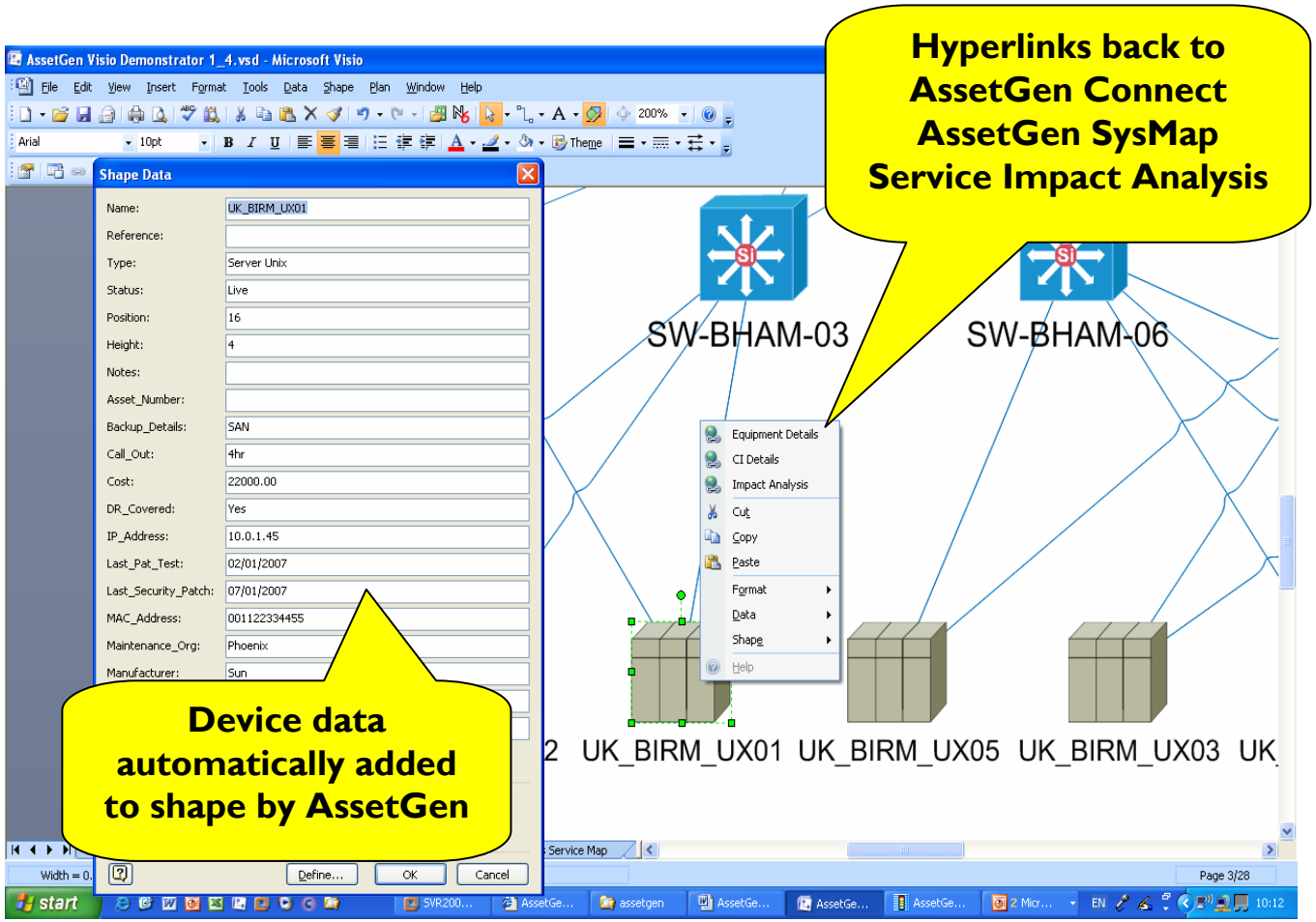
Visio Linking to Data Center Toolsets



Linking Visio to the AssetGen system provides symbols and detailed device data – automatically.

Each shape has hyperlinks added back to AssetGen for

-Service impact analysis

-Reporting, audit trails

-Connectivity tracing

AssetGen provides a single source of data, Visio provides the diagrams

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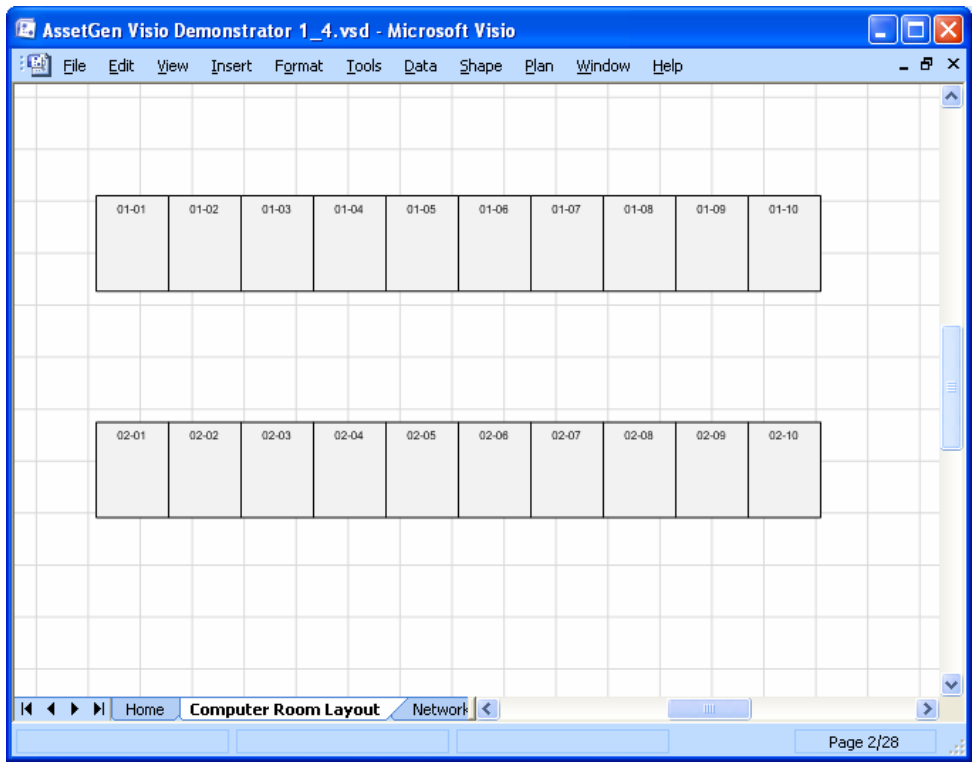
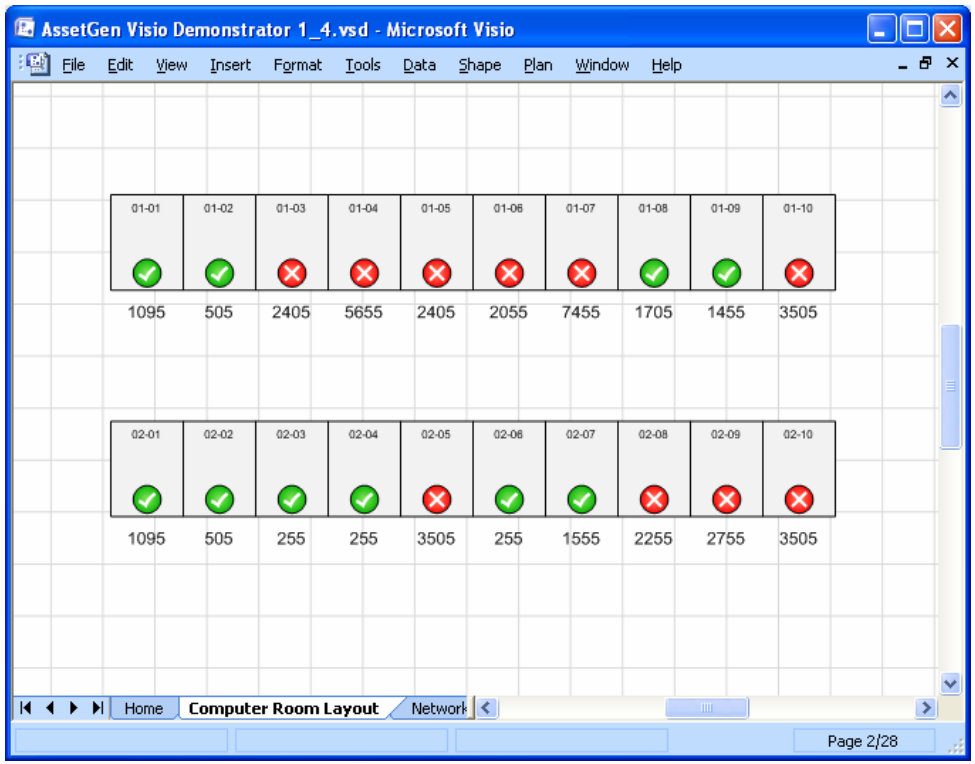
Visio 2007 Data Graphics Example

Computer room cabinet layout showing position on floor plan



Same layout with data graphic showing cabinets exceeding rated power limits and the current equipment power



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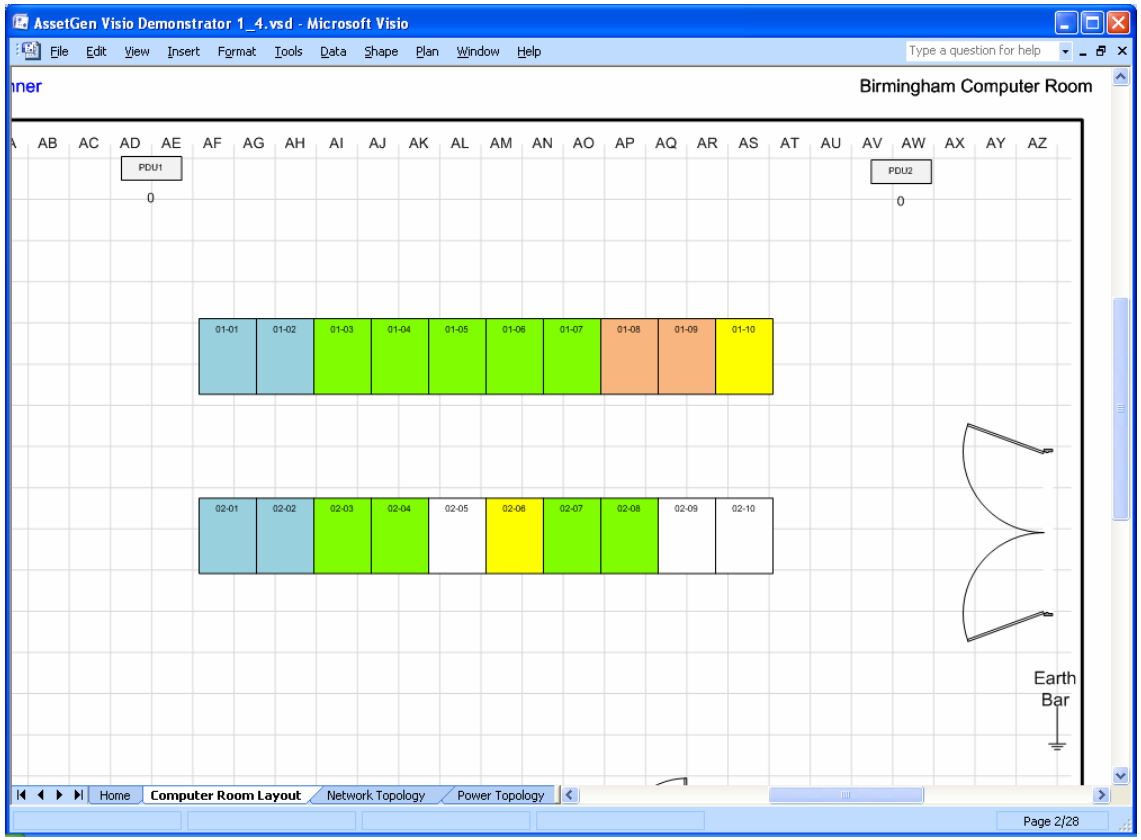
Data Center Views (1) – Floor Plans

AssetGen Planner produces cabinet shapes for rooms which can be overlaid on backgrounds representing tile layouts, doorways, cable routes etc.

Hyperlinks back to AssetGen Connect are automatically inserted as well as cabinet data.

Existing floor plans can be updated to preserve layouts and positioning



Cabinet function, customer, owner indicated by colour coding

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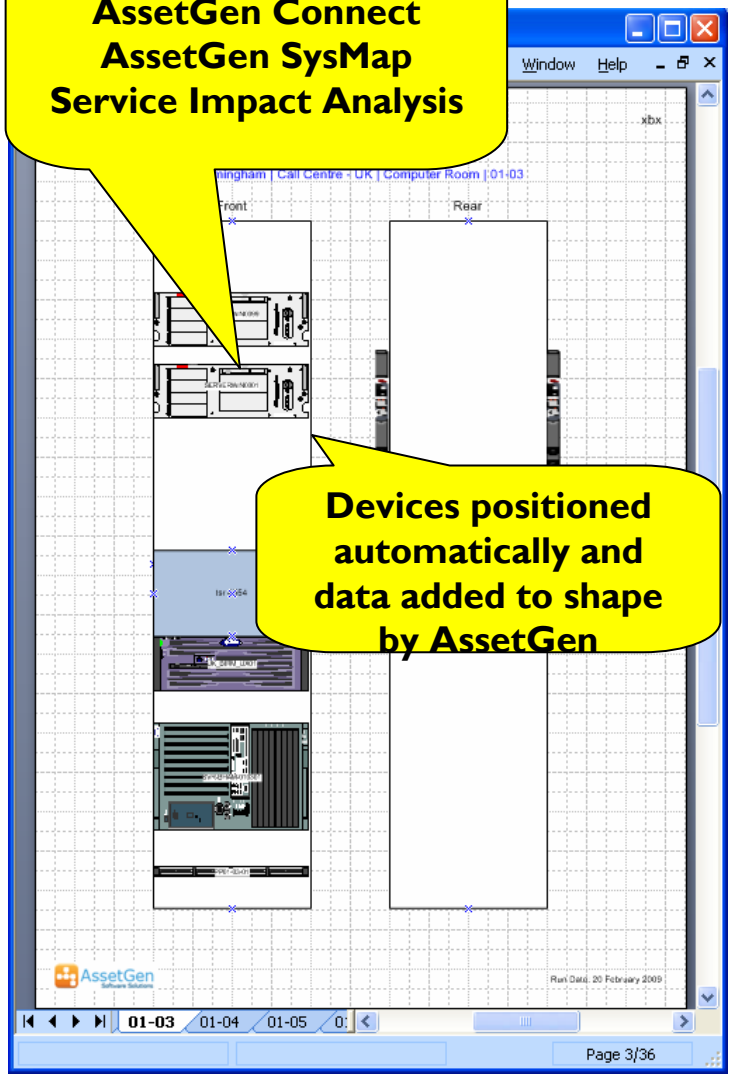
Data Center Views (2) – Rack Layouts



Visio rack diagrams are quick and easy to produce so all can understand where equipment is and available space. Racks are automatically sized and equipment placed for you.

Some of the options

- an individual rack, or a selection of racks
- a complete room, building or site
- by function (server, comms, storage)
- by owner (customer, business unit)
- show/hide blanking plates

For example - allocate space for a server, produce an updated Visio diagram and email it to a colleague in less than a minute!

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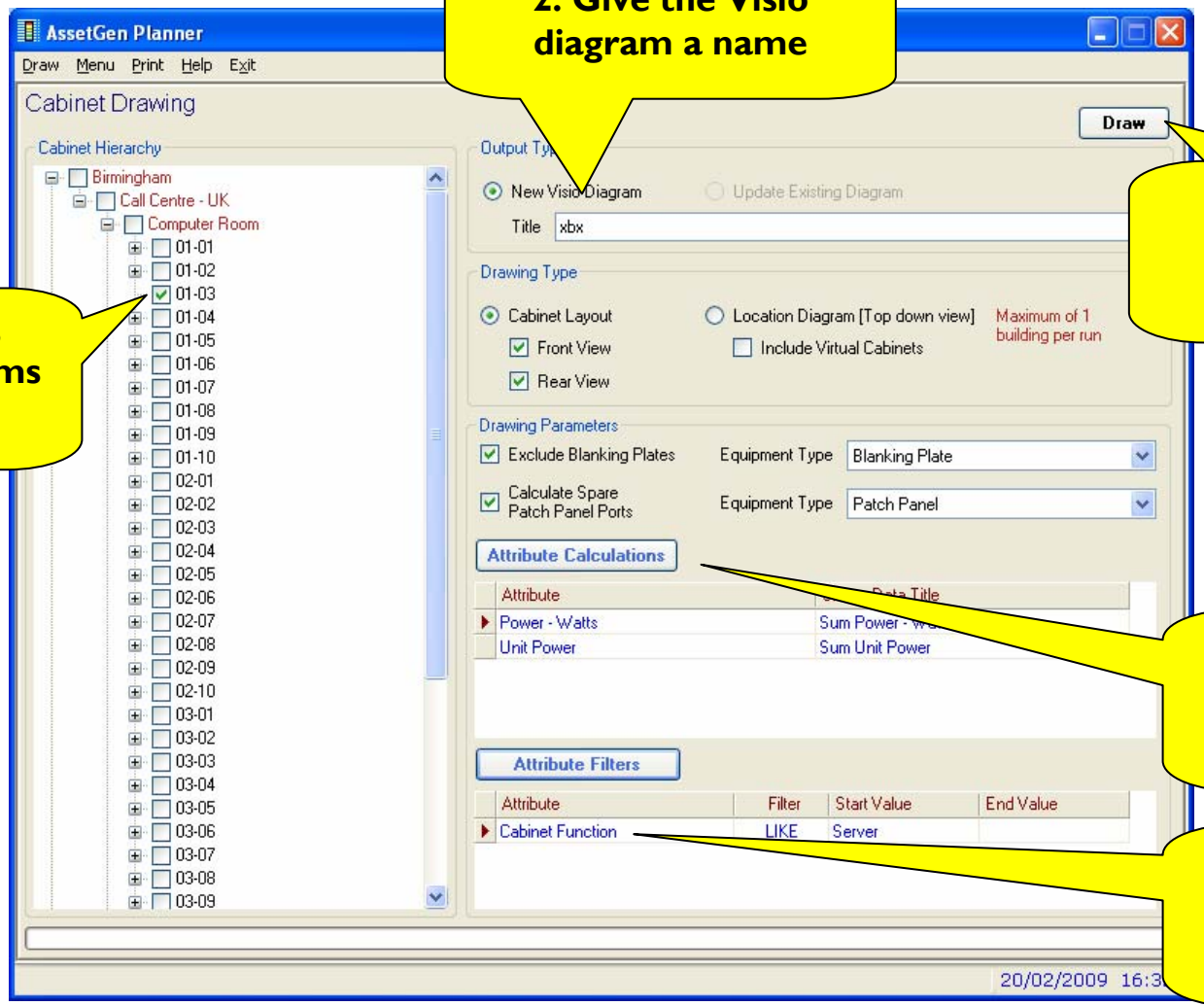
Creating a Rack Diagram Automatically



2. Give the Visio diagram a name

3. Press Draw

Finished!

1. Choose a rack, multiple racks, rooms or buildings

Options to add extra detail to the racks Power, spare switch ports etc.

Options to select racks by function, row, owner etc.

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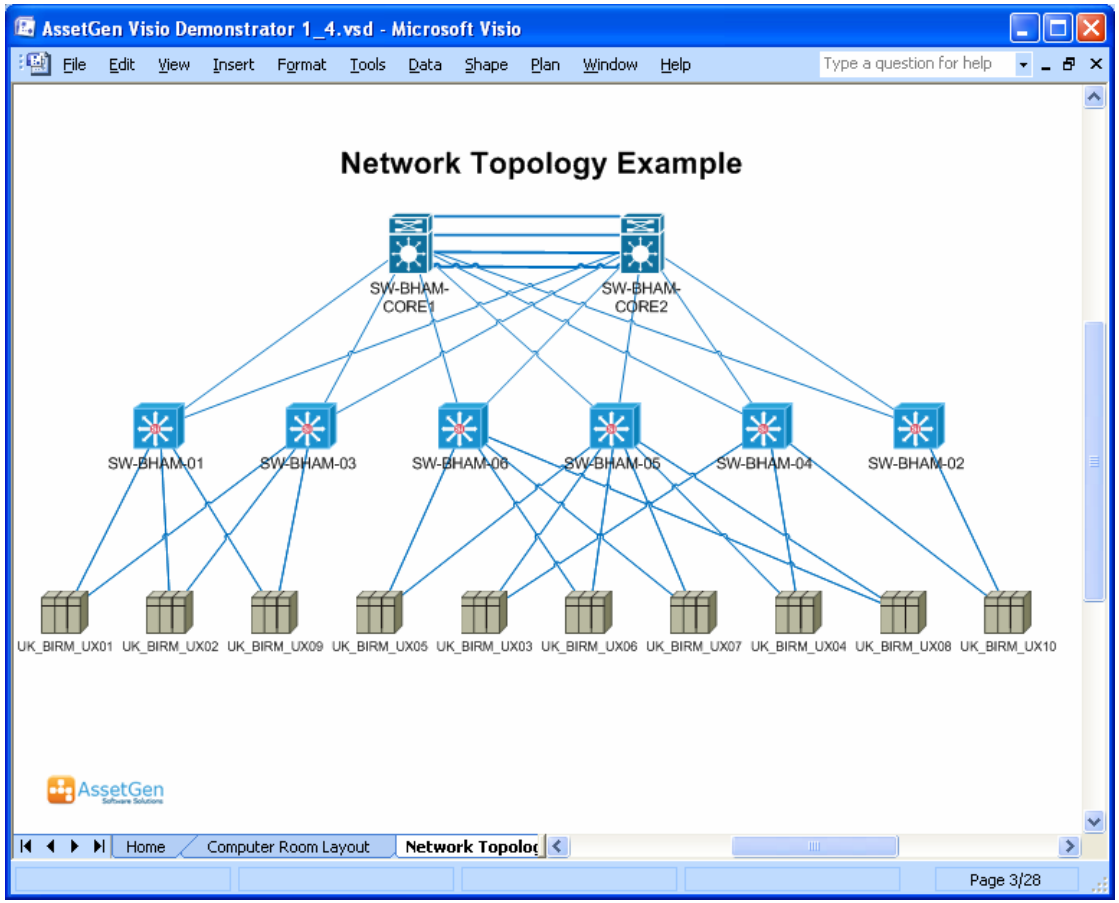
Data Center Views (3) – Network Topology

Visio diagrams of network topology are automated, with embedding of device data, link data and hyperlinks.

Some of the options we provide

- equipment types
- limits for diagram
- positioning
- connectivity – data, power, or both
- templates for consistent views

Logical connectivity is traced for all connections, with IP address, VLAN, ports etc. added to link data



Backbone LAN diagram with Unix hosts

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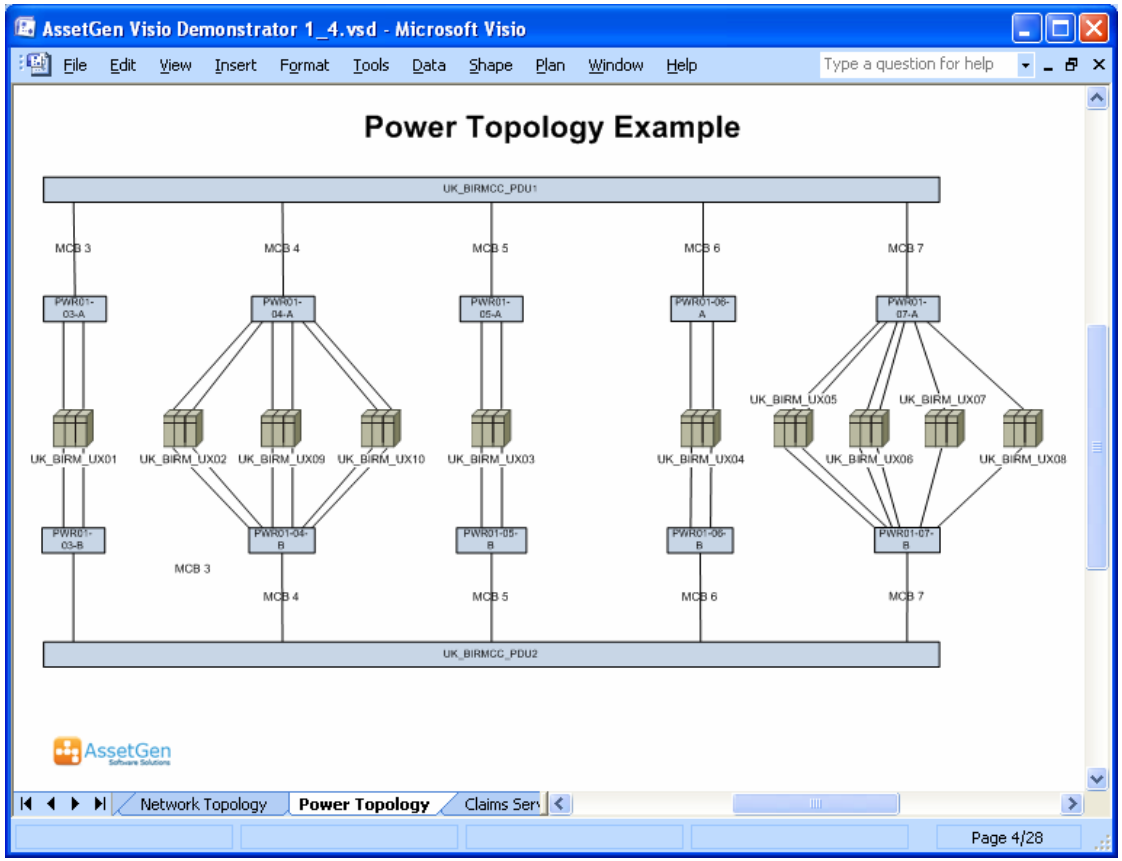
Data Center Views (4) – Power Topology

Power topology diagrams are provided in the same way as network topologies

Similar options under your control

- equipment types
- limits for diagram
- positioning
- templates for consistent views

Ideal for ensuring that standby and resilience power circuits do not get overloaded under normal or fault conditions.



The same Unix hosts from a power perspective

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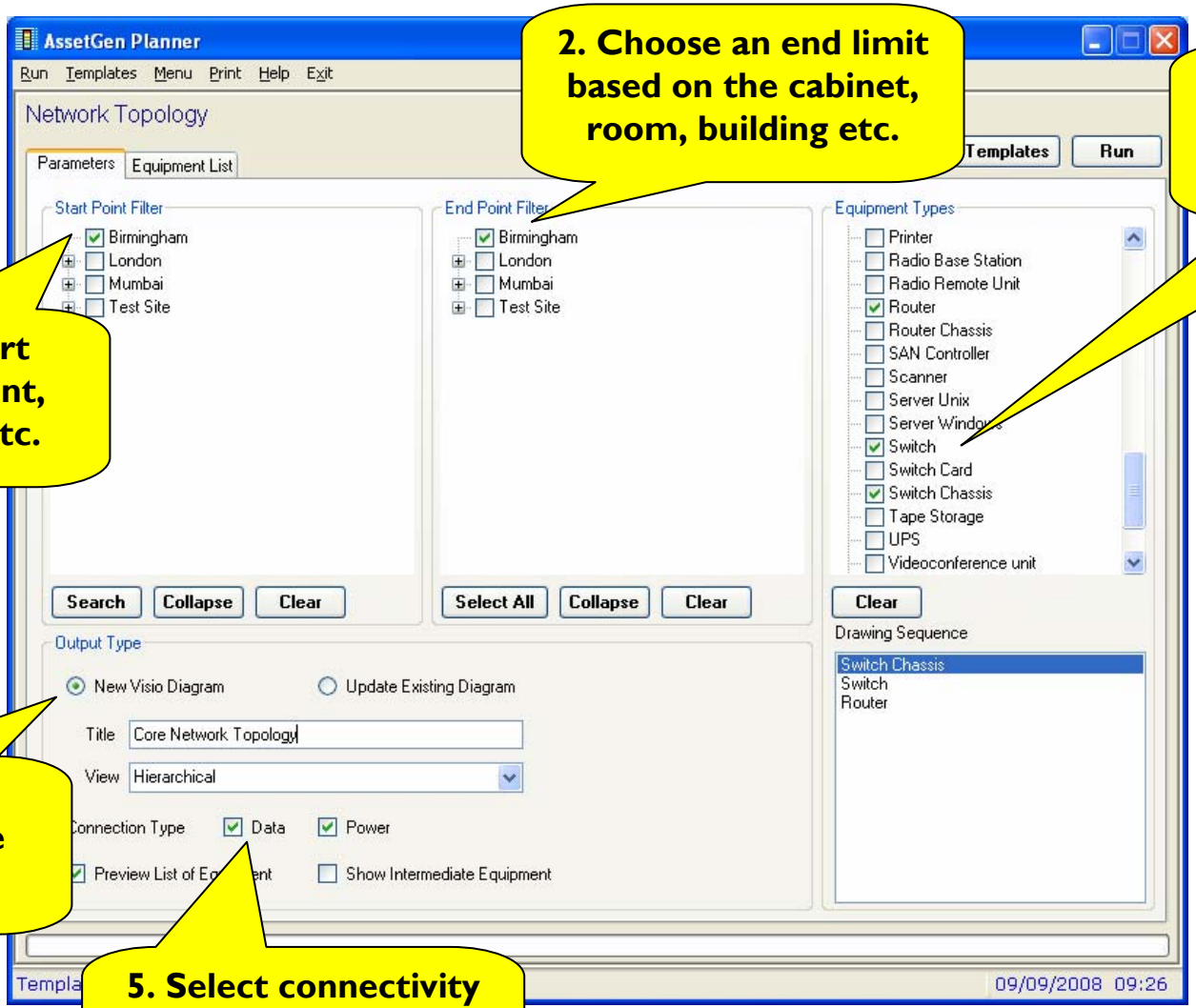
Creating a Visio Topology Diagram Automatically



1. Choose a start point – equipment, cabinet, room etc.

2. Choose an end limit based on the cabinet, room, building etc.

3. Select the equipment types to be drawn etc.

4. Create a new diagram or update and existing one

5. Select connectivity type(s) for topology

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Data Center Views (5) – Other topologies

There are many ways to present how IT systems work. It makes sense to reduce the burden on getting the equipment and connectivity data by using a common source such as AssetGen. All Visio diagrams will have common naming, the same device data and links back to the original source.

- Infrastructure
  - SAN, LAN, WAN, Power, Cabling, Environment, Cooling, Telecom
- Combined equipment and infrastructure
  - SPOF (single points of failure). Eg. Servers with LAN, SAN, power
  - Connectivity infrastructure. Eg. Switch, firewall, router, load balancers
  - Zoning. Eg. DMZ, VLANs, test/production
  - Path diagrams. Eg. End to end paths for power, data, convertors
- Architecture
  - Groupings. Eg. Domains, addressing, functions, services, DR recovery
  - Overlays. Eg. Data flows, batch processes, applications

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Putting Visio Diagrams on the Intranet

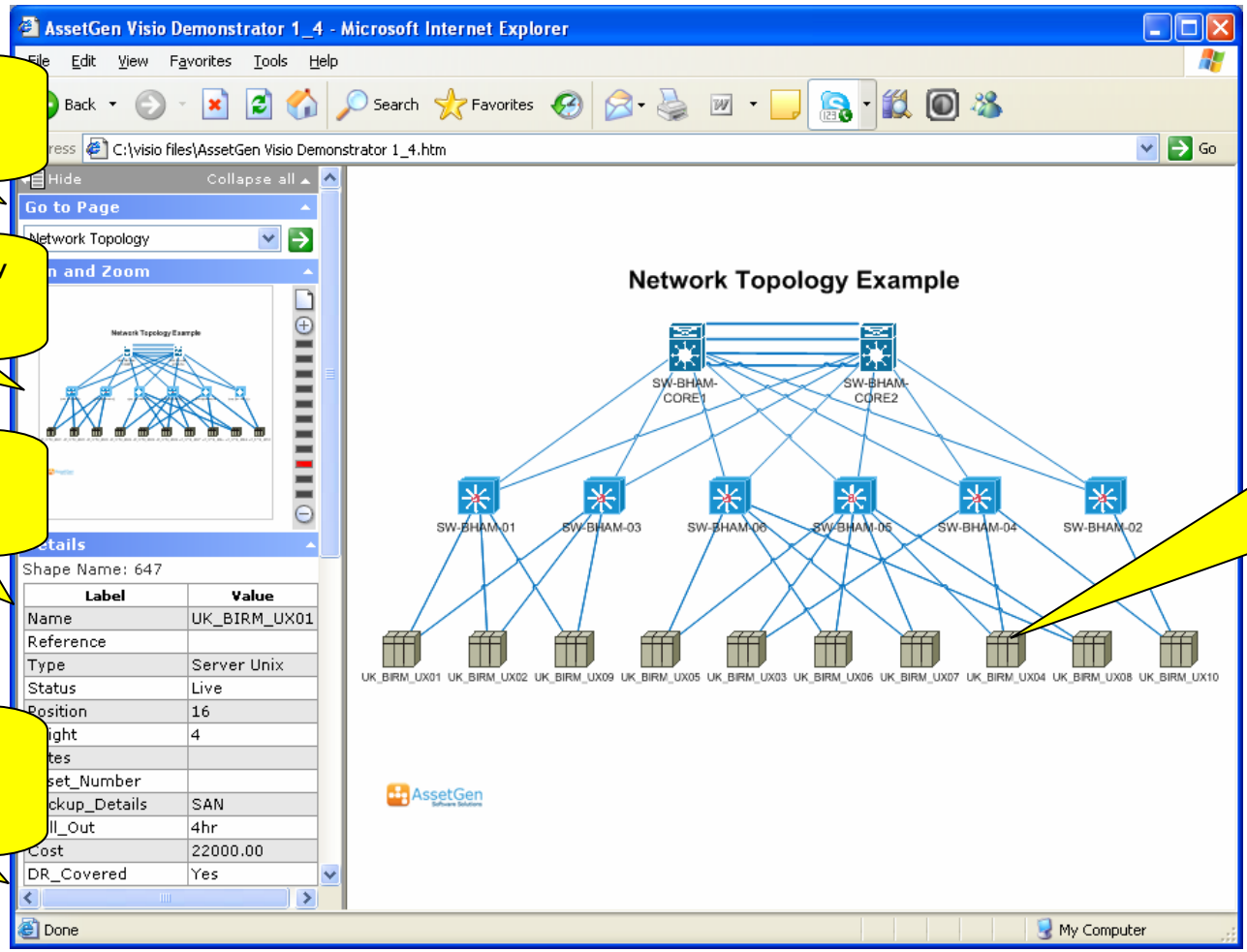
Saving a Visio service map as a web page, preserves hyperlinks and embedded data.
An easy way to distribute data center knowledge while keeping control.

Go to floor plan, rack layout, topology pages

Pan and Zoom window for control of detail

Embedded equipment data displayed

Search on equipment and embedded data across multiple pages



CTRL-CLICK to see embedded data
Single CLICK to launch hyperlinks to:
AssetGen Connect
Service Impact Analysis

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Data Center Visualization Summary

We make it possible to automate the production of Visio diagrams covering the physical and logical aspects of data centres and infrastructure. Accuracy and understanding are increased with links back to the source data for more detail.

To finish with, Visio combined with AssetGen Planner gives

a. A quick, automated way to produce Visio diagrams without being an expert!
b. An easy method of distributing device data and connectivity
c. Consistency of symbols, content and embedded data across diagrams
d. Savings in staff time in producing and maintaining complex diagrams
e. Faster implementation of change projects

Contact us or our resellers for more information on the AssetGen range

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