Cloud Capacity Planner

A clear picture

The most appropriate cost-effective model

When migrating from a traditional ICT infrastructure to one based in the cloud, it is key that the utilisation profile of the existing infrastructure is clearly understood. Only by gaining a clear picture of current utilisation can an accurate cost for the new infrastructure be established. That’s what SCC’s Cloud Capacity Planner (CCP) does.

Relevant Information

Focusing on both physical and virtual servers, plus existing bandwidth capacity in relation to the proposed services moving to SCC’s Data Centre, CCP provides the relevant information for SCC to benchmark the infrastructure performance and capacity needs, and size the target environment to the most appropriate and cost-effective model.

Customers using CCP have seen the costs for target cloud infrastructures dramatically reduce, as typical utilisation of existing infrastructures is often below 15%.

Our Approach

Our CCP approach comprises:

1. Implementation of capacity analysis tools:
   a. Virtual Capacity Analysis tools – VMware Capacity Planner
   b. WAN Capacity Analysis tools
2. Running the capacity analysis tools for a calendar month
3. Producing a report comprising our recommendations and high-level design from the collated analysis data

VMware Capacity Planner

Appropriately qualified and informed VMware consultants will load the VM Capacity Planner tools on to the network environment. These tools are unobtrusive and gather the statistical information in the background, ensuring there is no business performance degradation during this due diligence exercise.

In conjunction with the customer we will establish where the VM Capacity Planning tools should be installed; the actual installation of the tools normally takes a half to a working day.

The capacity planning tools are then left to gather the data for a full calendar month, offering an accurate appraisal of activity within the customer network. The tools provide information around optimisation and consolidation of back-office infrastructures.

These assessments will enable SCC to produce a more accurate evaluation of a redesigned and redeployed environment. It is an agent-less implementation, which will also provide improved visibility of the back-office platform, including the utilisation of all the resources, which will aide decision making for a restructured solution.

There are a number of key attributes to the VMware Capacity Planning tools:

- Simple installation and set up;
- Centrally hosted application, with agent-less analysis capability across the whole back-office estate. For secure environments all data will remain local to the customer, however will be used for analysis purposes by SCC;
- Can be remotely managed and administered;
- Web based capacity planning and analysis;
- Comprehensive discovery capability;
- Rich set of capacity utilisation features;
- Will detect anomalies and alert on those findings.
Network Capacity Planner

SCC's CCP solution also includes the implementation of a NetObserver Probe as the most appropriate tool to provide network traffic analysis, providing easy to understand network related information, including:

- Utilisation statistics (through IP trending observation). This can be both at a WAN and LAN level;
- Network performance on a per server basis;
- Network performance on an application basis;
- Email and web traffic response times;
- Maps traffic arriving from designated ports and source/destination IP addresses;
- Identifies where bandwidth is being consumed, highlighting IP addresses of the top talkers on the network;
- Enables drill down into specific network areas to further analyse traffic in more detail.

The information gathered will enable SCC to understand the current data flows around the customer environment and how that data will flex in changing to an SCC Data Centre service. Through this process we can then calculate how much bandwidth will be required to ensure that we effectively plan the WAN infrastructure, including possible resiliency and diversity requirements, to ensure there is no performance degradation.

The network analysis tools are left to gather data for a full calendar month, offering an accurate appraisal of activity within the customer network.

Processing the Results

Our Secure Data Protection Service is housed within our protected, Tier 3+ Data Centres based in the UK. We understand the unique needs, pressures, risk mitigation strategies and deployment methodologies required in helping organisations optimise and deliver services they need.

At the end of the month’s data gathering exercise, SCC will return to customer site and capture this analysis data, disable the analysis tools and remove them from the customer network. The analysis data will enable SCC to establish the:

- Processing requirements;
- Memory requirements;
- Disk requirements;
- Backup requirements;
- Bandwidth requirements;

This information will allow us to understand the size and profile of the VMs to run the customer applications and services, including processing power, memory, disk and bandwidth requirements. Additionally, we will be able to identify the WAN connectivity requirements and assess the needs for both bearer and lit bandwidth for the necessary sites within the solution.

SCC has connectivity access into to our Data Centre through Virgin, BT, Vodafone, TalkTalk and Level3 as alternative tier 1 providers. However, it may be more appropriate to utilise the existing customer WAN and for the SCC Data Centre and Sentinel platform to be provisioned as spokes of this WAN topology.

The data will then be transposed into a meaningful report, which will form the basis of our recommendations and high level design.
Deliverables, Costs & Timescales

Upon completion, we will make a formal presentation as well as provide the customer with copies of the reports generated as a result of this exercise for both the virtual capacity planner and for the networking analysis. The contents page of a typical report is given below:

Section A: VMware Capacity Planner Report
- Overview
  - Summary of findings
- Monitored Systems
  - Overview of monitored systems
  - Configuration and performance summary
- Consolidation Assessment
  - Exception servers
  - Host loading
- Existing Virtualised Environment
  - Cluster performance overview
  - Non monitored virtual machines
- Storage Requirements
  - Monitored systems
  - Detailed storage statistics
  - Cloud environment sizing

Section B: Network Capacity Planner Report
- Overview
  - Summary of findings
- Methodology
- WAN test results
- LAN analysis
- Top talkers
- Network performance by server
- Network performance by application
- Email traffic response times / network delay
  - Web traffic response times / network delay
  - Top protocols TCP/UDP applications
  - Top ten station pairs
  - Microburst summary

An example Capacity Planning and Network Analysis estimate for a single site, displaying tasks, resources and timescales, including costs is given below:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Man Days</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity Analysis tools install</td>
<td>2</td>
<td>£1,546</td>
</tr>
<tr>
<td>Site visit during data gathering</td>
<td>2</td>
<td>£1,546</td>
</tr>
<tr>
<td>Capacity Analysis tools removal</td>
<td>1</td>
<td>£773</td>
</tr>
<tr>
<td>Report Analysis</td>
<td>2</td>
<td>£1,546</td>
</tr>
<tr>
<td>Report creation</td>
<td>2</td>
<td>£1,546</td>
</tr>
<tr>
<td>Presentation</td>
<td>1</td>
<td>£733</td>
</tr>
<tr>
<td>Sub Total</td>
<td>10</td>
<td>£7,730</td>
</tr>
<tr>
<td>Rental of NetObserve Probe</td>
<td></td>
<td>£1,750</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>£9,480</td>
</tr>
</tbody>
</table>

The duration, resources and cost is dependent on the scale of the estate and the number of major sites within the customer environment. The elapsed timescale for this exercise will be approximately eight weeks. NB - Price excludes Project management, which will scoped as part of the project.