



Remote Client Solutions

Solution Overview

February 10, 2010

1 Executive Summary

IT Complexity

At a point in time in the not too distant past, complexity in IT solutions was considered the domain of the data center, the enterprise applications and the large-scale development projects.

Today, the changes in the client infrastructure, desktop environments, change management and mobile clients coupled with increased cost, pace of change and sensitivity to compliance and security issues has moved the management of the IT client into the same category of complexity as traditional data center solutions.

Additionally, the coupling of virtualization technology with increasingly powerful operating systems and client hardware has introduced cost models for the desktop that actually increase cost. This leads to the question of technical viability for a solution which sometimes appears to be driven by a vendor agenda versus well-understood value for a customer – is this economically viable?

Finally, as the technology for data center-based, hosted desktops are introduced, this shifts the support and deployment skills from the typical end-user desktop support or helpdesk staff member to a person that needs the skills of application developer, server administrator and virtualization specialist.

Due to these considerations as well as the shifts that occur when moving to a centralized desktop model, the ROI and TCO discussion is often related less to capital expenditure and more towards operational expenditure and efficiencies.

OST takes an approach to client virtualization that is based in our culture and defined value proposition for our customers:

- We believe in providing the incremental value which large IT organizations with exceptional staff need to bring complex solutions to their customers
- We believe in providing a solution focus that is based upon real-world experience in managing complex solutions and recommending what works not what is expedient to sell.
- We believe in providing vendor-independent opinions so that the recommended solution is the right solution for our customers
- We believe in a culture of loyalty and long-term customer relationships whereby our technical, sales and project teams build a supportive, multi-year relationship with our customers through which we bring ongoing value for the lifecycle of the solution.

To that end, OST offers a series of services to help medium to large enterprises address their interest in data center hosted desktops, virtualized or centralized client solutions.

2 Solution Description

OST Remote Client Technology Solution

The Remote Client Solution provides a broad spectrum of choices that consists of the following components:

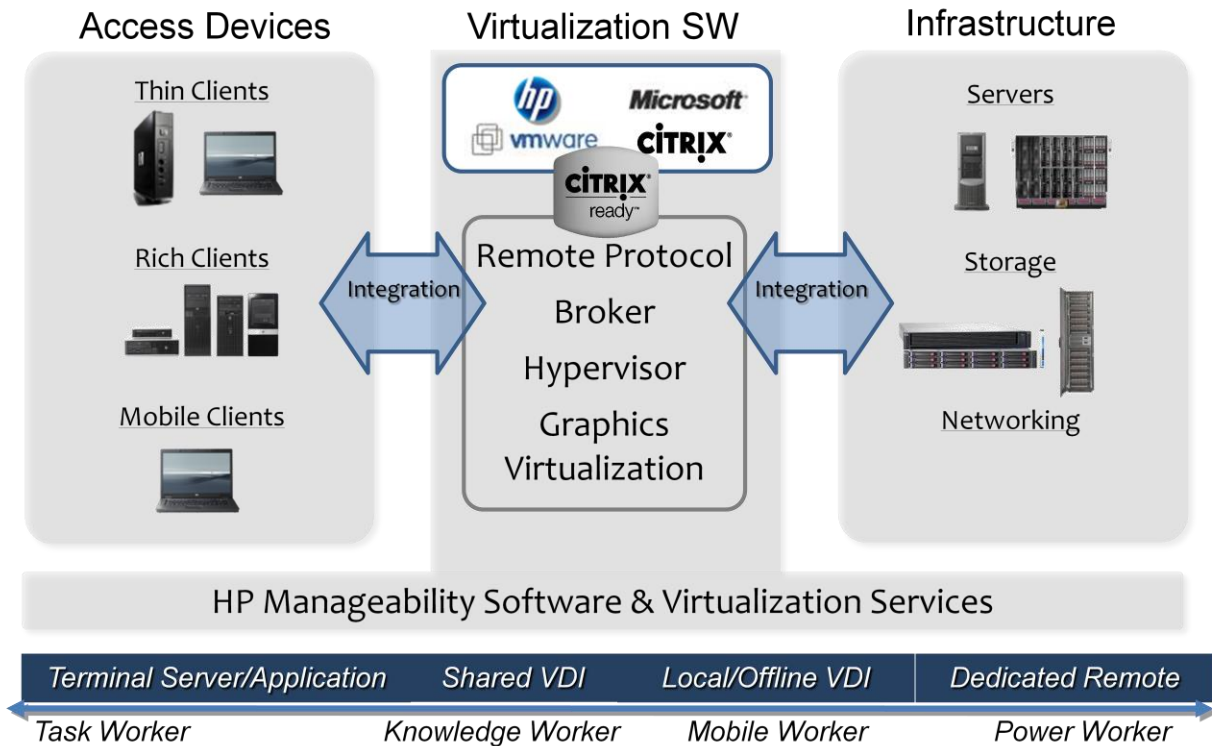
1. Server Based Computing platforms:
 - a. Blade servers running software such as Citrix Presentation Server.
2. Virtual Desktop Infrastructure:
 - a. VMware View
 - b. Citrix XenServer
 - c. Microsoft Hyper-V
3. Blade PCs
HP Consolidated Client Infrastructure (CCI) blades running workstation operating systems
4. Blade Workstation
Datacenter-based workstation computing
5. Thin Clients
 - a. HP and Wyse Thin Clients
 - b. Managing the complexity of Thin Clients with local device support and management (USB, scanners, etc.)
6. The protocol and transport layers
7. Printing Infrastructure
While often overlooked, printing is often cited as the biggest headache in a centralized client solution.
8. Associated Software
 - a. Connection broker software
 - b. Desktop management software
 - c. Provisioning software and Application Streaming software
 - d. Virus scanning and threat management
 - e. Service level management
 - f. Security, directory integration and authentication

The above components can be “mixed and matched” (ala carte) as needed to form the basis of a customer Remote Client Solution. The key point is that OST offers a solution that will meet the needs of any customer looking to achieve a remote client or datacenter-based client solution.

OST Remote Client Typical Diagram

The typical heterogeneous desktop environment is replaced with thin client devices on the front-end, and servers with external storage or local storage on the backend. For each desktop, an OS is virtualized on the server using virtualization software.

The OST Remote Client Solution is comprised of servers, storage, software, management, and access devices and is delivered via a combination of vendor and partner delivered services.



3 Unique Value Proposition

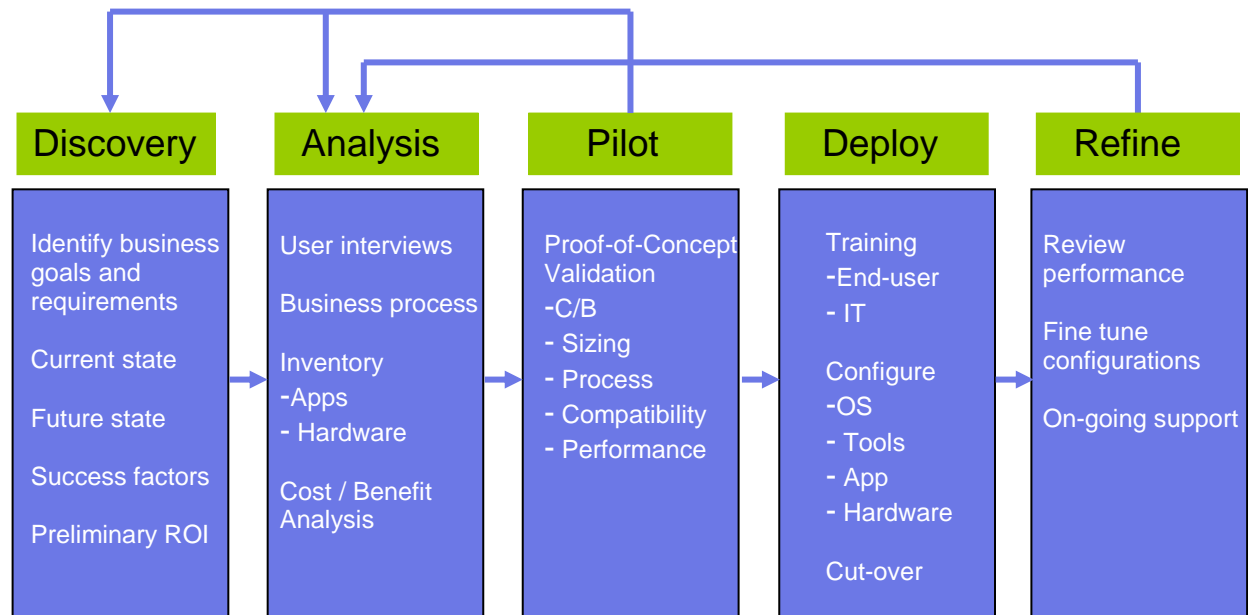
OST has architected, conducted proof-of-concepts, and implemented large scale mixed CCI and virtualized solutions at numerous customers. One such customer is Metro Health which implemented both HP's Virtual Desktop Infrastructure (VDI) and CCI. These were complex solutions and many lessons were learned about what it takes to architect a successful Remote Client Solution. As a result, we have extensive experience troubleshooting operational and performance related issues associated with virtual desktops and hosted CCI clients.

OST Remote Client Workshop

The Remote Client Workshop is a formal discussion between OST and the customer wherein OST shares with the customer a series of questions intended to identify the high-level suitability and scope of a centralized client solution. So that the information flow is bi-directional and a learning opportunity for all of the participants, OST will also share some of our field experience and surprises we have encountered in our installed base of accounts. Our lessons learned will be shared and will help provide a much-needed counterbalance to the vendor hype surrounding this topic in today's market. The workshop generally will be for a morning or afternoon with some investment in preparation in advance of the meeting for data gathering.

OST Remote Client Solution Methodology

The solution methodology diagram below was developed specifically for the OST Remote Client Solution initiative. OST has a standardized approach to the process of identifying and validating a customer for a remote client solution. The OST services associated with this methodology will be provided as a billable engagement; however, the workshop, discovery phase and analysis phases at times may be offered as a no-charge service as part of a presales investment. Our capability to utilize automated data collection methods allowing us to provide scalable assessment services which are capable of being performed in shortened time frames with minimal impact to the client. The proper execution of the OST Remote Client Solution Methodology will result in an effective appropriately sized implementation with high customer satisfaction.



OST has found that the best deployment model for Remote Client Solutions is based upon the concept of a standardized performance block (termed a “pod” or “brick”). This standardized unit will support a given number of users with a workload and usage model determined through a standardized capacity planning model. Since the performance block is self-enclosed, there are no shared resources that can become constrained which would result in an unpredictable performance when scaling the solution. One of the objectives of the above methodology is to define the number of users that can be supported per performance block coupled with the design and usage model associated with those users. From this information, an accurate budget can be established for the overall project.

Advantages of Remote Client Solutions

- Reduced cost in purchasing desktop computers, as thin clients often last two to three times longer than a desktop computer
- Centralized Client OS Management
- Rapid Client Deployment
- Reduction in desktop support costs
- Reduction in electricity costs, as thin client computers use only a fraction of amount of energy that is used by a desktop computer.
- Improved Data Security
- Secure Remote Access
- Compliance with HIPAA and Sarbanes Oxley (SOX)

These advantages are possible, and are achievable with the right approach, technology and partners. OST continues to provide thought-leadership and the kind of insight that our enterprise customers value as they consider adoption of a Remote Client Solution, or data center-based desktop computing model.