Remedy Software Products

OCV Implementation Suggestions

Version 1.01

Abstract

This document has been put together by Ingenico to provide suggestions on how best to implement various OCV implementations.

CONTENTS

INTRODUCTION

The Ingenico OCV server provides a direct payment gateway to the bank. The OCV server does not provide any client side security at all. To assist in developing client side applications, Ingenico has produced a number of utility programs, and client applications that can be used to fast track the development of client applications.

This document also details some examples of existing implementations, and the software and hardware requirements that have been necessary to make these implementations work.

PRODUCT SUPPORT

Web Site

The web site www.remedy.com.au has been set up as a development site for the Ingenico OCV server and the Ingenico PC-EFTPOS products. This site should be the first source of information for all developers. The web site contains downloads, pricing information, case studies, and online reference manuals for all OCV related material.

Email Support

The quickest and best way to get personal support for any of the Ingenico products is via email. The following is a list of the email addresses that may be of assistance.

Craig Godden – Ecommerce Business Development Manager
cgodden@ingenico.com.au

John Petersen – Software Development and Support
jpetersen@ingenico.com.au

John Aguilar – Ecommerce Development and Support
jaguilar@ingenico.com.au

Simon Beringer – Software Development and Support
sberinger@ingenico.com.au

Dealing directly with the developer responsible for a product is the quickest way to get a response. If you are unsure of the developer, or have general enquiries, please email cgodden@ingenico.com.au

Phone Support

If you would like to discuss any matters regarding the OCV server, please call the Ingenico head office on +61 2 99799333, and ask for the person you wish to speak with.

We will do our best to answer the calls, and get back to as many people as possible.

UTILITY PROGRAMS

The OCV server alone will merely provide a payment gateway to the bank. To make the OCV server useful, there must be client applications that can connect to the OCV server to utilise this payment gateway.

Ingenico has provided a suite of useful utilities and client application examples that can be used by developers to help in coding new client applications or some utilities can be used immediately by customers.

The following is a list of the available applications from Ingenico.

OCV ActiveX control

The ActiveX control is simply a Windows COM object that can be used by most Windows development environments. The control is merely a wrapper for the actual generic message format that are described in the OCV Developers Guide. This interface enables programmers to communicate directly with the ActiveX control, and therefore requires no knowledge in TCP/IP.

This control is available as a component for both Delphi and Builder C++.

OCV DLL

This DLL is identical to the above ActiveX control, except it will work without generating events. This makes it more suitable for web site integration with Cold Fusion, and Active Server page etc. (See the ASP demo utility as described below)

SQL Integration

The ActiveX control, and DLL both contain options to send all transaction details to an SQL Server. We have also written applications that can interact with an SQL server to extract the information. Contact Ingenico for more information on SQL integration.

Simple Client Source Code Examples

Ingenico has developed example applications in Delphi, Visual Basic, and Builder C++ to demonstrate how to utilise the OCV ActiveX control for programming Microsoft Windows client applications. The source code for these examples is available on the www.remedy.com.au web site. These programs are samples only and should only be used to gain an understanding of the OCV system.

Generic Interface Tester

The Generic Interface Tester is an application that has been written using the OCV ActiveX control. This application will enable a developer to set any property available on the ActiveX control, and then invoke one of the available methods that are available to the ActiveX control. The application will then wait for an event from the OCV server that will be displayed in the response properties panel. The source code for this application is available to help programmers gain an understanding of the ActiveX control. The application was written in Delphi.

Simple Graphical User Interface (GUI)

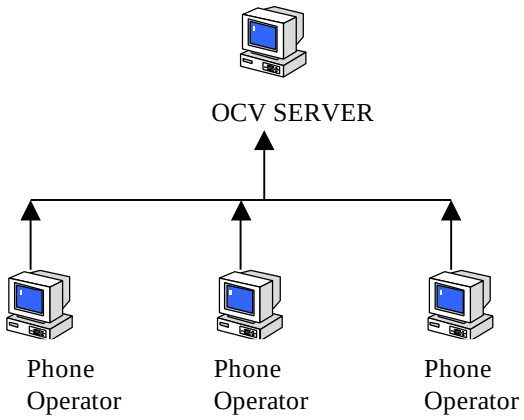
The Simple GUI is a small application that can be called from within other applications to provide a simple GUI to handle the merchant configuration required to set up the OCV server. The application source code for this application is also available upon request from Ingenico.

OCV Journal Viewer

The OCV Journal Viewer application allows a user of the OCV Server to view any of the journal files that are created by the OCV server. The journal viewer will display each transaction on the display panel, and allows for searching the journal file for records matching a set criterion. It also allows you to create graphs of the data contained in the journal file. This application is available with the live OCV server or upon request from Ingenico.

Virtual EFTPOS software

This application is a fully functional stand-alone credit card processing application. It is an expanded version of the simple client mentioned above. It will allow any business (running the Windows operating system) to install this application on one or more terminals in their office, and have each terminal process credit card transaction through the PC to an OCV server in another part of the office. The Virtual EFTPOS software has features including account selection, local totals reporting, and an SQL Server database connection option. The virtual EFTPOS software is available upon request from Ingenico. Customisations of the software can also be negotiated with Ingenico.



Call Centre Example 1

Batch Processor

A common use for the OCV server is to process a list of credit card transactions that have been accumulated over a period of time. To simplify this process, Ingenico has produced a standalone application that can take input from a flat file containing credit card information, and produce a flat file with the results of the credit card transactions. This application has a number of other features including an SQL Server link, detailed reporting, multiple merchant and statistics. This software is only available from Ingenico upon request.

Active Server Page (ASP) Demo

The ASP demo has been designed to provide an example of how a web site can be built that can easily utilise the Ingenico OCV DLL (as described above) to interact with the OCV server. The full source code for the ASP demo is available for download from the web site, and any support for the ASP demo should be directed to Ingenico.

Transaction Queue Utility

The transaction queue utility is designed to sit between the client applications, and the OCV server. The transaction queue utility will hold, and retry any transaction that a SERVER BUSY result from the OCV server. The transaction will remain in the queue for up to 60 seconds, and the queue has a maximum size of 5.

IMPLEMENTATIONS

The following is a set of examples that demonstrate how Ingenico would go about setting up the OCV server in each of the examples.

Each installation is unique, and this is merely a guide on how we would go about integrating the OCV server into existing system.

Single Web Site

This example is for a web site that is maintained and hosted at the head office of the web site owner. For this example, the web site runs on a Windows platform, with a SQL Server database as the product, and customer database.

This example will focus on the payment interaction, and assume that the HTML content side has been provided. The example below utilises the following

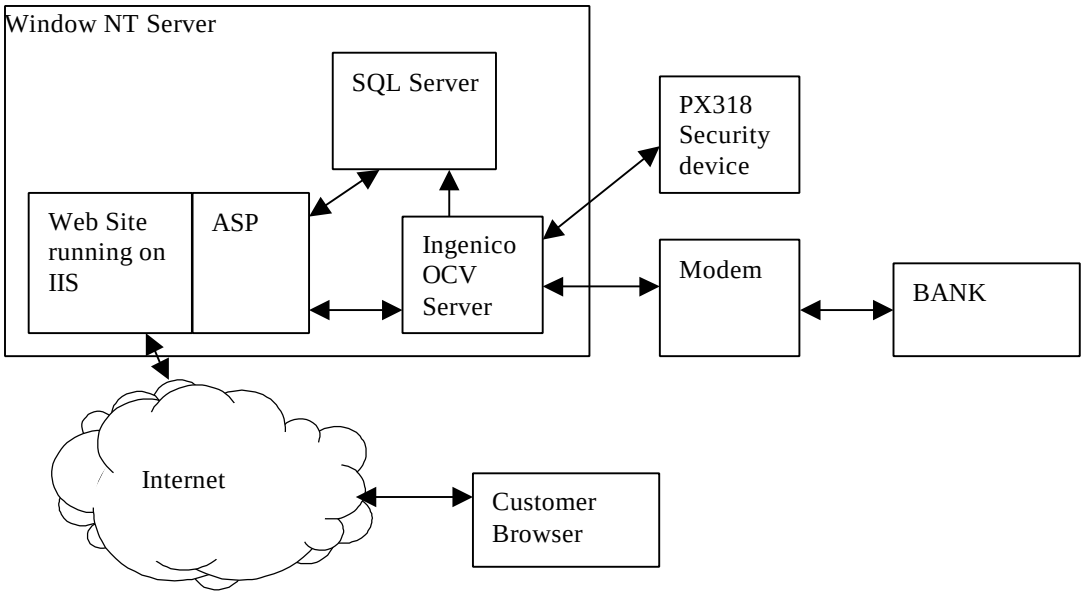
Hardware:

- Pentium II 200Mhz computer or higher
- 128Mb RAM

Software:

- Microsoft Windows NT Server 4 or higher
- Microsoft Internet Information Server (IIS)
- Microsoft SQL Server (optional)
- Ingenico OCV Server with either 1VPP or 5 VPP licence

Description:



- Both the website and the OCV Server are running on the same Windows NT Server. (We

would recommend using the hard-drive mirror option in NT to provide a quick and simple fail-safe for a hard-drive failure)

- The Web site would optionally use the SQL Server database, and the Active Server Page (ASP) processing of IIS to build the HTML pages for the customer to select the products to purchase.
- The Web Site would use the Secure Socket Layer (SSL) option in IIS to securely transfer the customer details from the customer browser to the Web site.
- Once the products have been selected, and the customer details have been obtained via SSL, use the Ingenico ASP demo to submit the transaction request to the Ingenico OCV server. The OCV server will respond to the web site with a response from the bank. This response should then be relayed to both the customer, and the SQL server so that the order can be dispatched.
- The SQL server is an optional component in this example. It is used to provide a database of customers, products, and transactions.
- The ASP demo utilises a DLL component that can send each transaction to a SQL server database. Ingenico also provides software that can be used to obtain accounting, and reconciliation information from the information that is stored in the SQL server (Note. It will only obtain information from the payments tables in the SQL server)

Cost and Performance

- There are **NO** transaction fees imposed by Ingenico at all. The only cost from Ingenico is the initial cost of the OCV Server. The bank will charge Merchant Service Fees (MSF). These are to be negotiated with the bank.

1 VPP License

Component	Price
PC running Windows NT Server	????
1 dial-up phone line	????
SQL Server	????
OCV Server (1VPP license)	$AUD2500

- The 1VPP solution will allow 1 transaction to be outstanding to the bank at any one time. Assuming each transaction takes approx 10 seconds to dial PLUS 5 seconds to the bank and back again (total = 15seconds), this solution could perform approx 4 txns per minute or 240 per hour. (Note. A leased line will eliminate the 10 second dial time)

5 VPP License

Component	Price
PC running Windows NT Server	????
1 dial-up phone line	????
SQL Server	????
OCV Server (5 VPP license)	$AUD4950

- The 5 VPP solution will allow 5 transactions to be outstanding to the bank at any one time. There will only be a dial for the first transaction. The OCV Server will keep the line open whilst there are transactions outstanding. The 5 VPP solution will handle approx 1200 transactions per hour.

Bureau Style Web Host

This example is for an ISP who will be hosting web sites who will need online credit card authorisation. The web sites in this example could be replaced by any other client input medium (such as Interactive Voice recognition (IVR) or a mail-order bureau)

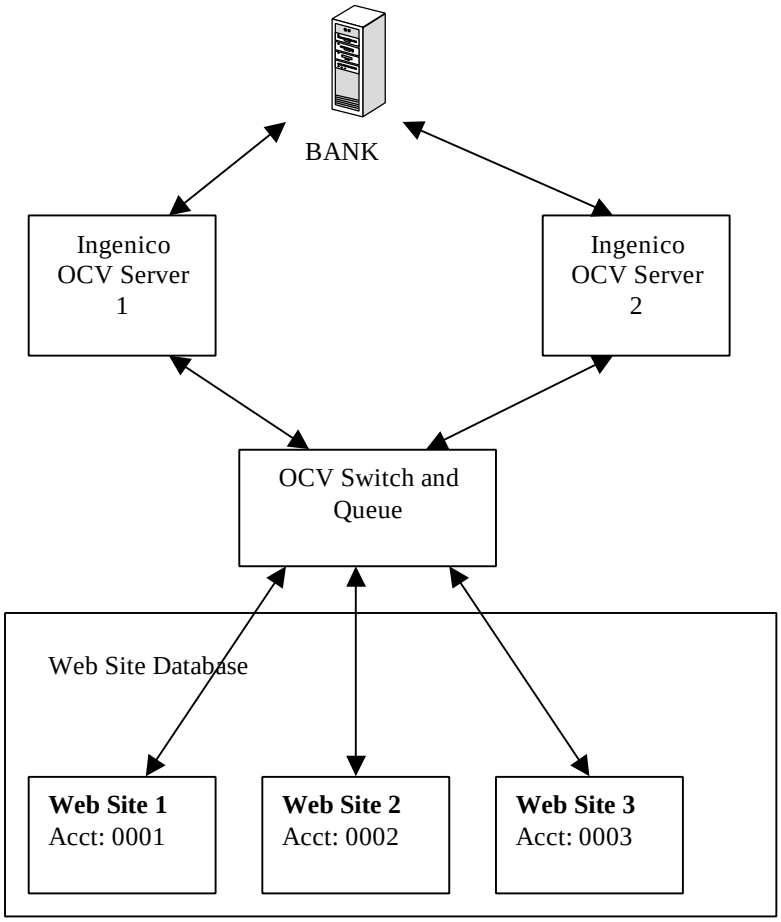
Hardware:

- Each OCV server should have the minimum OCV server requirements
- The web sites can be on any hardware platform that is capable of communicating via TCP/IP.

Software:

- The OCV servers must run on a Windows platform.
- Minimum of 2 x 128VPP OCV Servers

Description:



- This example assumes that the ISP has a database of web sites that all wish to process

credit card transactions online. Each web site has a banking relationship with a bank. Each web site therefore requires a unique Account number (eg 0002). This account number uniquely identifies the web site to the OCV Switch, which will then pass the request onto the correct OCV server.

OCV Switch and Queue

- The OCV Switch and Queue is a software application that sits between the actual web sites, and the OCV server(s). The OCV Switch will take requests from web site clients, and forward them to the correct OCV server. The reason for this middle layer is that it provides the following:

    1. **Transaction Queuing**: The OCV switch can handle queuing between each web site and the actual OCV server. If each web site has only 1 virtual pinpad, it is only possible to perform one online transaction at a time. Without queuing, the web page would get a SERVER BUSY error. The queuing will allow multiple outstanding transactions, but there will be an increase in transaction time. To avoid an increase in transaction time, assign more than one virtual pinpad to each account.
    2. **Redundancy**: Presently, each OCV server can have a maximum of 128 VPPS on each installation. If any piece of equipment (PC, hard-drive, modem, Px318 security device) fails, the ISP will lose all 128 merchants credit card processing ability until the equipment is repaired. Ingenico offers a redundant OCV server at a discounted rate to cover this scenario. The redundant server should be set up with the same merchants as the original, but with a different terminal ID. This will allow each merchant to actually be able to process two transactions at one time. If either of the two machines fails, all transactions will be routed to the working machine, until the failed machine is repaired.
    3. **Multiple Banks**: Each OCV server can only communicate with 1 designated bank. The OCV server is currently available tomultiple banks. The OCV switch can route the transaction to the correct OCV server based upon the account number.
    4. **Scalability**: The OCV Switch allows the ISP to add more OCV servers as the number of merchant's increases.
- The web site database can be on anyhardware/software platform.
- The OCV Switch/transaction Queue application is currently under development at Ingenico, however any application developer can develop this application on any software platform.
- The OCV switch is NOT a required component in this mode.
- The web sites could use the Ingenico ASP demo, or a CGI script to send the transaction request to the OCV Switch.

Cost and Performance

Component	Price
2 PCs capable of running the OCV server	?????
Communications Line (leased/dial-up)	?????
OCV Server (128VPP license)	$AUD14950
OCV Server (128VPP license)- Redundant	$AUD5000
TOTAL	$AUD19950

- This system will be capable of providing online credit card clearance for up to 128 different merchants. Each merchant will have 2 VPP slots available to use. (One on each OCV server).
- This means that each merchant can have at most two transactions outstanding at any one time. The OCV Switch can queue more if need be.
- This system will provide full OCV server redundancy.
- One leased line is capable of transmitting/receiving up to 1800 transactions per hour. Additional leased lines may be added to the OCV servers if need be

Small Call Centre

This example demonstrates how to add credit card processing capability at each phone operators screen using wither an add on program from Ingenico or by integrating the crdit card details into the call centre database application.

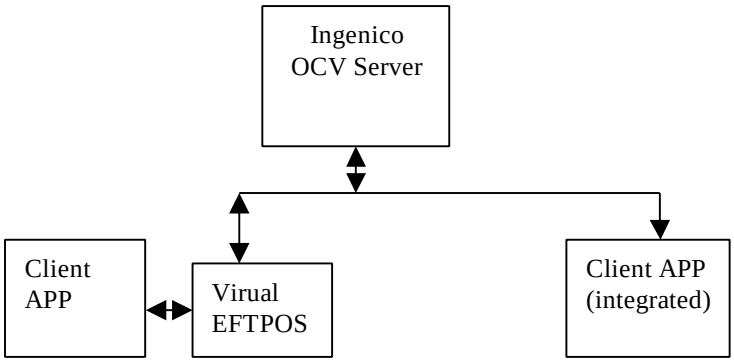
Hardware:

- Any hardware platform that runs the existing phone operator application

Software:

- Ingenico Virtual EFTPOS application.
- Ingenico OCV server (5 VPP license)

Description:



- Each client application is connected to the OCV server via an internal Ethernet LAN running TCP/IP.
- **Virtual EFTPOS client:**
  - The first client application uses the Ingenico Virtual EFTPOS application to connect to the OCV server.
  - This method requires no integration from the call centre software at all. The operator simply selects the Virtual EFTPOS icon, and enters the credit card information into this program.
  - The virtual EFTPOS software can record all transactions in a SQL Server database if required.
- **Integrated Client**
  - The integrated client application is a modified version of the original phone operator client application with provision for the entry of the credit card details. The client application will then send a request directly to the OCV server.
  - This method provides full integration of the client application and the payment method.
  - It will also eliminate any keying errors caused by entering the amount etc into multiple applications.

5 VPP license

Component	Price
1 PC capable of running the OCV server	?????
Communications Line (leased/dial-up)	?????
OCV Server (5 VPP license)	$AUD4950
TOTAL	$AUD4950

- The Ingenico virtual EFTPOS software is made available free of charge to any customer who purchases the OCV server.
- This system will allow 5 operators to send a transaction request at the same time. Statistically, this means that there can be up to approximately 25 operators using the system without any collisions.

Large Call Centre

A large call centre is similar to the small call centre example above. The major difference is that we have included an extra OCV server to handle both redundancy and load sharing.

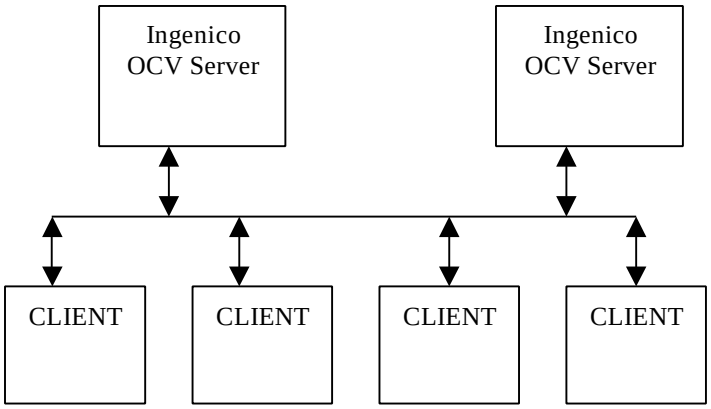
Hardware:

- 2 Windows machines that meet the OCV minimumrequirements

Software:

- 2 OCV Servers. These would be either the 5 VPP or 15VPP configuration.
- The 2 x 5VPP option would allow for up to approx 50 phone operators.
- The 2 x 15VPP option would allow for greater than 50 phone operators.

Description:



- Each client should connect to both OCV servers, and alternate each transaction OR alternatively the OCV switch application (mentioned above) could be placed between the clients and the OCV servers to handle switching and redundancy.
- Each client application could have either the Ingenico virtual EFTPOS machine, or the client could be a fully integrated solution.

Cost and Performance

5 VPP license

Component	Price
2 PCs capable of running the OCV server	?????
Communications Line (leased/dial-up)	?????
OCV Server (5 VPP license)	$AUD4950
OCV Server (5 VPP license)	$AUD4950
TOTAL	$AUD9900

- The 5 VPP license version on both servers will enable a call centre to seat up to approximately 50 operators. There would be a maximum of 10 transactions outstanding at any one time.

15 VPP license

Component	Price
2 PCs capable of running the OCV server	?????
Communications Line (leased/dial-up)	?????
OCV Server (15 VPP license)	$AUD9950
OCV Server (15 VPP license) - Redundant	$AUD4950
TOTAL	$AUD14900

- The 15VPP solution makes 30 Vpp's available for use. This will enable over 120 operators to be connected to the OCV server, with 30 performing transactions at any one time.

Regular Credit Card Billing

A number of businesses bill customers periodicaly. Credit card billing offers a flexible method for regular billing of customers for services. Examples of these are ISP monthly billing, insurance company monthly payments.

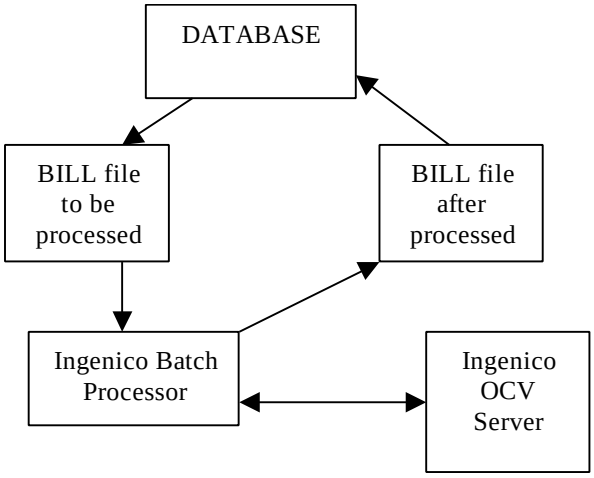
Hardware:

- Any standard PC capable of running the OCV server

Software:

- Windows operating system
- A Database (SQL Server, Oracle etc)
- Ingenico OCV server 1VPP, or 5VPP license.

Description:



- The Database application creates a flat text file (in a format specified by Ingenico). This file is then read in by the Ingenico batch processor, which will use the OCV server to clear the transactions in the text file. After the file has been processed, the batch processor will create a flat text file that the database can read to find the results of each transaction.
- The batch processor can be set up to look in a directory for the file that has been created by the database.

Cost and Performance

- The single merchant batch processor is available free of charge with the purchase of the OCV server.

1 VPP license

Component	Price
1 PC capable of running the OCV server	?????
Communications Line (leased/dial-up)	?????
OCV Server (1 VPP license)	$AUD2500

5 VPP license

Component	Price
1 PC capable of running the OCV server	?????
Communications Line (leased/dial-up)	?????
OCV Server (5 VPP license)	$AUD4950

- The 1 VPP license will process approximately 240 transactions per hour.
- The 5 VPP license will process approximately 1200 transactions per hour on a single phone line (dial-up or leased line)

Combination System

The OCV Server is not limited to one client type connection. The OCV Server is not aware of the client type connected at all. This makes it possible for a business to combine all of the different client interfaces to the one OCV Server.

This example demonstrates howto add a web server, batch program, and teleoperators to an OCV system.

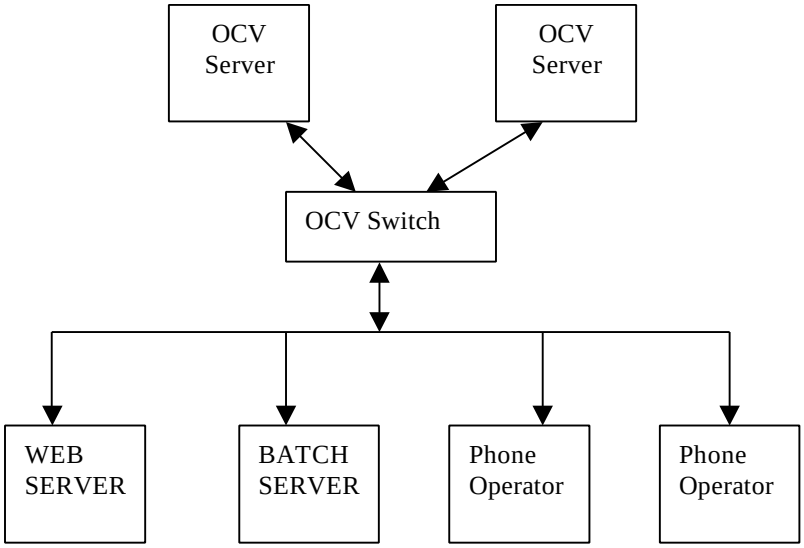
Hardware:

- 2 x Windows machines that meet the minimum OCV Server requirements

Software:

- 2 X 15VPP OCV systems. (More may be required)

Description:



- The OCV Switch (s described in the Bureau Web server example) is an optional component in this model. The OCV Switch provides the system with redundancy, transaction queuing, and allows for easy scalability. The OCV switch could also prioritise transactions sothat online transactions go to the head of the queue, whilst batch transactions run in the background.
- The Virtual EFTPOS software could be used on the Phone operator clients, whilst the Batch Processor could be used for the Batch server.
- A simple version of this solution would be to utilise only one OCV server, and no OCV Switch.

Cost and Performance

- The single merchant batch processor and virtual EFTPOS software are both available free of charge with the purchase of the OCV server.
- Two OCV servers set up as described will allow for 30 virtual pinpad connections to the bank.

If there are two communications lines to the bank, there could be up to 3400 transactions per hour to the bank.

Component	Price
2 PCs capable of running the OCV server	?????
Communications Line (leased/dial-up)	?????
OCV Server (15 VPP license)	$AUD9950
OCV Server (15 VPP license) - redundant	$AUD4950

CONCLUSION

The OCV server is a flexible software application that can be adapted to suit any number of business scenarios.

Ingenico provides a number of off-the-shelf applications that can make the OCV server immediately useful, although custom software implementations will provide the most flexible solutions overall.

Further Information

1. Ingenico OCV Developers Guide.

This document is available as a part of the OCV Software Development Kit (SDK) that is available on the web site.

2. OCV Case Studies

This document is a review of some live customers of the OCV server, and how it has been used. This is also available on the web site.