Virtuoso365 means ...

Virtuoso365 is a versatile suite of software components designed as a general purpose integration toolset. It can be used by any organisation to manage the electronic exchange of information with other parties and between systems within the organisation itself.

Its primary purpose is to provide a cost effective way to automate the exchange process in an efficient, reliable, secure and managed way. This document outlines what Virtuoso365 is and includes some examples of the purposes for which it can be used.

Virtuoso365 is internet Middleware technology. It has been designed to allow low cost entry to the B2B arena so that all business can play in this space. It provides

- an efficient way for businesses to exchange information in a “no hands required” way; and
- “out-of-the-box” solutions that open a channel of communication with internal processes or other businesses literally within a few minutes.

Virtuoso365 can be used to help your business do business better by streamlining and automating manual, problem or time expensive processes. It simplifies data exchange by addressing questions like “how do I get this system to talk to that system”.

Virtuoso365 has been designed from the “ground up” and built from the “cloud down”. It has a flexible deployment model which means it can be hosted completely inside your business or as an external (Cloud) hosting.
Virtuoso365 is an “enabling technology”: it provides a way to integrate systems that would otherwise not be able to exchange information. It does this in a secure, reliable and managed way.

Virtuoso365 is an “Any to Any” Connector. It has a flexible design that allows integration with your systems. It has an extensible and “pluggable” architecture that allows new adapters to be easily deployed and integrated.

Virtuoso365 is a multi process system. It can manage many message processes in a set and forget way. It can process your purchase orders, locate your fleet, update social media, transfer bank data to your financial system, transmit superannuation data to insurers and manage time information in a 24/7/365 capacity.

Virtuoso365 is a managed pre-emptive environment. It has in-built monitors to notify when messages are not processed within specific timeslots. This allows your business to be responsive to situation internal or external that impact performance, productivity or throughput.

Virtuoso365 is based on a point-to-point channel configuration where one receiver consumes all authorised message sent to that channel by one or more senders.
Virtuoso365 has a central message broker that manages delivery persistence and guarantees message delivery. This message broker uses a combination of ActiveMQ message persistence and RDBMS persistence.

Some simple examples will help potential customers to better understand Virtuoso365’s capabilities:

**Example 1 – A Basic Ordering System**

A business, let’s call it *We Make Things* regularly places orders with a number of known Suppliers of the materials and associated services it needs to produce its Product Lines. In the main, orders are placed over the phone. In some cases they send an email. All parties agree they would save significant costs by automating some of the processes.

In particular *We Make Things* sends orders to its suppliers frequently as it already operates under a “Just-in-time” stock management regime. Order processing is identified as the initial candidate for process automation.
We Make Things agrees with Supplies that the Order data exchange format will be in XML format. The order document contains information about

- Supplier Details (Supplier Name, Supplier Id),
- the goods ordered (Order Quantity, Description, Unit Cost, Supplier Product Id),
- Any special Terms (eg Supply ASAP, ShipTo Address),
- Order Reference Details (Order Number, Date).

We Supply Fasteners can also see the benefits in doing business more electronically. They supply to We Make Things pretty much daily and the orders were being made via email and then entered into their “Customer Orders System” by a sales person employed to monitor emails and push them through the System. Their Customer Orders System has a facility to upload electronic orders from the network file system. This hadn’t been used because the Orders needed to be in a specific format.

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1 Most suppliers will use Financial Control systems that can upload electronic documents in one way or another. This is usually via import facilities available in most modern financial control and accounting systems. Many of these Suppliers will have different ways they wish to manage the take-up of this data. In this example we will focus on one supplier let’s call this supplier We Supply Fasteners.
This scenario is not uncommon and Virtuoso365 can solve the message transport and data integration issues simply.

_We Make Things_ decides to implement its own “Hosted” version of Virtuoso365. Once installed, it can set up one or more message Channels with its suppliers. A variety of options are available to “open-up” these Channels. It decides to use the Enterprise File Sync and Share option (EFSS) using Dropbox (It could use GoogleDrive or any other EFSS compliant application). This means that each customer can have their own specific Dropbox share where orders will be directed to by _We Make Things_. Each Channel can be configured to satisfy the complexities of each respective client’s data format requirements.

Additionally, various options are available on the client side of Virtuoso365. This means, once in Dropbox, the Supplier can use the Virtuoso365 Toolkit to automate any conversion and upload of these into its System. EFFS is used as a transport mechanism. Typically files delivered to EFSS are “transient” and will be removed from Dropbox once processing is complete.

All orders from _We Supply Fasteners_ are now electronic and are processed through the system automatically, securely and reliably. From _We Supply Fasteners_ perspective the system looks something like:
Example 2 – Car Parking Bay Availability

Western Australia’s Perth City Council manages around 20 public multi-bay carparks within the Perth City precinct. These carparks are primarily used by people working, shopping, dining or seeking entertainment in the City. As a service to these commuters, the Council released a Car Parking Smart Phone Application that allows commuters to check the number of bays available in carparks via their mobile phone.

The individual carparks capture and send details of bay usage and availability every 30 seconds on a 24/7/365 availability cycle. The message are sent as xml documents.

Virtuoso365 is used in the back end of this application to manage the approximately 40,000 messages per day sent from the carparks. It processes these messages and delivers the “real-time” parking availability data via web services to the phone App. This application won the International Parking Institute (IPI) 2013 Parking Organisation of the Year award. The award was given for the City of Perth’s Parking (CPP) mobile app, the first of its kind in Australia to provide real-time bay availability.

Example 3 – Car Parking Ticket Machine - Fault Notification

City of Perth’s car parking system integrates a large number of ticket dispensing machines located all throughout the city precinct. Each ticket machine operates in a “connected”
Should a Ticketing Machine’s internal diagnostics discover any fault in the device, it sends an automatic message through the network. Virtuoso365 is used to orchestrate the integration of the fault data from these messages into the internal Faults System which is on a separate network.

Figure 6 - Parking meter breakdowns cause significant revenue loss to Local Councils

This means that repair work can be initiated immediately a fault is discovered so that the City can minimise any revenue loss from Ticket Machine service outage.

**Example 4 – The Internet of Things**

In today’s connected world more and more devices are coming onto the market to measure, alert, protect, and monitor the things we use and depend on as we go about our daily lives.

Figure 7 - The internet of Things is now part of our way of life.

These devices connect in a variety of ways and in many instances can deliver small messages that can be captured to initiate immediate remedial action, notify or alert other systems and persons, or just for analytical purposes.

Virtuoso365 provides an important role in this “connected” world. It can capture, process and relay these messages. Virtuoso365 can be used to capture real time data from mobile phones, tag readers, wireless and Bluetooth, RFID, and NFC monitoring devices.

This means that information relayed from these devices can be used in real-time and analytics gathered in a secure, reliable, managed way and used for almost any purpose.
Some uses include:

**Temperature monitoring systems**

Monitoring of perishable stocks including vaccines, food and wine can now be automated with wireless devices that are connected to the internet. Monitoring can now be centralised using Virtuoso365 to manage messages from these devices and re-route alerts when necessary.

Figure 8 - IOT Devices are continually coming on to the market

**Workforce, Personnel, Vehicle, Livestock and Pet tracking**

GIS information can be sent from mobile phone or dedicated embedded or wearable technology. This can be managed by Virtuoso365 to provide tracking and notification of people, livestock, pets, vehicles and other assets.

Figure 9 - Virtuoso365 can easily integrate to GIS tracking systems

**Moisture and Water monitoring**
Moisture measuring sensors can be monitored to determine optimum watering requirements particularly in dry climates. Virtuoso365 can be used to gather information and provide analytics for many devices.

![Simple wireless monitoring of moisture metrics](image)

**Figure 10 - Simple wireless monitoring of moisture metrics.**

**Conclusion**

Virtuoso365 has an enormous potential to streamline and improve business through smarter ways to exchange and integrate data. To see how it can help your business please contact us for a no obligation consultation.

Please visit the Virtuoso365 Website at [www.Virtuoso365.com](http://www.Virtuoso365.com) for more details.