

## WCF- Features- Interoperability

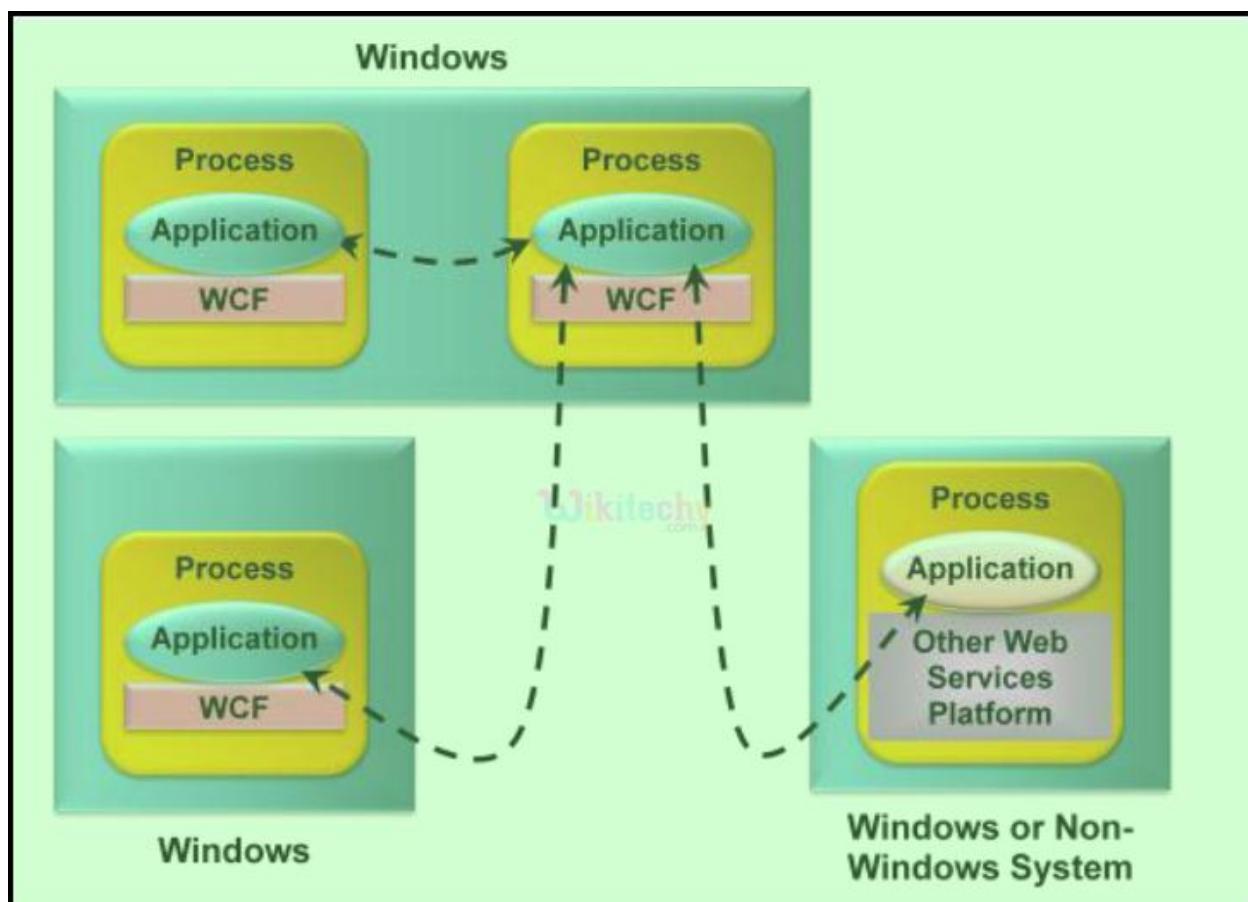
- ◆ WCF extends its support for both Microsoft based technologies.
- ◆ This WCF tutorial will focus more on this **interoperability** feature.

### Interoperability of WCF:

- ◆ WCF is capable of
  - interacting with variety of services exposed over internet.
  - It is used to communicate with programs written in different languages.
  - Based on different operating systems.
- ◆ WCF uses Web services technologies introduced by the **WS-\* specifications**.
- ◆ These specifications is the part of Organization for the **Advancement of Structured Information Standards (OASIS)**.
- ◆ Below are list of such scenarios for interactions:
  - Interacting with WCF-based applications:
    - running on the same Windows machine in a different process.
    - running on another Windows machine.



- Interacting with programs based on other technologies:
- Those programs follow web service standards.
  - They are running on the same machines with Windows.
  - They are running on machines with other operating systems. This is depicted below:



## WCF's Interoperability

## WCF Specifications:

- WCF interactivity is considered as a stable communication methodology with measures shown in the below .



### WCF specifications

#### 1. Messaging:

- SOAP and HTTP** is based on Web Service messaging which enhanced by **WS-Addressing and MTOM**.
- WS-Addressing introduces additions to the SOAP header to discontinue its dependency on HTTP protocol for message communications by using **MTOM**.
- The **Message Transmission Optimization Mechanism** (MTOM) outlines an enhanced communication format



and **XML-binary Optimized Packaging (XOP)** for SOAP messages.

## 2. Metadata:

- ◆ The **Web Services Description Language (WSDL)** with standard language specification for Web Services is enhanced by WS-Policy, WS-Metadata Exchange and WS-Discovery.
- ◆ **WS-Policy** permits description of more lively aspect of a service's performance.
- ◆ **WS-Metadata Exchange** permits a client to demand explanations about WSDL and its policies, via SOAP messages.
- ◆ The **WS-Discovery protocol** enables services to be identified at runtime in an interoperable manner.

## 3. Security:

- ◆ **WS-Security, WS-Trust and WS-Secure Conversation** provide enhancements to SOAP messages in order to deliver authentication, data reliability, data confidentiality and other related security features.



## 4. Reliability:

- ◆ WS-Reliable Messaging defines enhanced reliable **end-to-end communication** for one or more SOAP message transfers.

## 5. Transactions:

- ◆ WS-Coordination and **WS-AtomicTransaction** permits two-phase commit transactions with SOAP-based message exchange.

