



ICS Cybersecurity. Safety. Compliance.

Welcome to OPC 101

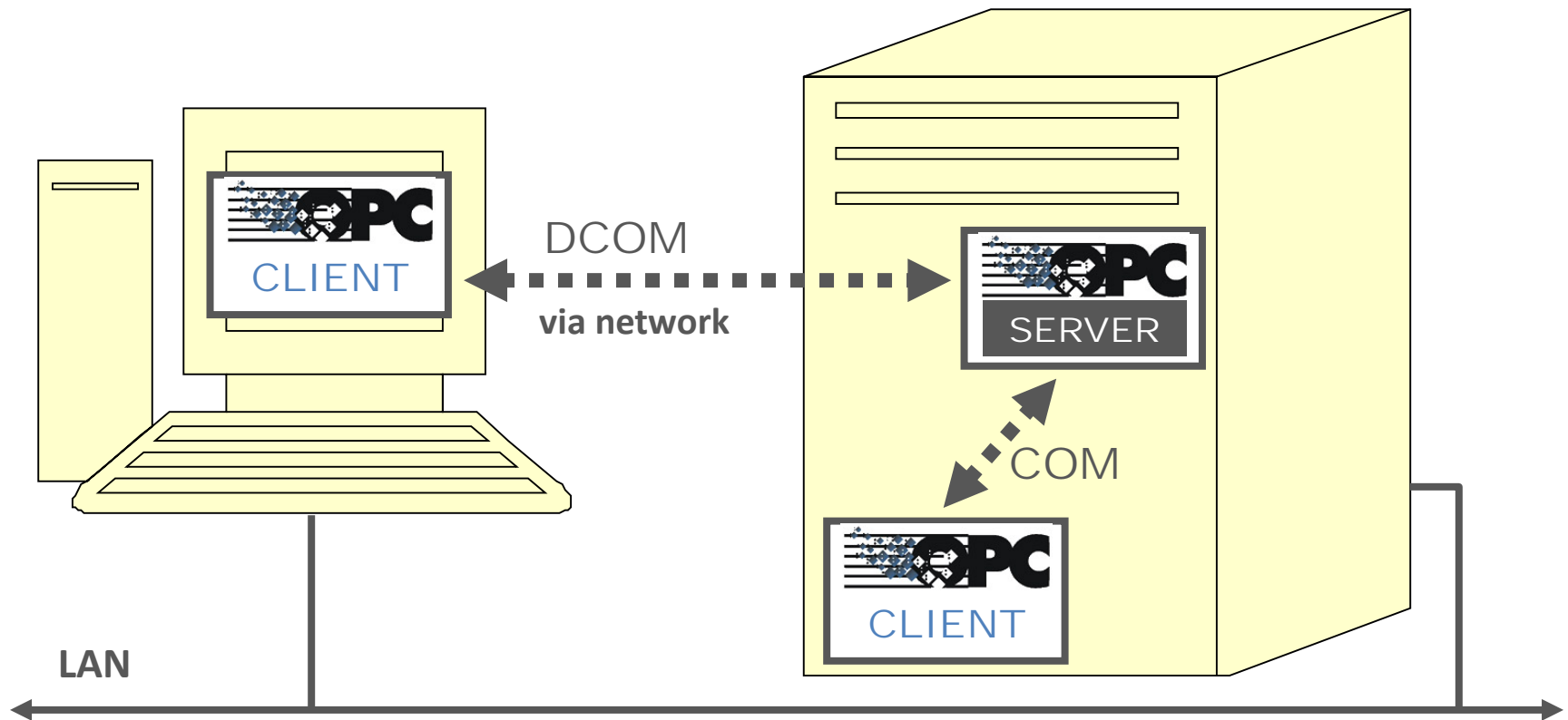


OPC

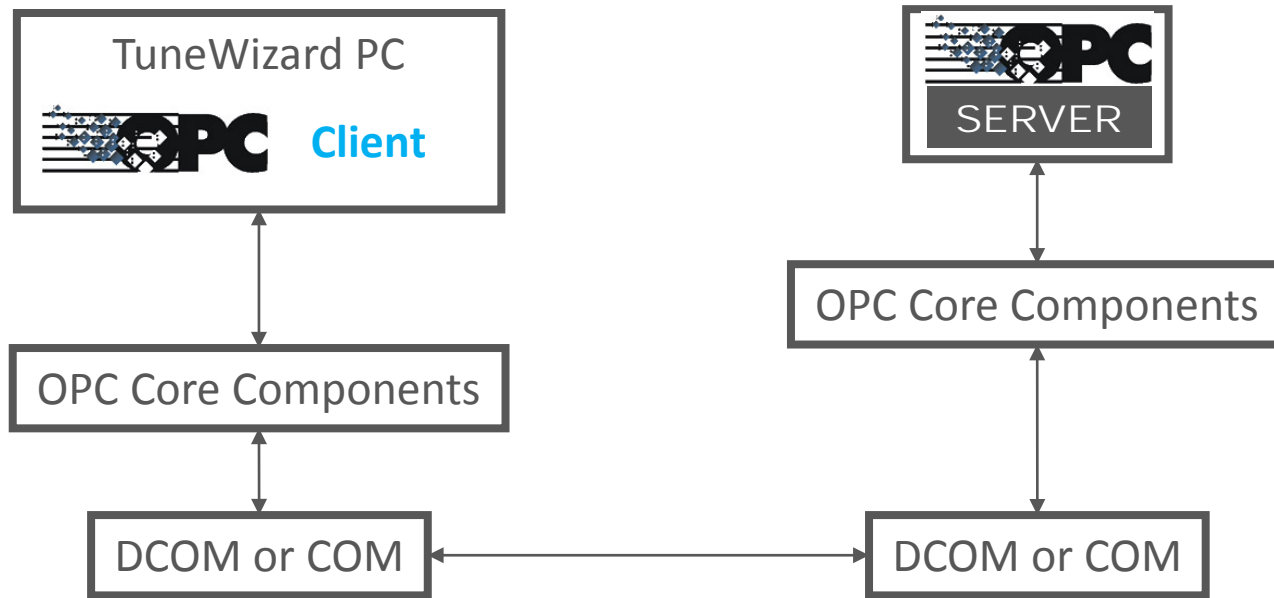
- OPC is a data acquisition technology
- Object Linking & Embedding for Process Control
- OPC Foundation Standards
 - OPC DA, OPC HDA, OPC AE
 - XML DA
 - OPC UA (Open Connectivity Unified Architecture)

COM versus DCOM

- COM = Local, no security required
- DCOM = Remote, lots of security required

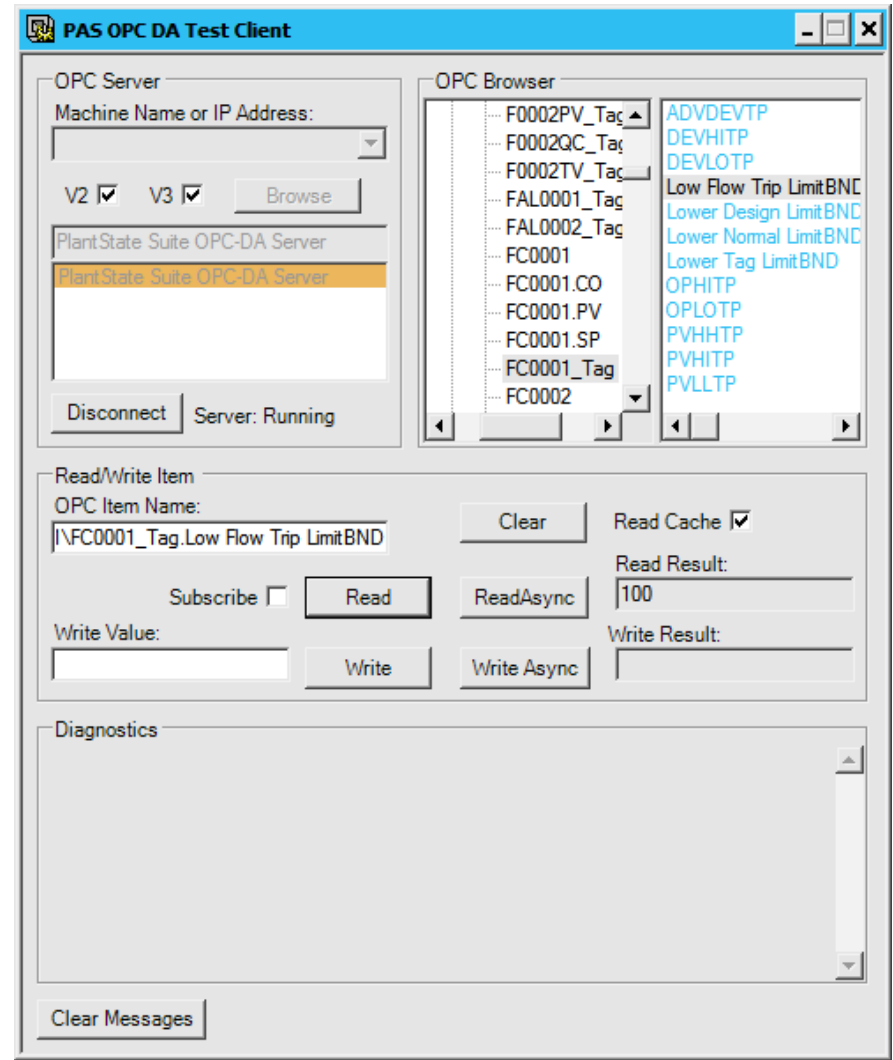


TuneWizard Communication Path via OPC



PAS OPC DA Test Client

- Items in an OPC server are typically organized in a tree hierarchy (address space), where the branch nodes serve organizational purposes (similar to folders in a file system)
- The leaf nodes correspond to actual pieces of data that can be accessed (similar to files in a file system) – the OPC items.





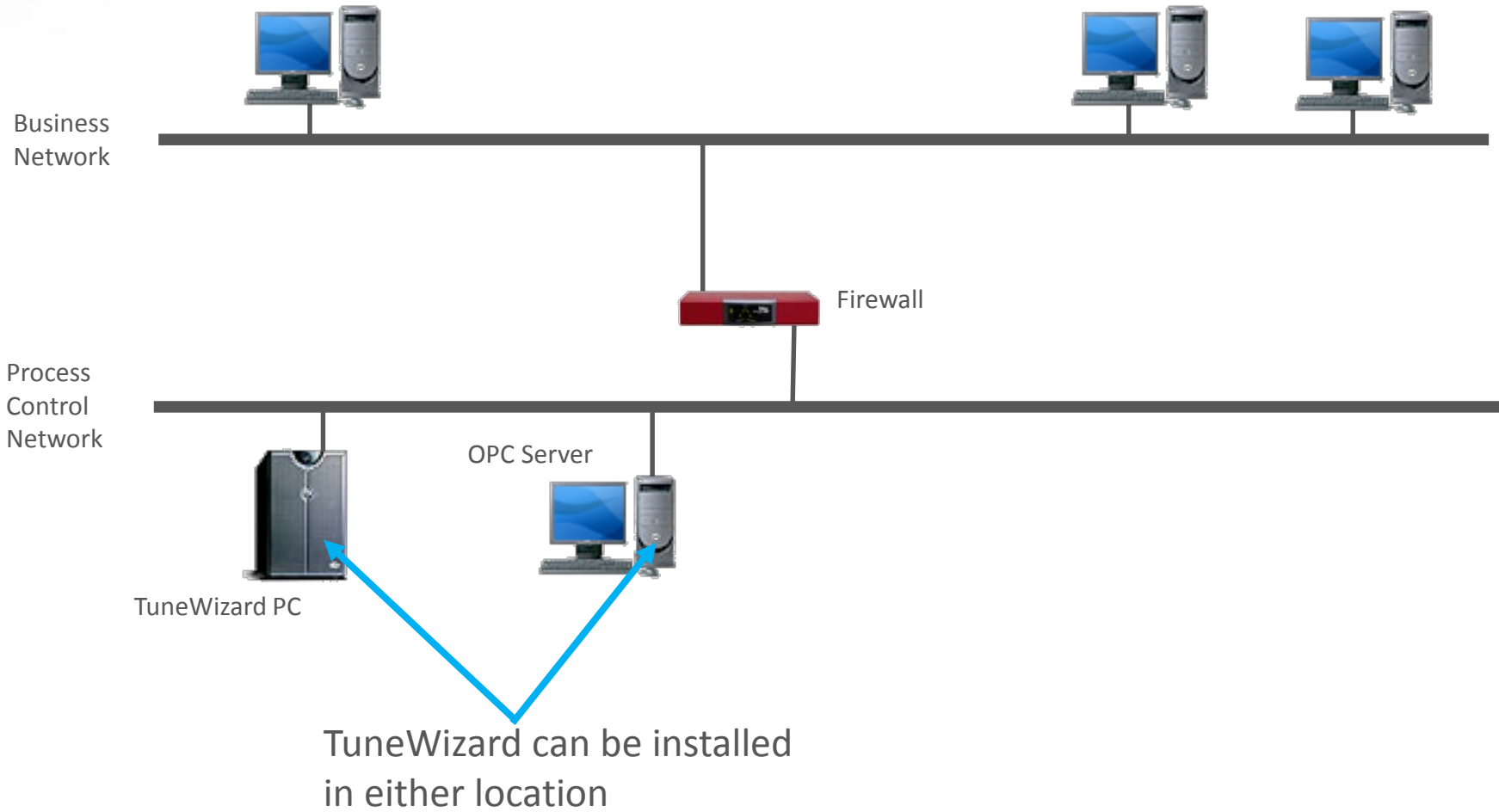
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TuneWizard Deployment for OPC Data Collection

TuneWizard OPC Client

- Option 1 – TuneWizard installed on computer separate from the OPC Server
 - DCOM required
- Option 2 – TuneWizard installed on the computer hosting the OPC server
 - DCOM not required

TuneWizard Deployment Options





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DCOM Configuration

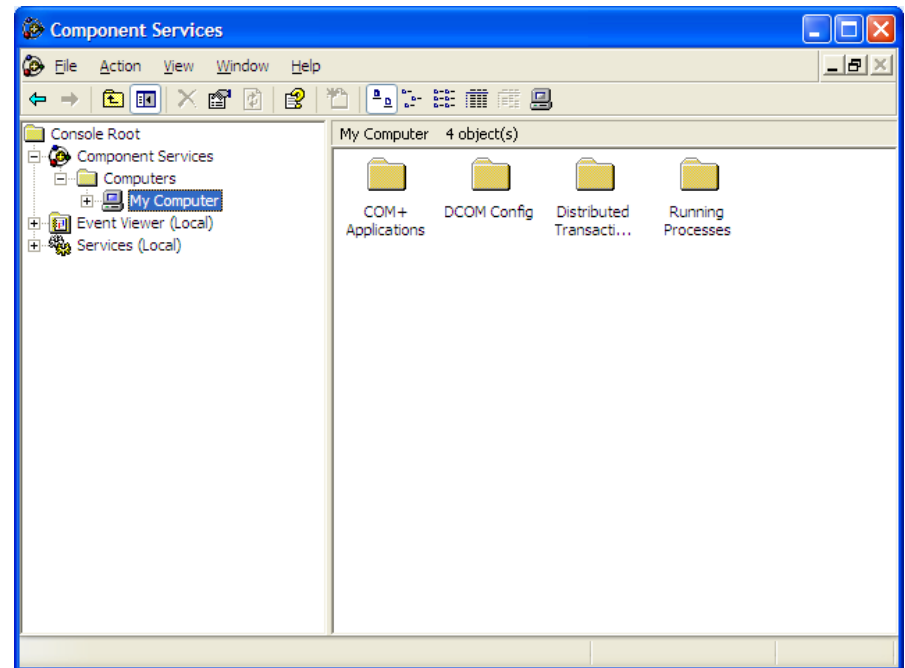
DCOM Configuration

- It's like a combination lock
- Has to be set in four places
 - OPC Server application
 - OPC Enum application
 - OPC Server (machine) Defaults
 - OPC Data Collector (machine) Defaults
- Probably more than one combination of settings will work, but if not in this document, you're on your own!



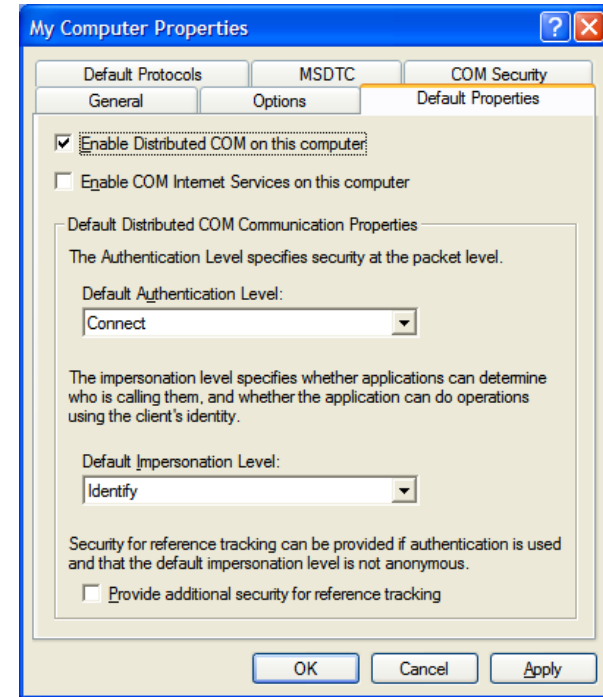
DCOM Configuration: Windows XP, 2003, 2008, 2012

- Start | Run | dcomcnfg
- Drill down Component Services
- Right-click My Computer
- Select Properties



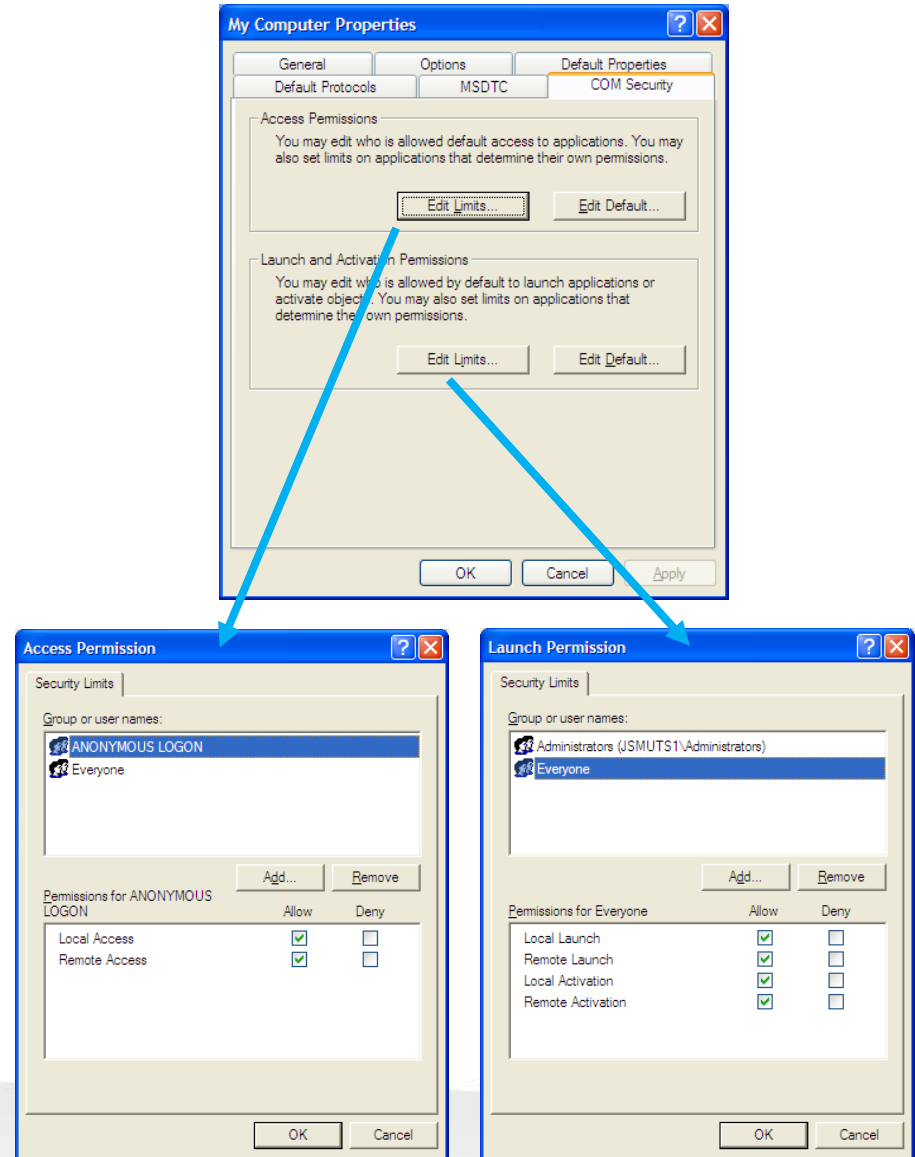
OPC Server Machine: Default Properties

- Enable Distributed COM on this computer
 - Must be checked
- Default Authentication Level
 - Set to “Connect”
- Changes to Default settings require a reboot



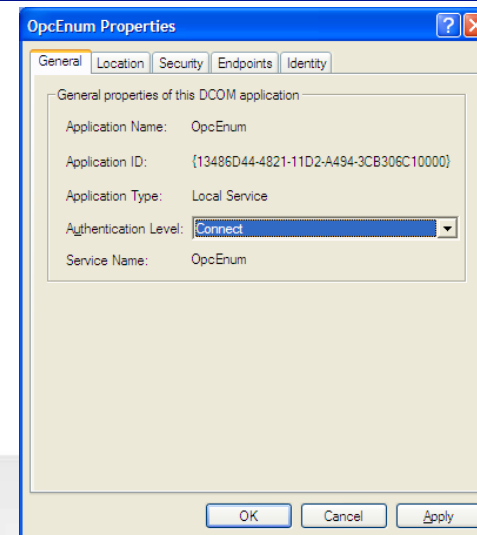
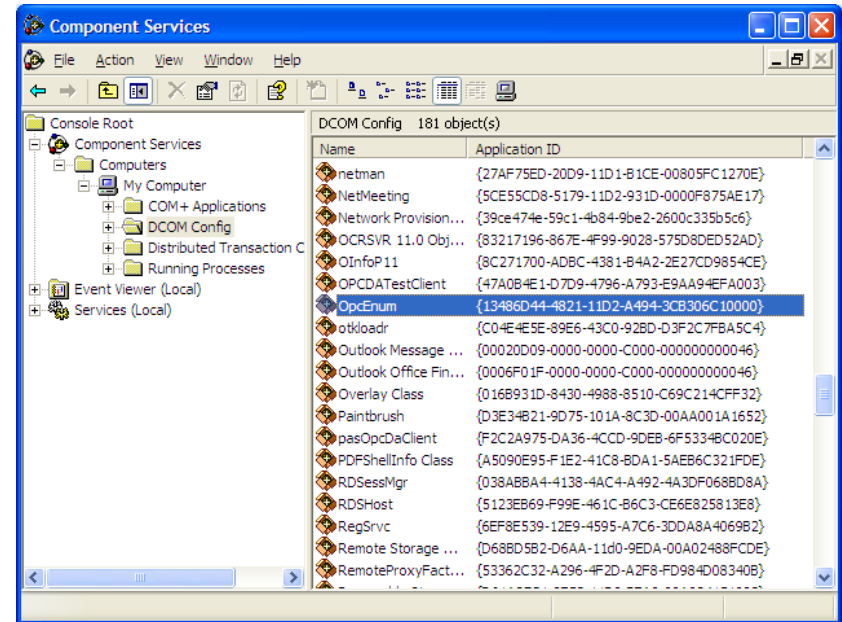
OPC Server Machine: DCOM Security Settings

- Win XP, 2003, 2008, 2012
- Access Permissions
 - Edit Limits
 - Check Remote Access for ANONYMOUS LOGIN
 - This setting is necessary for OPCEnum.exe to function
- Launch and Activation Permissions
 - Edit Limits
 - Check Remote Launch and Remote Activation for Everyone
- Changes to DCOM Security settings require a reboot



Application-specific DCOM Configuration

- Windows XP, 2003, 2008, 2012
 - Drill Down to DCOM Config
- On OPC Server Machine
- For OPC Server application and for OPCEnum.exe
 - Authentication Level – set to Connect
- Note: Honeywell OPC Server is hci.TpnServer



Application-specific DCOM Configuration 2

- For OPC Server and for OPCEnum.exe
 - Launch and Activation Permissions – Set to Customize
 - Access Permissions – Set to Customize
 - Edit Both – Add account under which OPC Data Collector is running and check all boxes
- OPC Server and OPCEnum.exe have to be stopped and restarted, or machine rebooted

