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Best Practices for Securing Your PI System

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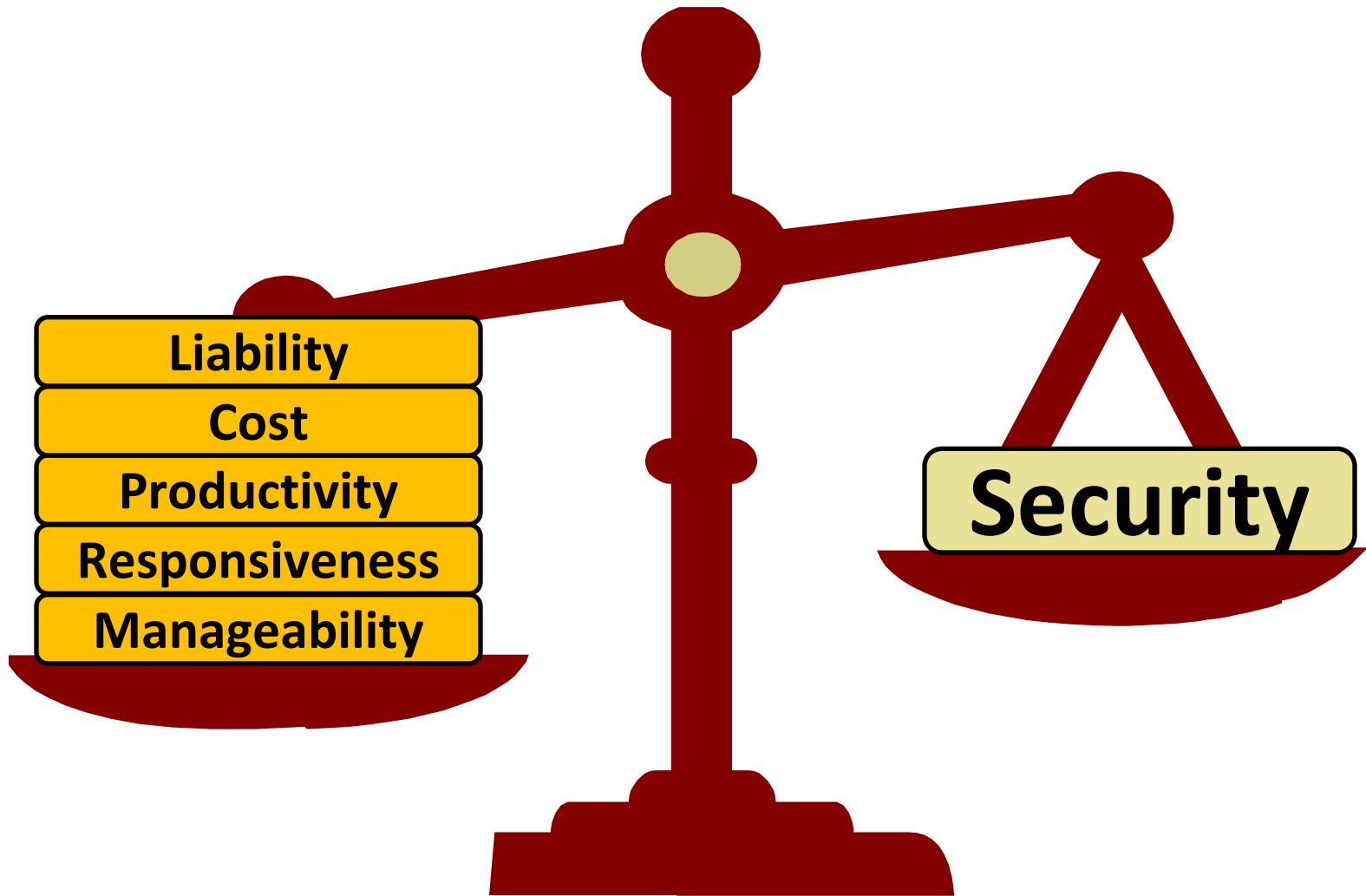
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What is a best practice for security?

- Security is all about risk mitigation
- Best practices for security are:
 - Not necessarily about technology, it's methods and technique.
 - Must be practical and effective
 - Not absolutes, but guidelines for application
 - Everyone is different, must adapt security for your situation

How much security is “good enough”?





Why is security so hard?

- Implementing security requires effort - cost can be high
- Security needs change – expanding scope, unclear requirements
- Working with other groups – especially IT!
- Various security architectures – throughout PI System and organization
- Manageability effort is high



How does the PI System help?

- Acts as secure layer between end users and control systems or critical assets
- No need to reinvent the wheel
 - PI System integrates with Microsoft technologies and your existing IT infrastructure
 - If you're using Windows security for SQL Server or other data sources, then PI System security is analogous

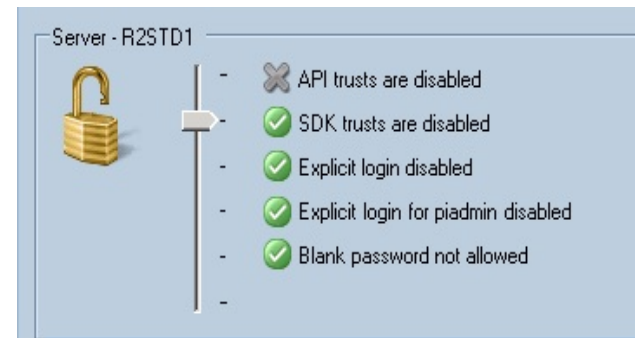
Where does Windows security apply in PI System?

- Securing access to all nodes in the PI System
 - PI Interfaces, PI Server, PI Data Access, PI Clients
- Securing the PI System through the network
 - Intranet and Internet
- Securing PI System data and metadata
 - PI Tags, PI AF elements, etc.
- Securing files and configuration
 - Archives, displays, spreadsheets, etc.
- Securing applications
 - SQL Server, SharePoint, Terminal Services, etc.



What options are available in PI Server?

- Explicit Login is disabled by default now
- PI Trusts are required for most PI Interfaces, PI ACE, PI Notifications
- Windows security is recommended for all interactive user scenarios
 - No more passwords to remember!
 - Stronger and more flexible security
 - Centralize user management in AD

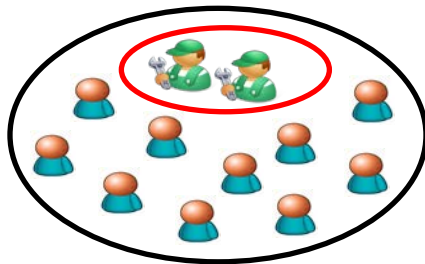




What is the right security model for me?

- Role-based security for different groups and access levels
 - Who should access your PI System data
- Determine the right number and type of roles
 - What departments in your organization use the PI System
 - Which PI System products are you using
 - Who manages data vs. configuration vs. applications
 - What data types (tags, elements, displays, etc.) should be secured

What is the easiest way to get started?



AD Groups:

Administrators

Domain Users



PI Identities:



piadmins(Read/Write for all data)



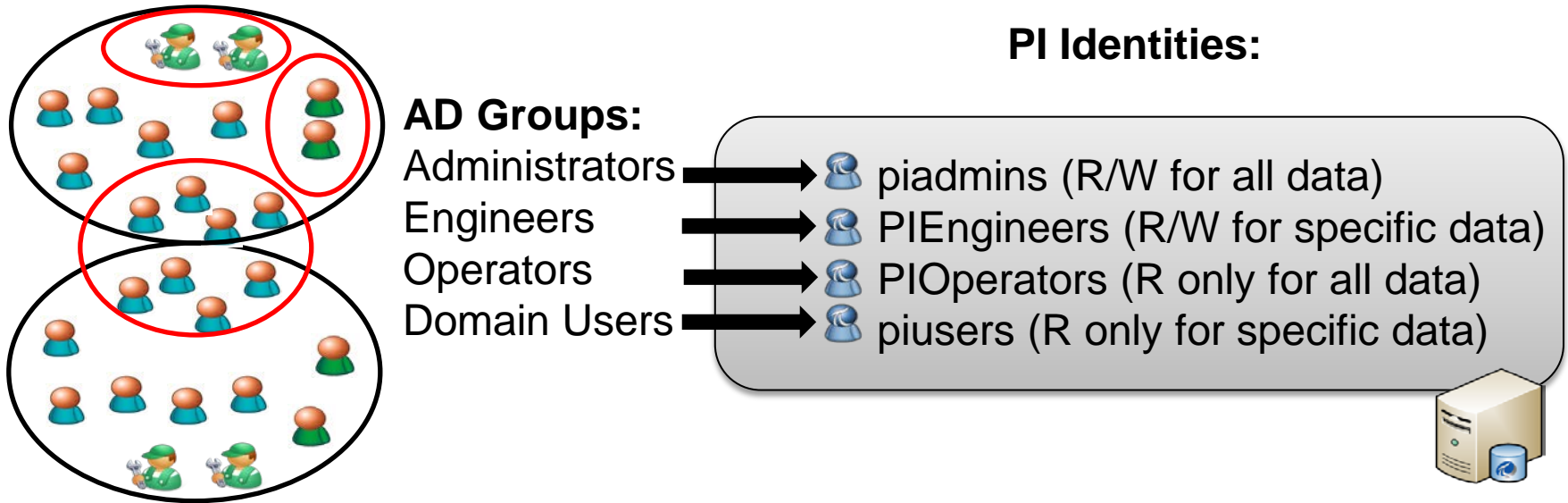
piusers (Read Only for all data)



- First, enable Windows integrated security on the PI System
- Configure mapping between Active Directory Groups and PI Identities
- Only use PI Trusts for PI Interfaces, PI ACE, PI Notifications or other special cases
- Last, disable or delete PI Users and Groups (piadmin/pidemo)

What if I want more control?

- Use the security principle of **least privilege**





What should I do next?

- Review resources on Microsoft and PI System security
- Analyze your requirements
- Plan your architecture
- Acquire/upgrade/install the latest PI System products
- Test/verify your configuration
- Schedule your rollout
- Monitor/audit the PI System
- Watch the Tech Support Site for security info



What are the key takeaways?

- There is no “one size fits all” approach to security
- Security is applied across the entire PI System
- Whatever your security policy or requirements, PI System is flexible enough to accommodate it
- OSIsoft (especially Tech Support and CoE) can help!



Where can I learn more?

- [Microsoft TechNet Security Process Map](#)
 - Plan and evaluate your IT infrastructure
- OSIsoft Resources on PI System security
 - Tech Support site→Knowledge Center→System Manager Resources→[PI Server Security](#)
 - [PI System 101 - Security](#) webinar on OSIsoft vCampus
 - [Support for Windows Security in PI Server 3.4.380](#) Training webinar
 - [Essentials for PI in a NERC CIP Environment](#) Training webinar
 - [KB Article # KB00354](#): Windows Security Requirements for PI Server 3.4.380.36 and later
 - PI System Manager I Training course



Thank you