



1990 Worldwide Developers Conference

PPC Toolbox

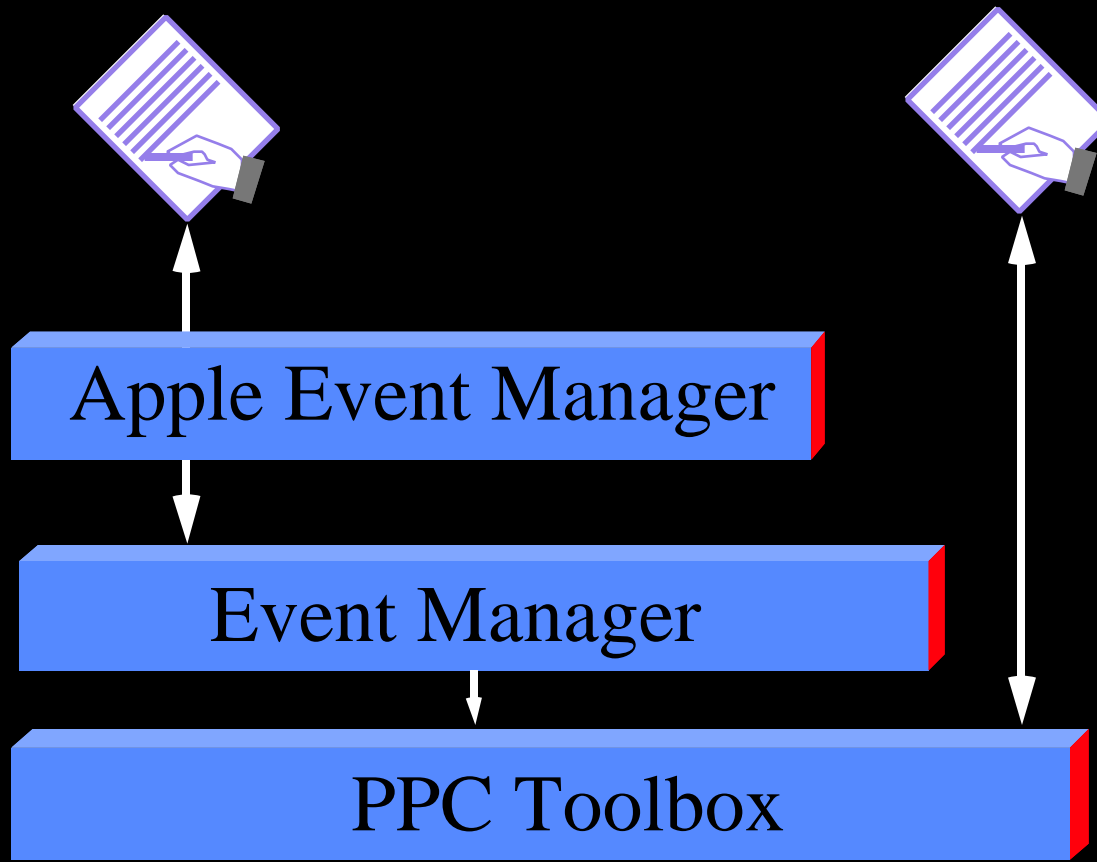


C. Victor Chang

Manager, Collaborative
Applications Toolbox

CNSD

The PPC Toolbox Forms the Base for IAC



You'll Hear About:

- Overview and Key Features
- PPC Model
- Terminology
- Usage

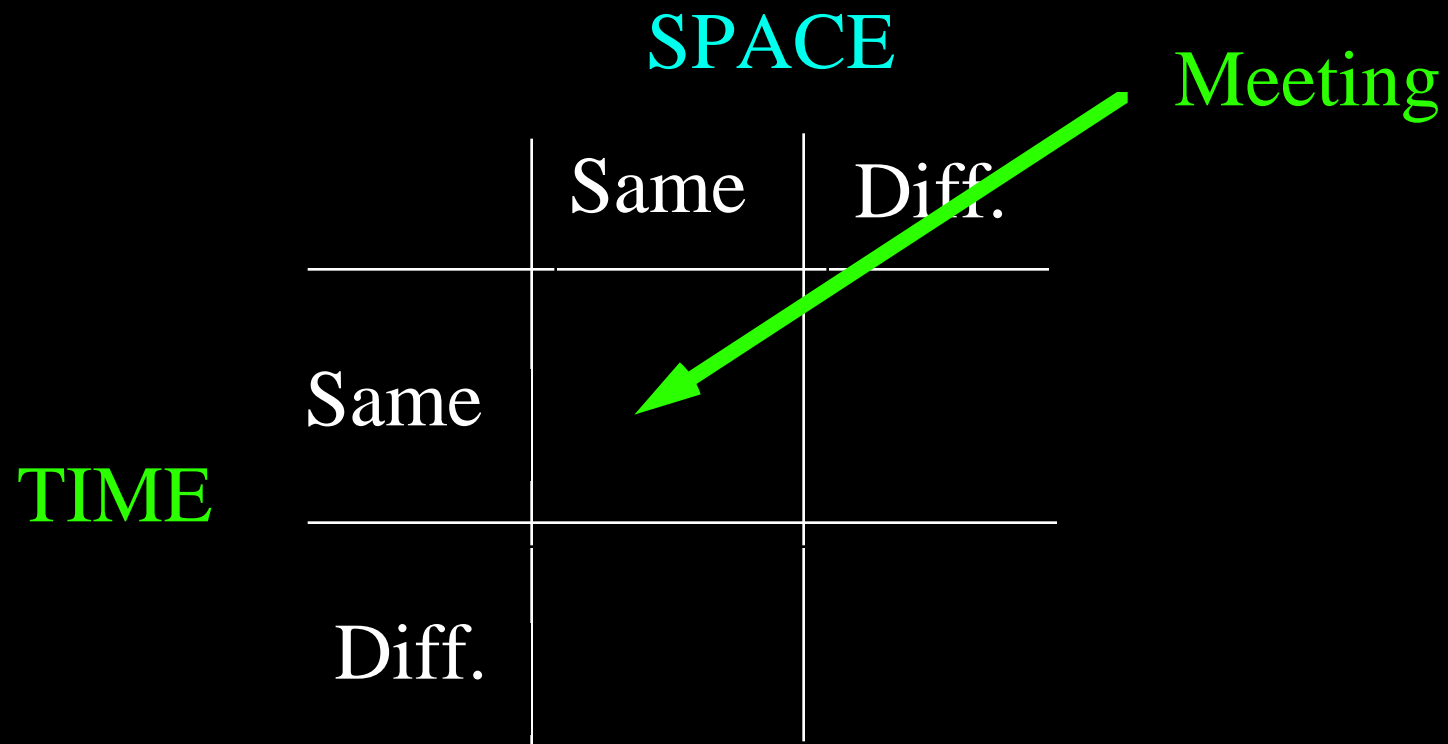
Human Collaboration

SPACE

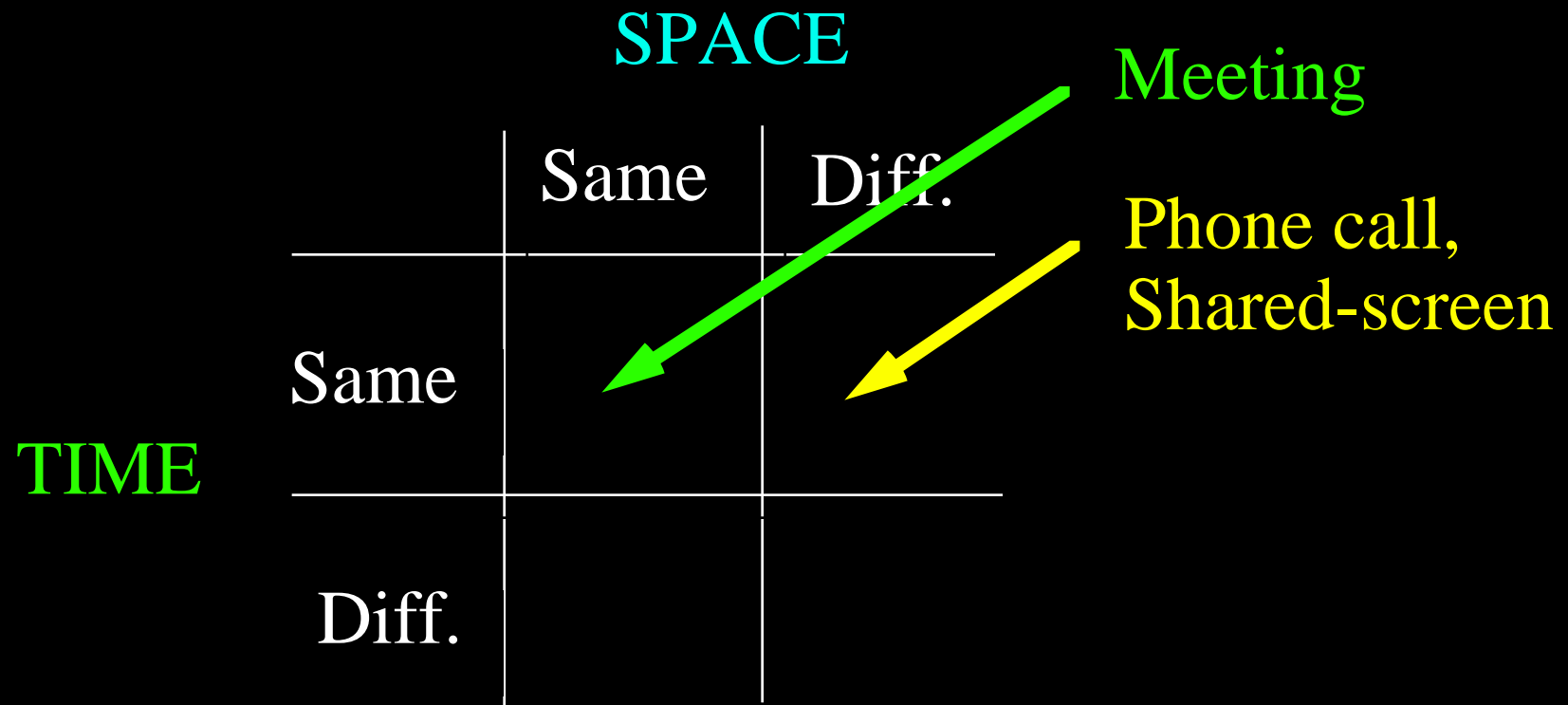
TIME

	Same	Diff.
Same		
Diff.		

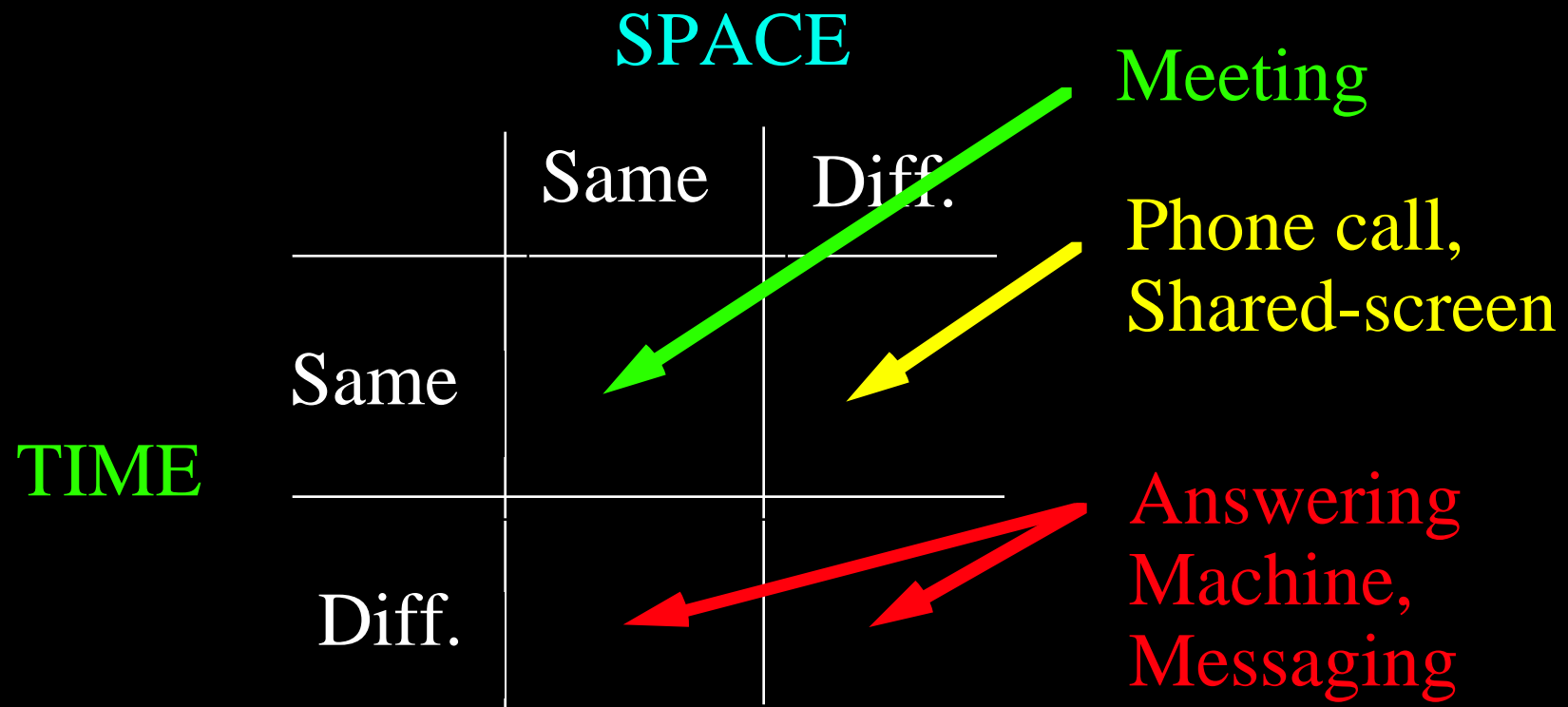
Human Collaboration



Human Collaboration



Human Collaboration



A Unified Interface

PPC Toolbox

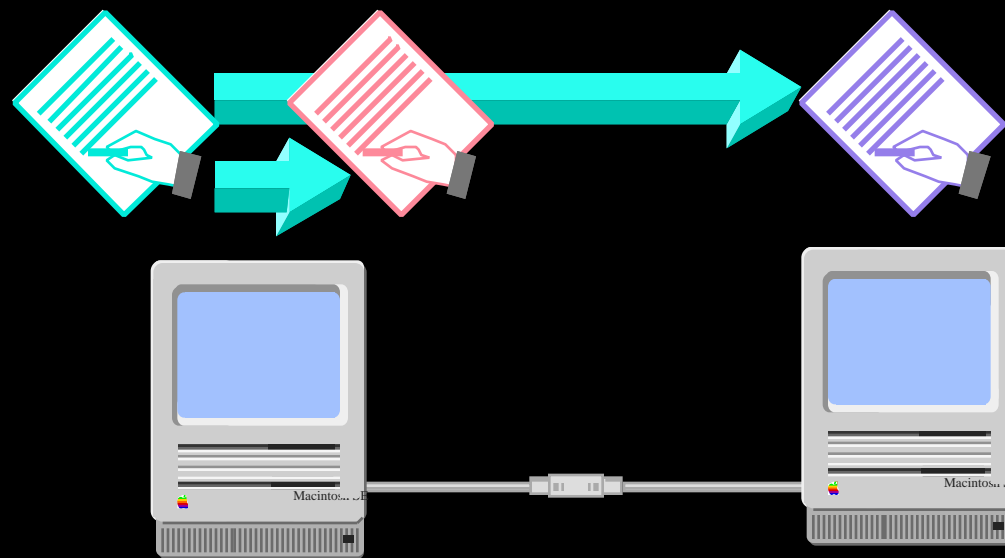
Immediate

Store/Forward

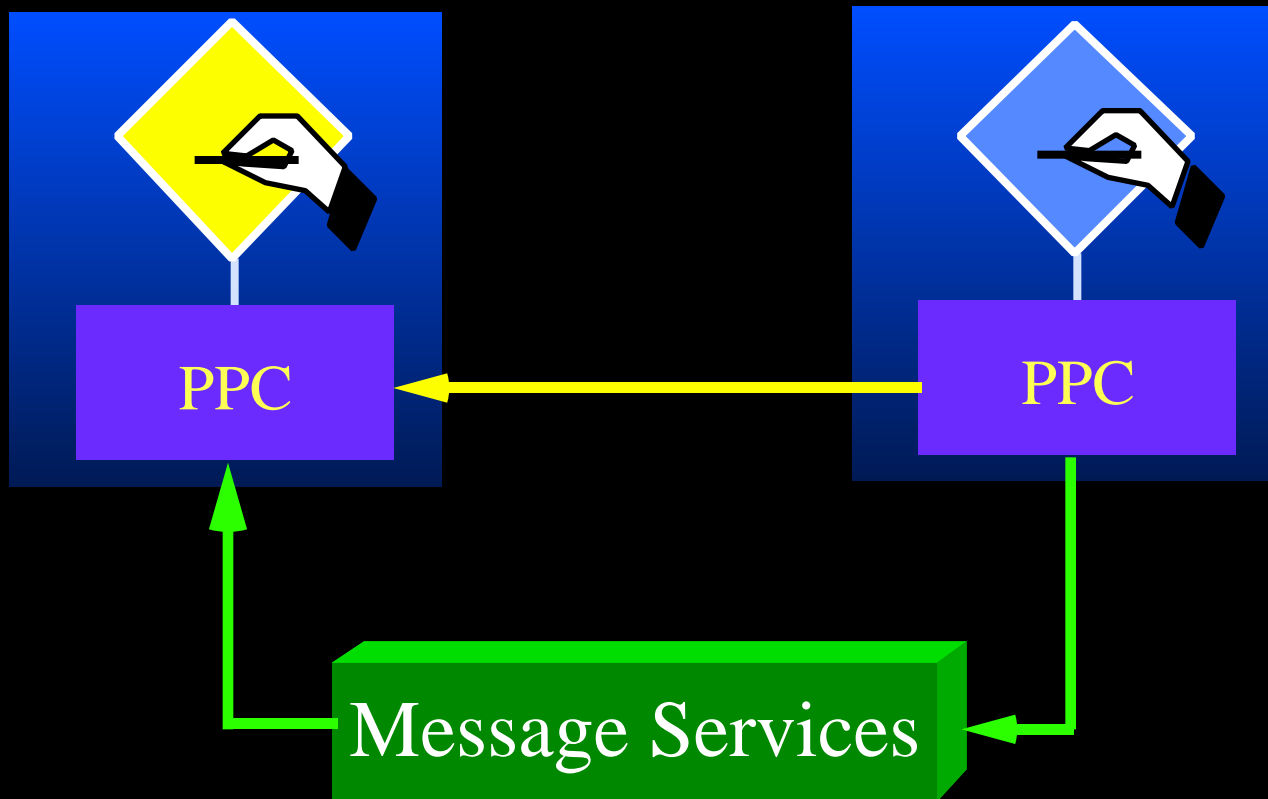
Local

Network

Local and Network Transparency



Immediate and Store-and-Forward



Concepts of the PPC Toolbox



Ports



Ports

Concepts of the PPC Toolbox



Concepts of the PPC Toolbox



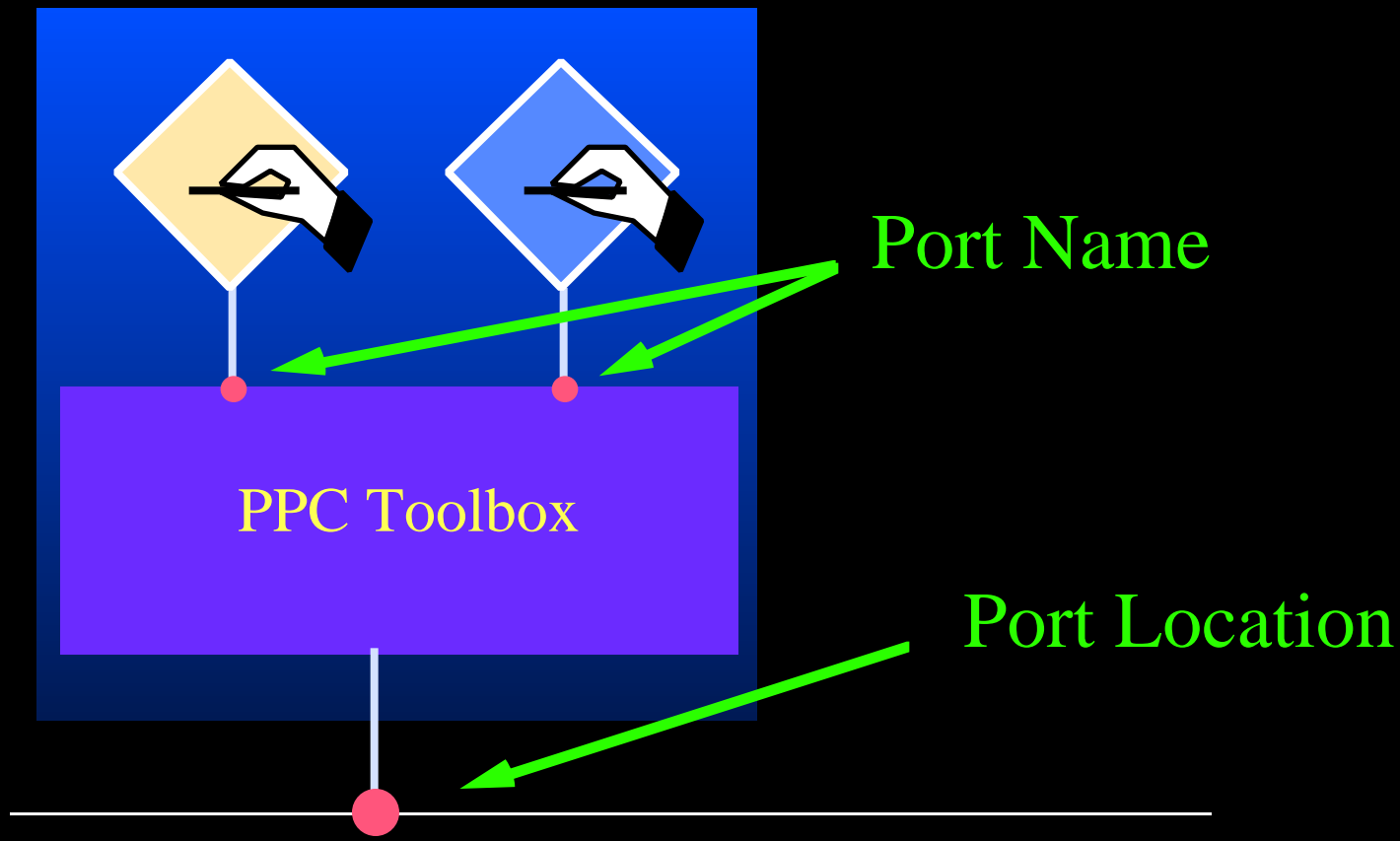
- Data Exchange

Concepts of the PPC Toolbox

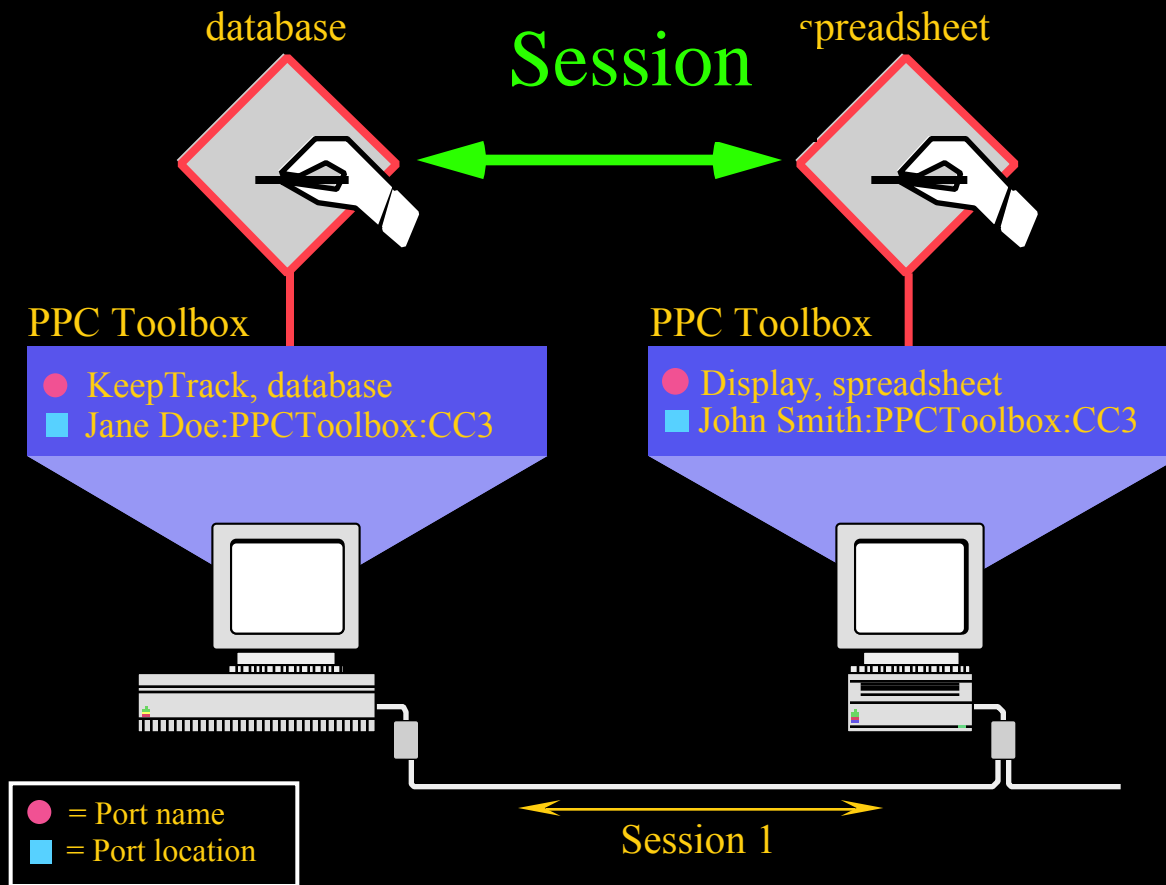


- Data Exchange
- Authenticated

Applications use Ports to Identify Each Other



...Then They Establish Sessions Between Ports



User Authentication

Inter-Personal Communication:

User Authentication

Inter-Personal Communication:

- Who?

User Authentication

Inter-Personal Communication:

- Who?
- How do I know?

User Authentication

Inter-Personal Communication:

- Who?
- How do I know?
- Do I want to allow him?

User Authentication

Inter-Personal Communication:

- Who?
- How do I know?
- Do I want to allow him?
- If yes, What?

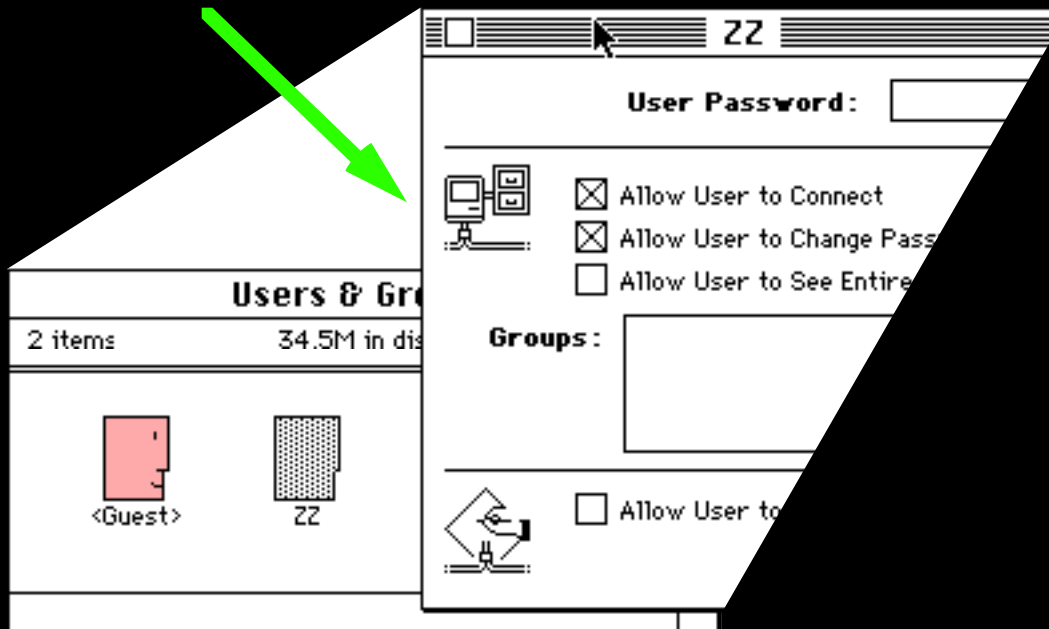
User Authentication

Inter-Personal Communication:

- Who?
- How do I know?
- Do I want to allow him?
- If yes, What? ← Access Control

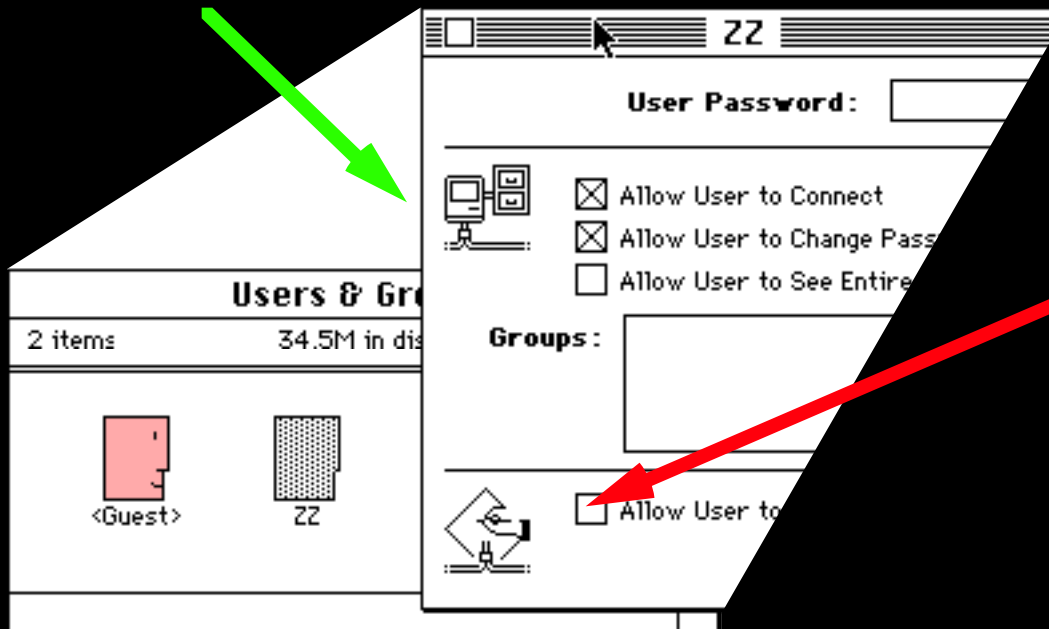
User/Group Finder Extension

Individual access controlled through
Users & Groups Container



User/Group Finder Extension

Individual access controlled through
Users & Groups Container



IAC
Access
Control

PPC vs. High-level Events

- Use PPC Toolbox for:

PPC vs. High-level Events

- Use PPC Toolbox for:
 - **Non-Applications** (Device Drivers, Toolboxes, etc.)

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 - Need **Asynchronous** operations

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 - Need **Asynchronous** operations
 - **Resources sharing** among ports, sessions (Servers)

PPC vs. High-level Events

- Use PPC Toolbox for:
 - **Non-Applications** (Device Drivers, Toolboxes, etc.)
 - Need **Asynchronous** operations
 - **Resources sharing** among ports, sessions (Servers)
 - **Non-event** oriented

PPC: How it works

Recipient

Initiator

PPC Open

PPC: How it works

Recipient

Initiator

PPC Open

PPC Inform

PPC: How it works

Recipient

Initiator

PPC Open

PPC Inform

PPC Browser

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PPC: How it works

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PPC Read

Initiator

PPC Browser

PPC Open

PPC Start

PPC Write

PPC: How it works

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PPC Inform

PPC Open

PPC Accept

PPC Start

PPC Read

PPC Write

PPC End

PPC End

PPC: How it works

Recipient

Initiator

PPC Open

PPC Browser

PPC Inform

PPC Open

PPC Accept

PPC Start

PPC Read

PPC Write

PPC End

PPC End

PPC Close

PPC Close

User Manager & Authentication

Initiator

App A

PPC

Recipient

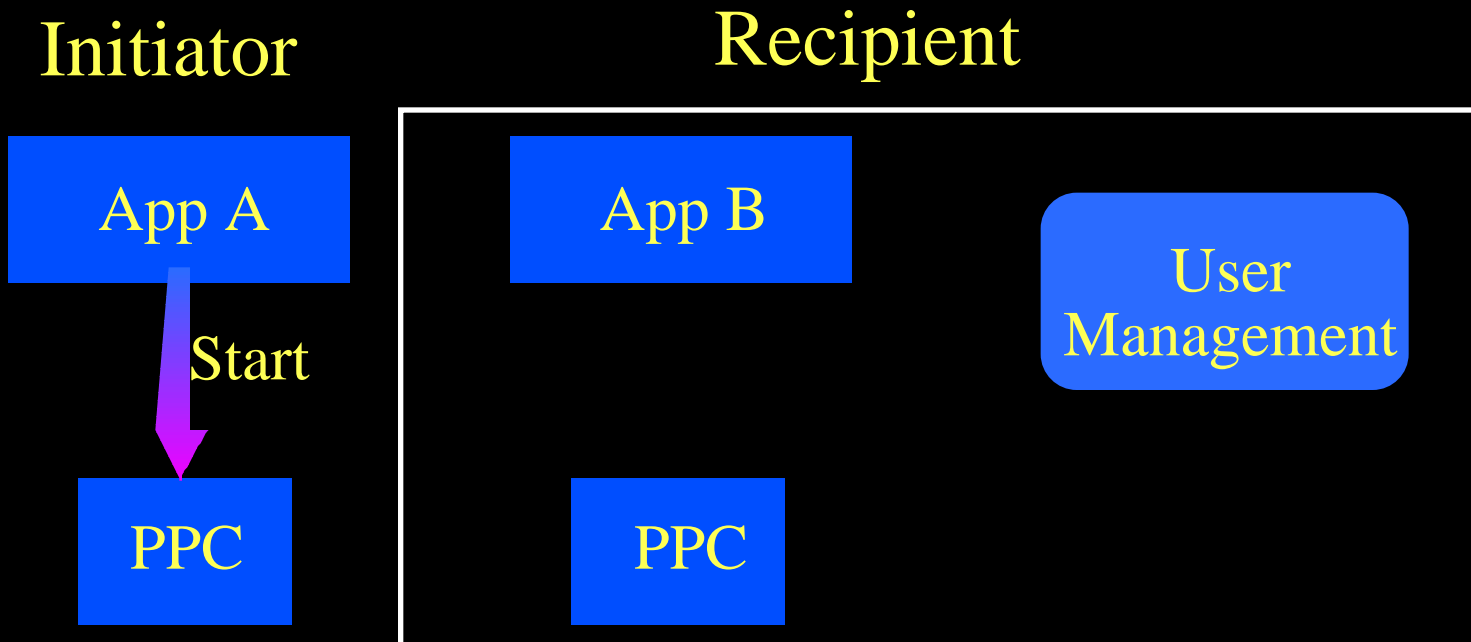
App B

PPC

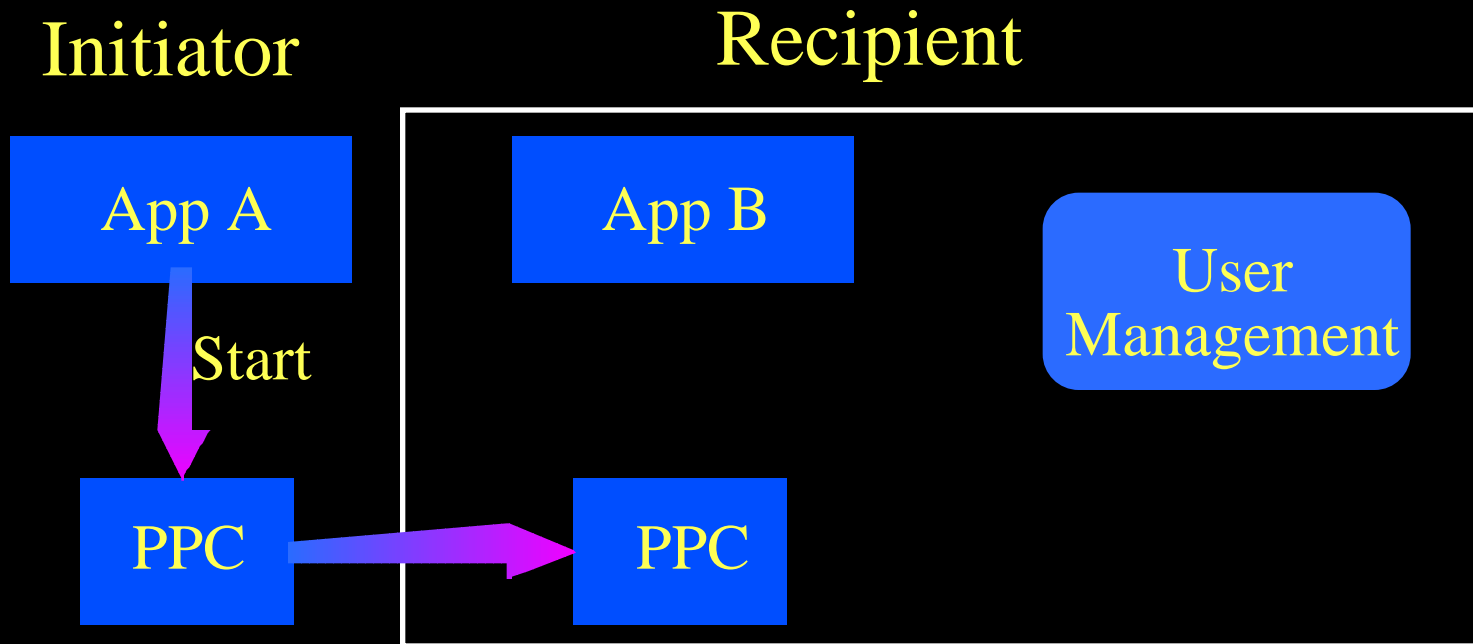
User
Management

```
graph LR; subgraph Initiator; direction TB; IA[App A]; IPPC[PPC]; end; subgraph Recipient; direction TB; IR[App B]; IRPPC[PPC]; IRUM[User Management]; end;
```

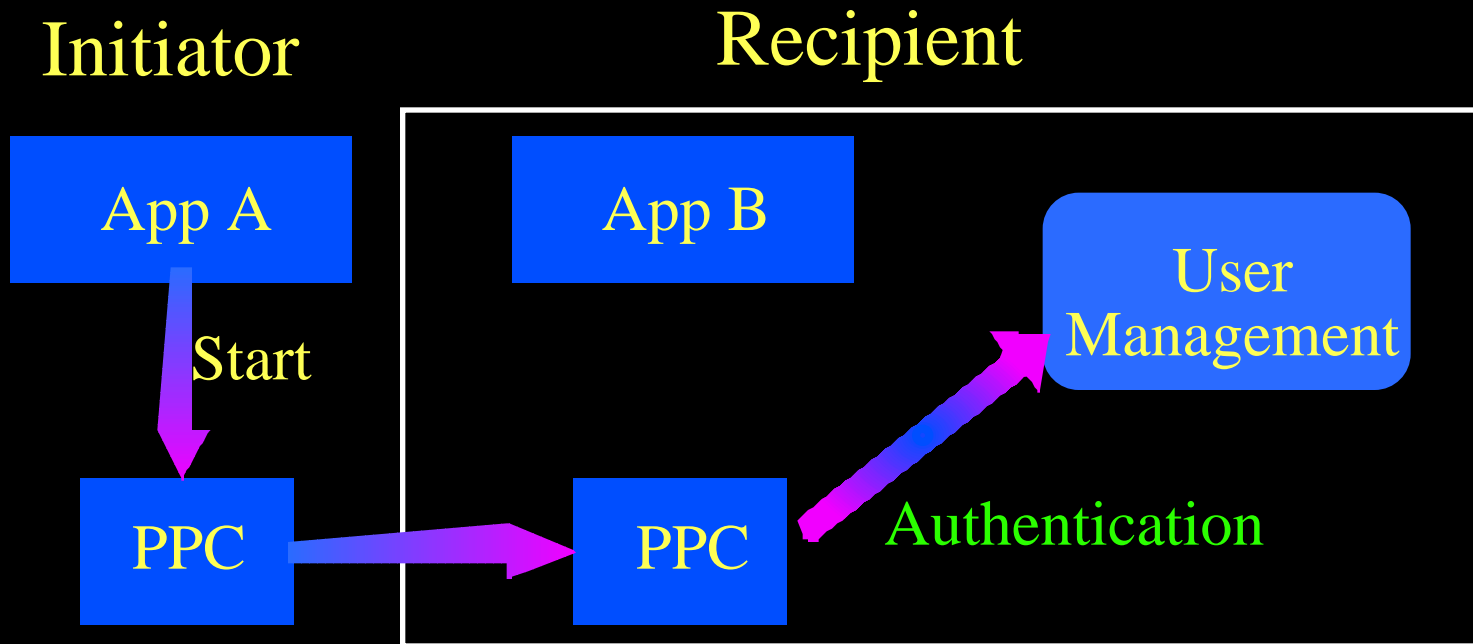

User Manager & Authentication



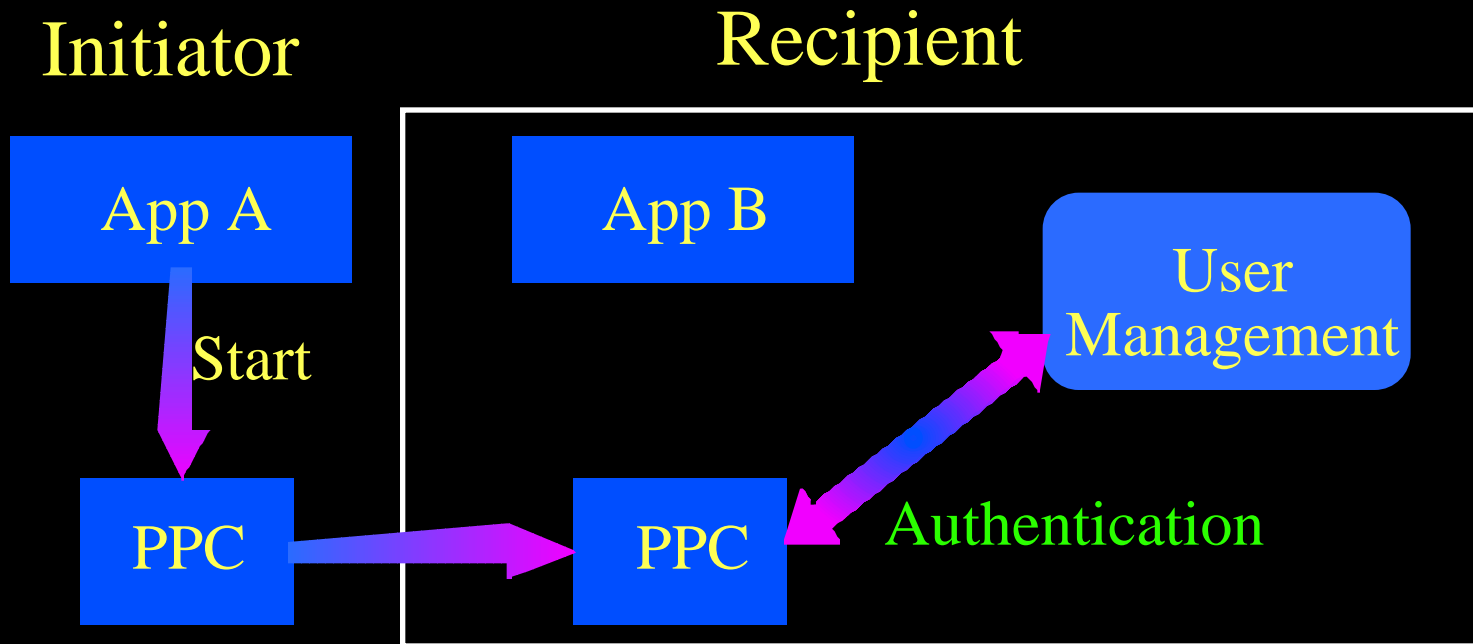
User Manager & Authentication



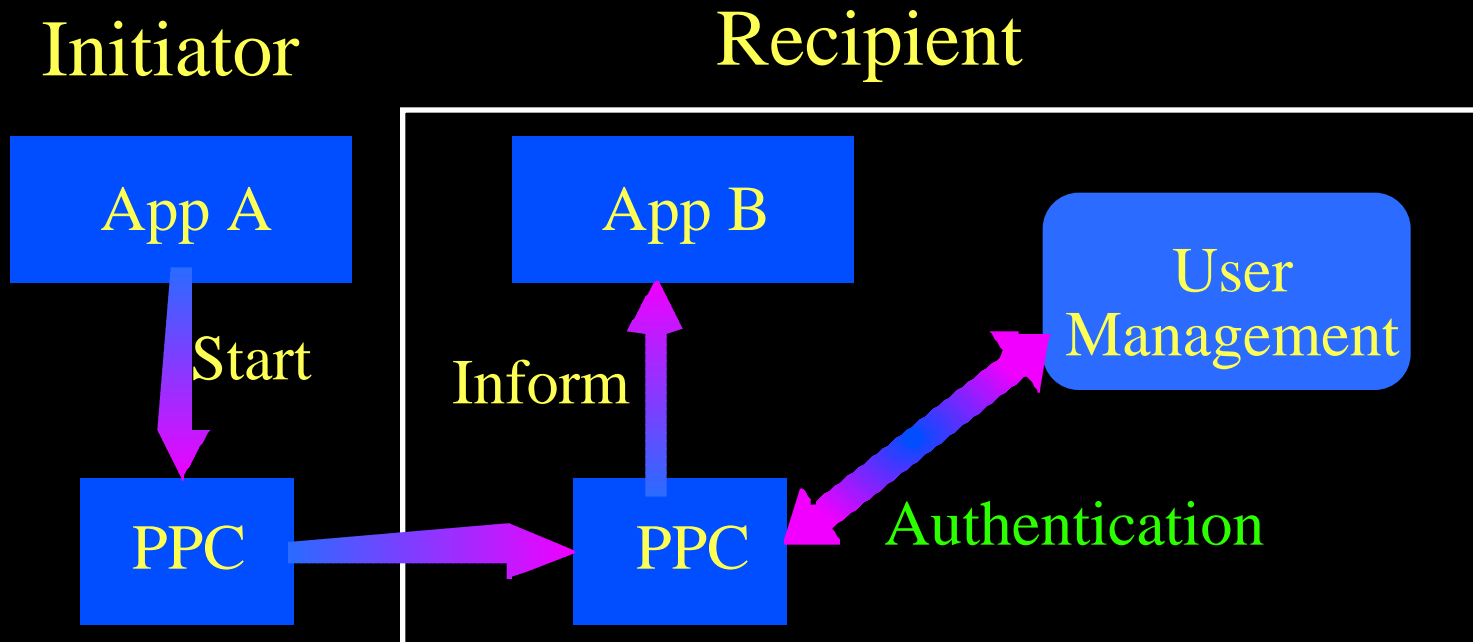
User Manager & Authentication



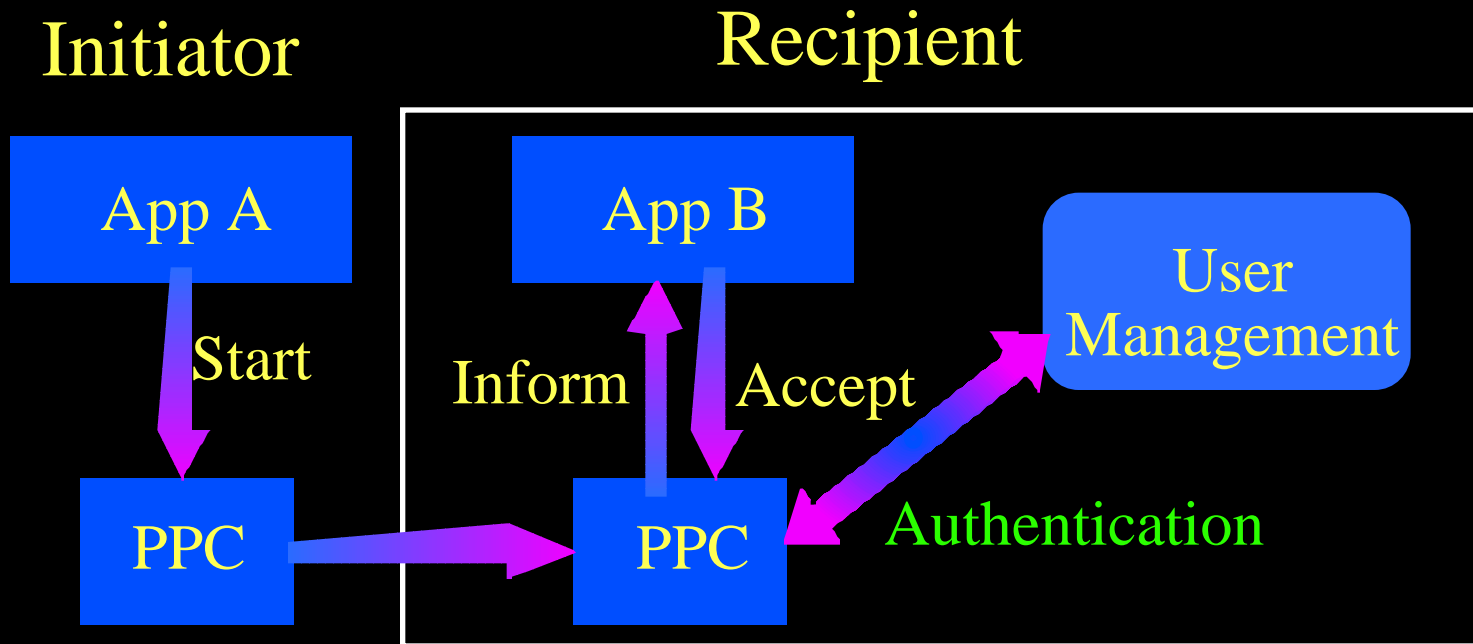
User Manager & Authentication



User Manager & Authentication



User Manager & Authentication



User Management Utilities

- Prompting for User Name/Password
- Getting the **Default** User Identity
- Deleting a User Identity
- **User RefNum**

Standard Prompt-For-User Dialog



A screenshot of a standard prompt-for-user dialog box. The dialog has a title bar with a small icon on the left and a title string "A string provided by the application". Below the title bar, there are two radio buttons: "Guest" (unselected) and "Registered User" (selected). Below the radio buttons, there are two input fields: "Name:" followed by an empty text box, and "Password:" followed by a text box containing seven dots and the text "(Scrambled)". At the bottom of the dialog, there are two buttons: "Cancel" and "OK".

 "A string provided by the application"

Guest

Registered User

Name:

Password: (Scrambled)

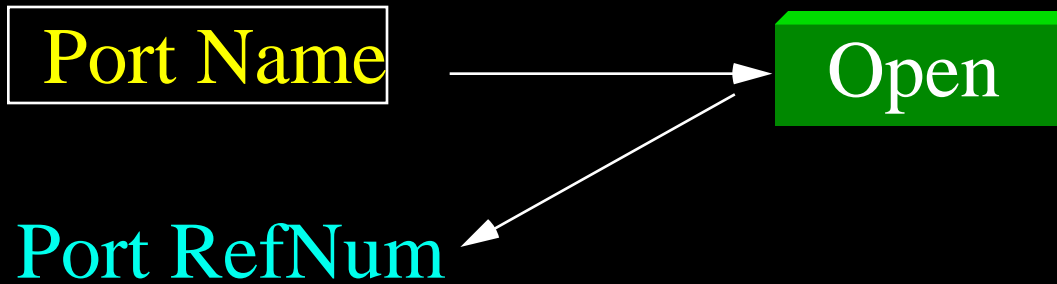
PPC Calling Convention

- Parameter Blocks (PBs)
- Synchronously
- Asynchronously
 - Completion Routines (VM-safe)
 - Application's A5 preserved

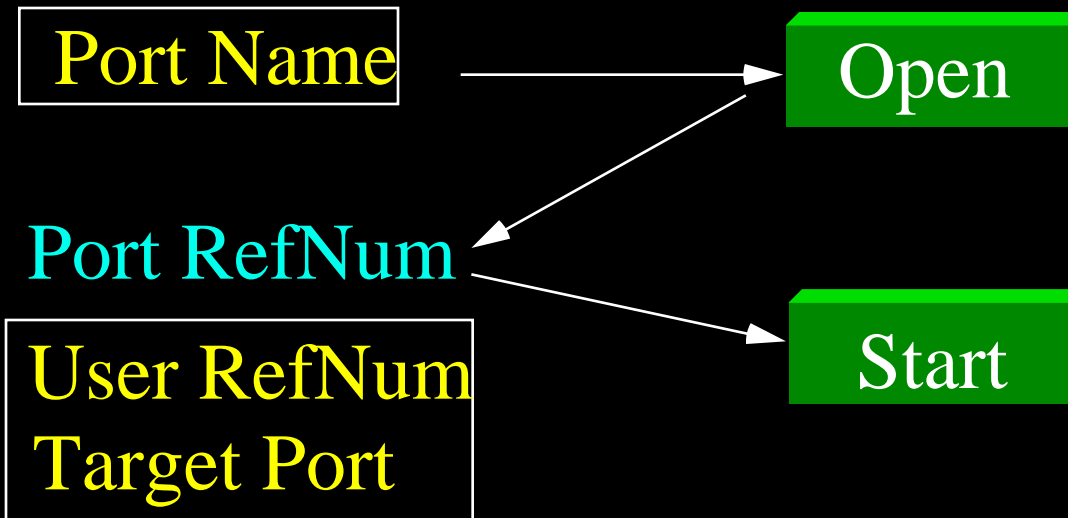
Key Parameters



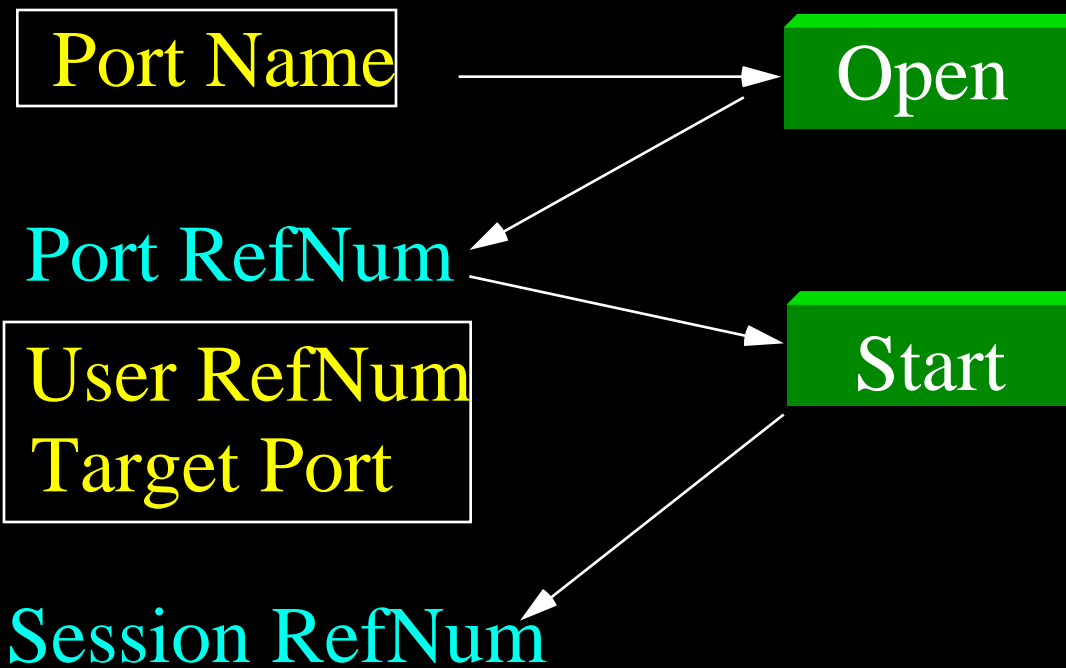
Key Parameters



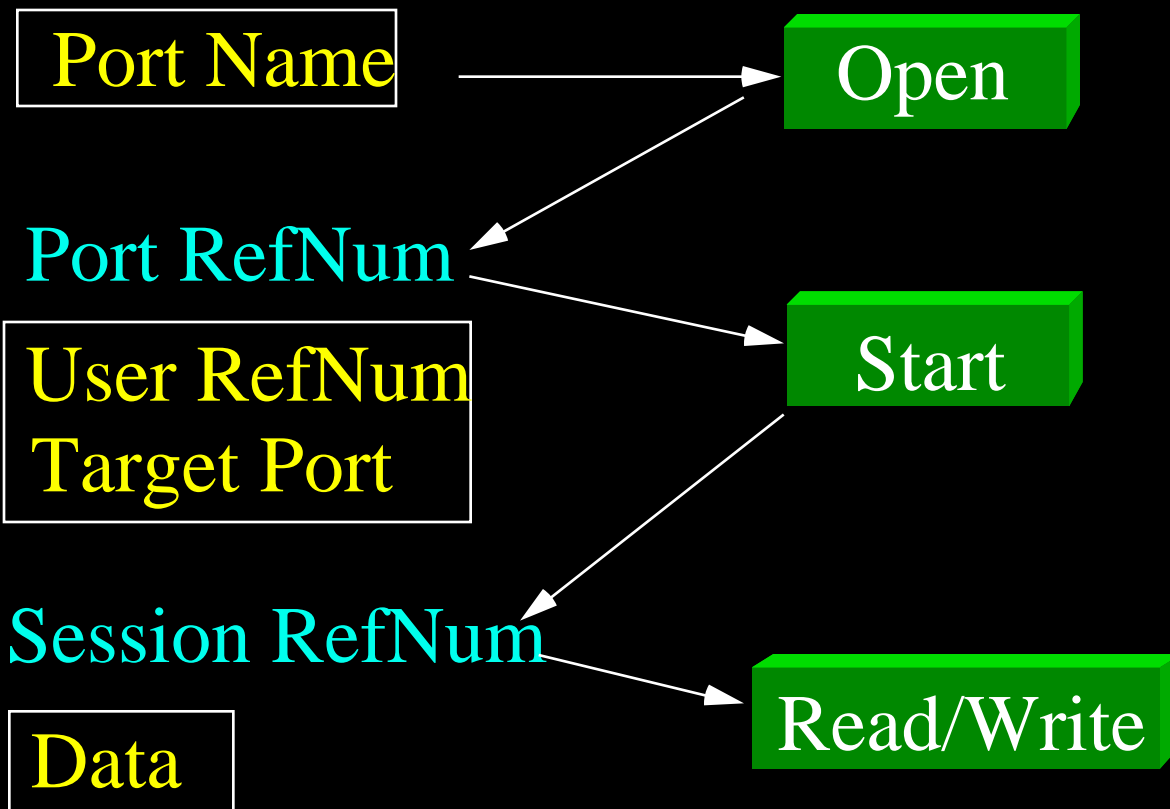
Key Parameters



Key Parameters



Key Parameters



Opening a Port

OSErr PPCOpen (pb, async);

-> Port Name

-> Network Visible {true, false}

Opening a Port

```
OSErr PPCOpen (pb, async);
```

-> Port Name

-> Network Visible {true, false}

<- Port Refnum

Awaiting a Session (Make this call Async)

OSErr PPCInform (pb, async);

-> Port Refnum

-> Automatic Accept {true, false}

Awaiting a Session (Make this call Async)

OSErr PPCInform (pb, async);

- > Port Refnum
- > Automatic Accept {true, false}
- <- Initiating Port Name
- <- Initiating User Name
- <- Session Refnum

Accepting/Rejecting a Session

OSErr PPCAccept (pb, async);

-> Session Refnum

OSErr PPCReject (pb, async);

-> Session Refnum

-> Reason of Reject

Initiating a Session

OSErr PPCStart (pb, async);

- > Port Refnum
- > Target Port
- > User Refnum

Initiating a Session

OSErr PPCStart (pb, async);

- > Port Refnum
- > Target Port
- > User Refnum
- <- Session Refnum
- <- (Reason of Reject)

High-level Start Session Call

- `OSErr StartSecureSession (pb, ...)`;
 - Synchronous
 - Tries to use Default user
 - Prompt for user name/password if need to
 - Handles retries

Writing/Reading Data

OSErr PPCWrite (pb, async);

-> Session Refnum

<-> Data

<-> Block Creator

<-> Block Type

<-> more

Ending a Session

```
OSErr PPCEnd (pb, async);
```

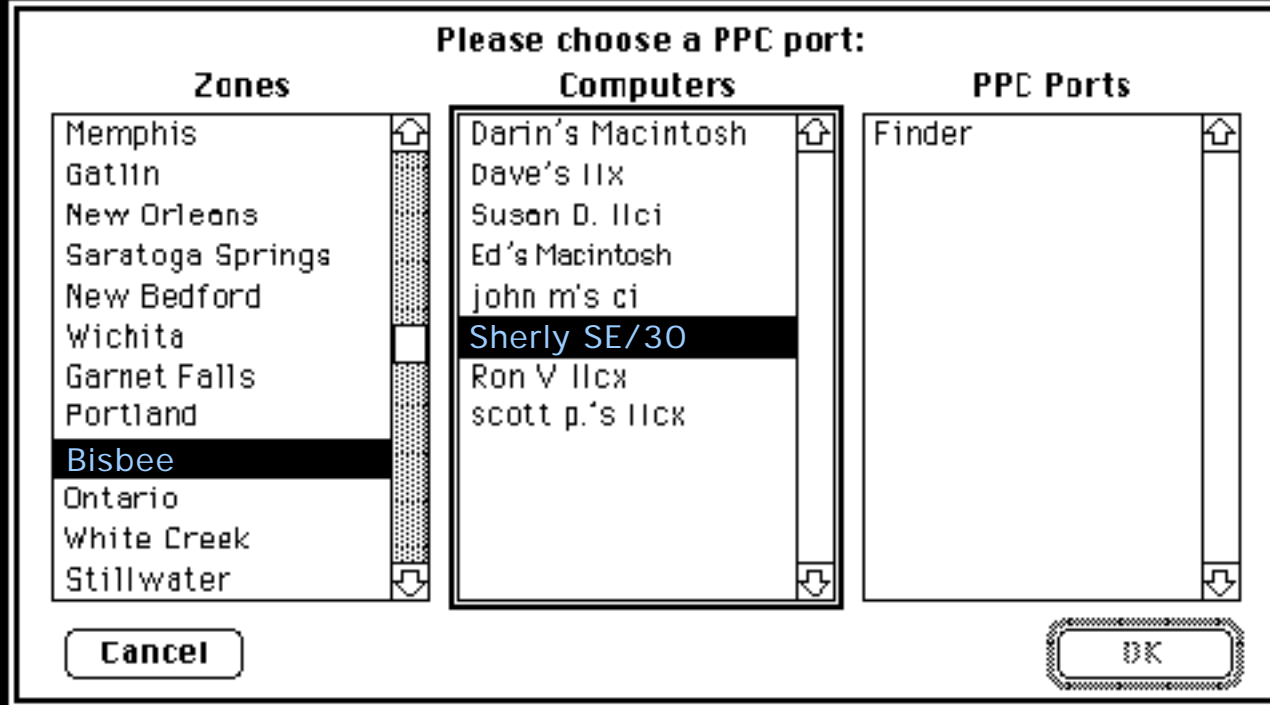
-> Session Refnum

Closing a Port

```
OSErr PPCClose (pb, async);
```

-> Port Refnum

PPC Browser



PPC Browser

- Browse and select ports
- (Standard File Package <--> Files)
- **OSErr PPCBrowser (.. PortInfo*, ..);**
 - Modal Dialog
 - Browse **Zones**, **Computers**, and **Ports**
 - Application **Filter Proc**

Listing Available Ports (Low-level call)

OSErr IPCListPorts (pb, async);

- > Target Station
- > Port Filters
- > Request Count

Listing Available Ports (Low-level call)

OSErr IPCListPorts (pb, async);

- > Target Station
- > Port Filters
- > Request Count
- <- List of Ports
- <- Actual Count

PPC Toolbox: A foundation for...

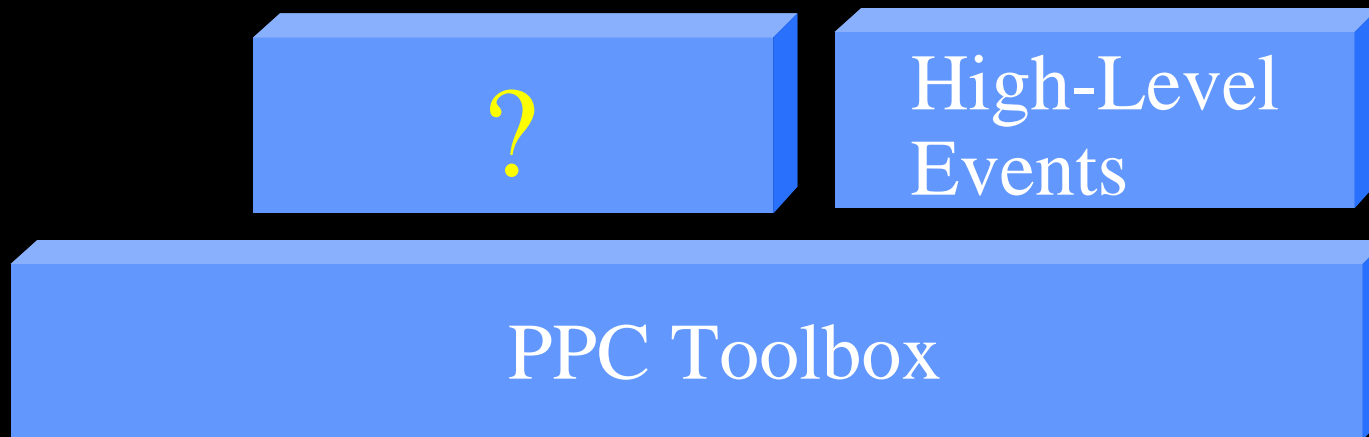
- Application Collaboration
Independent of Location

High-Level
Events

PPC Toolbox

PPC Toolbox: A foundation for...

- Application Collaboration
Independent of Location





The power to be your best