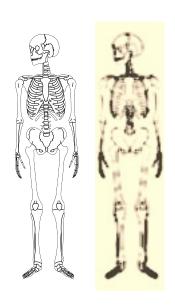




Architecture des Systèmes d'Information

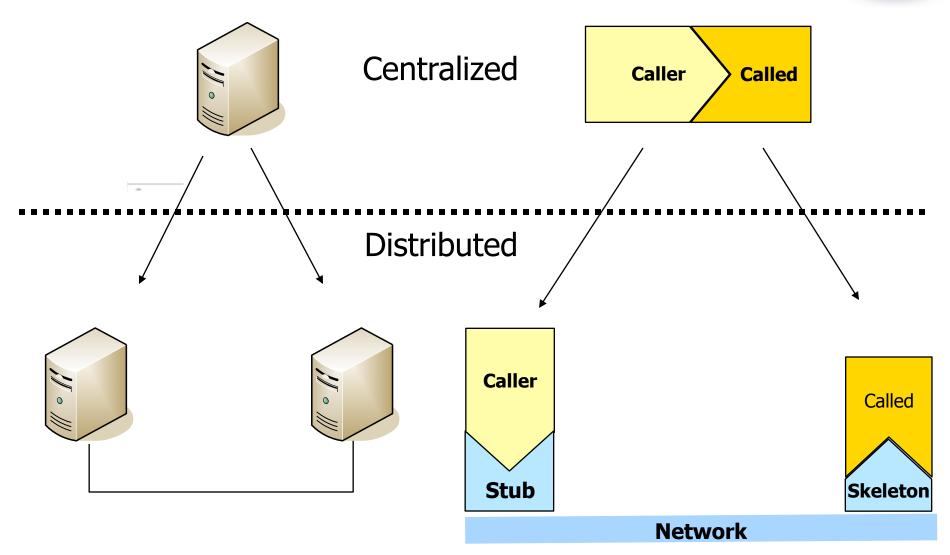


Remote Method Invocation RMI



Distributed Programming

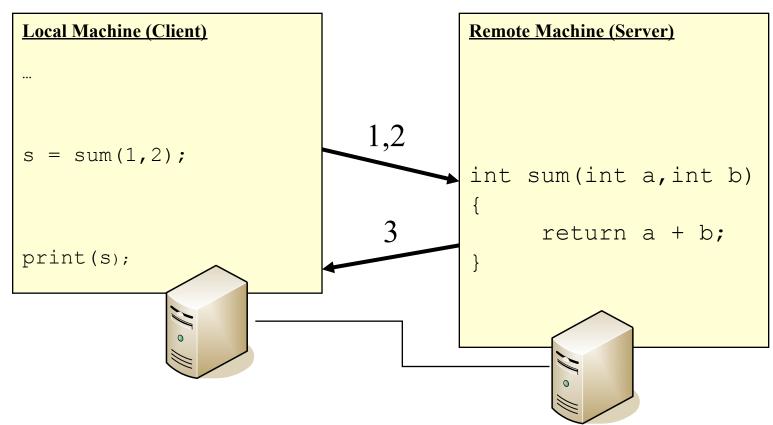


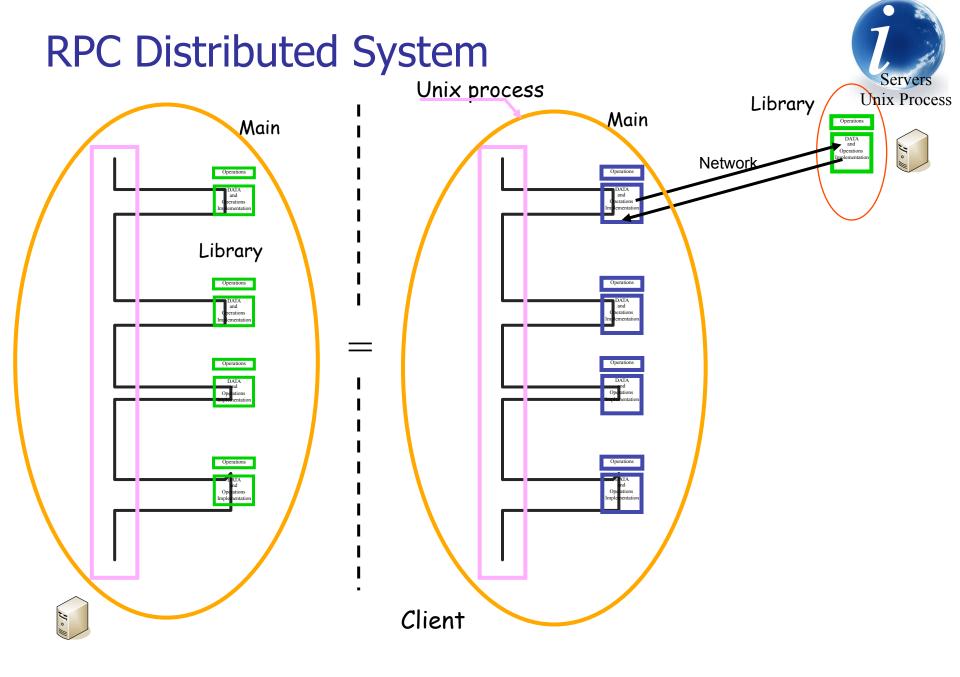


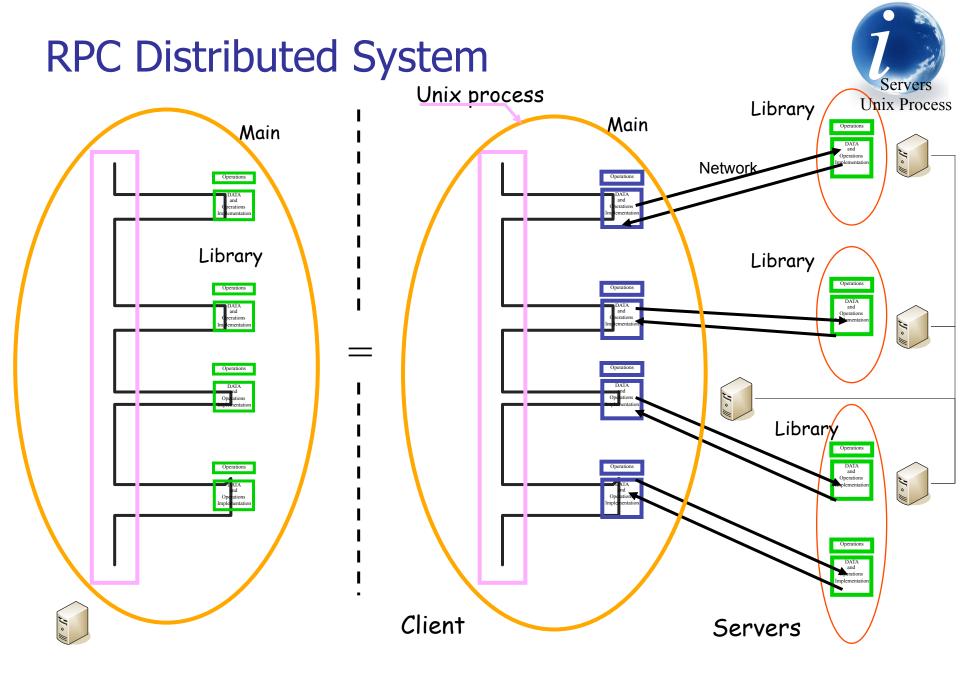
Remote Procedure Call (RPC) paradigm



 RPC allowed programmer to execute remote function using the same semantics as local functions calls.

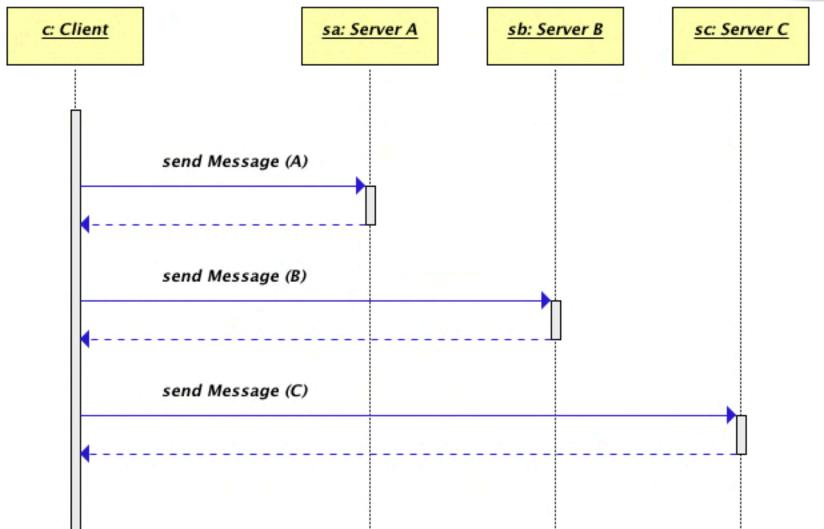






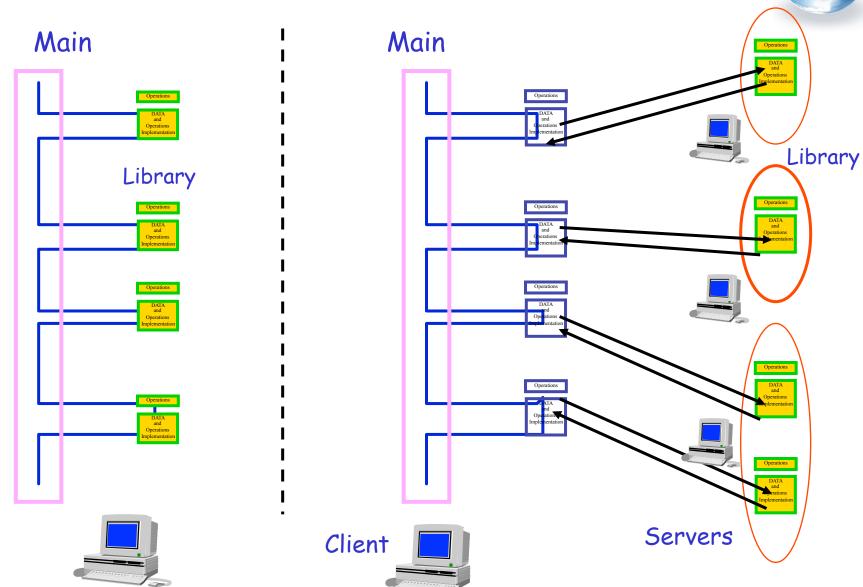
Distributed Processing





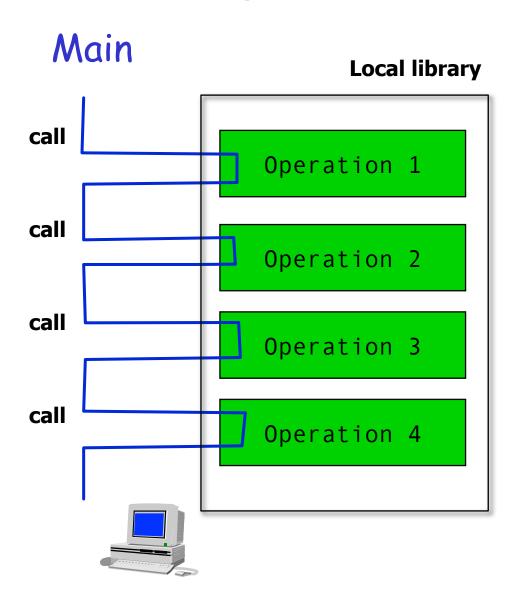
RPC Distributed System





Local Library



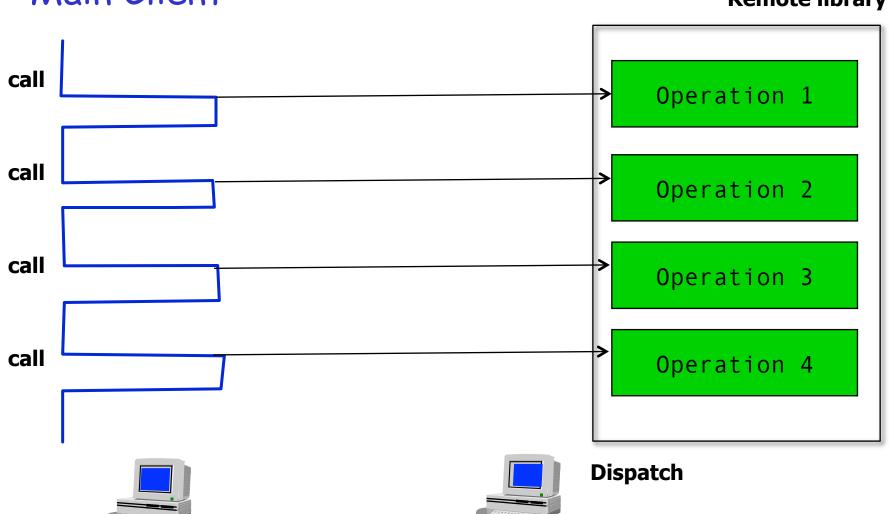


Remote Libray



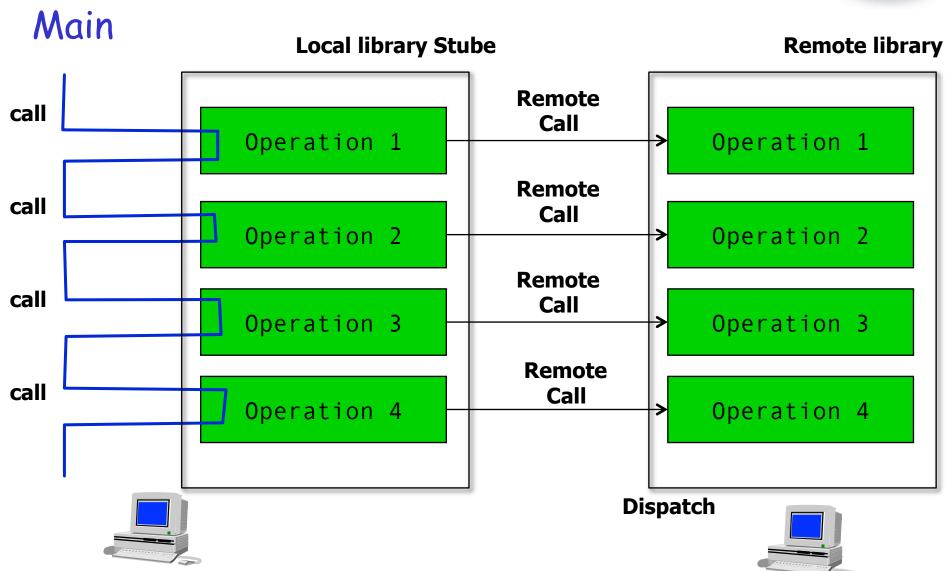
Main Client

Remote library



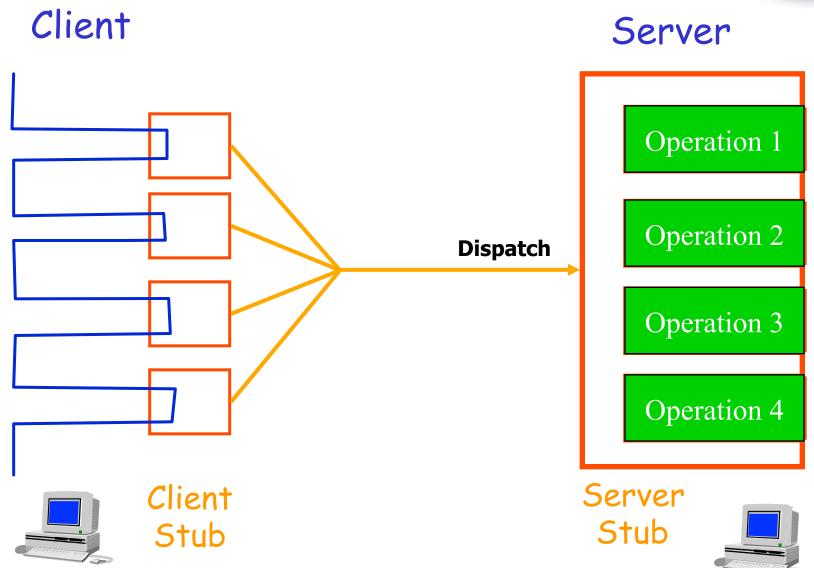
Remote Libray





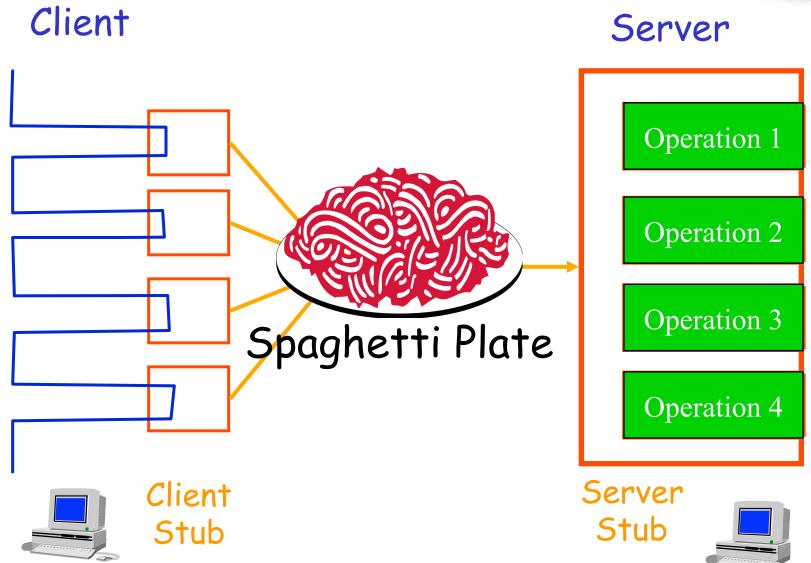
RPC Stub





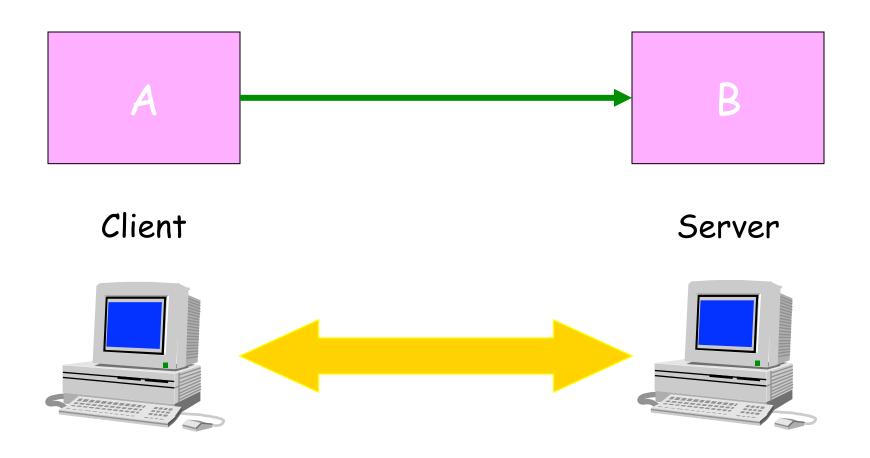
RPC Stub





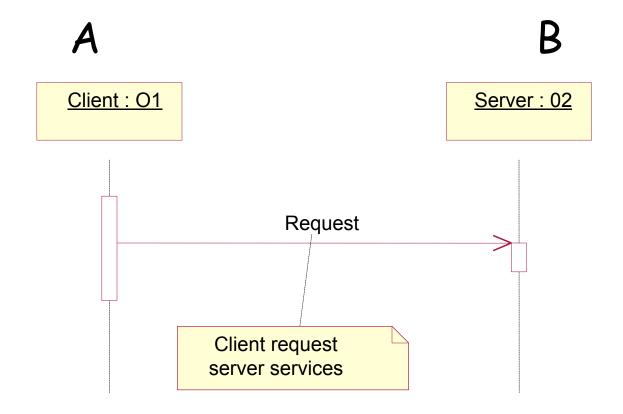
Remote Procedure Call





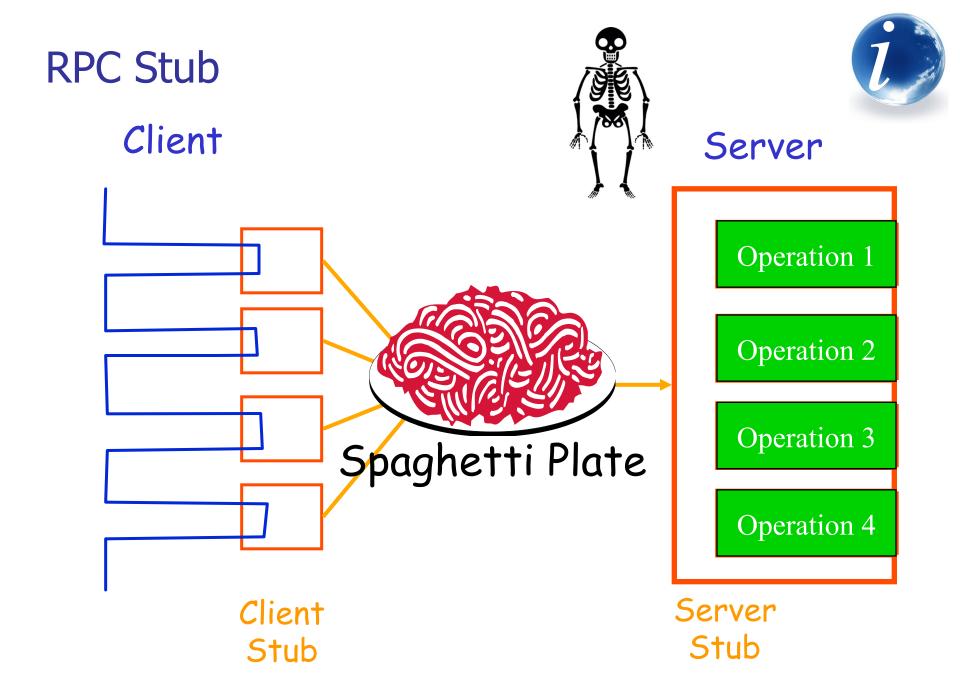
Client/Server: procedural invocation





Client is active (actor) initiating request to server

Server is passive waiting for client request

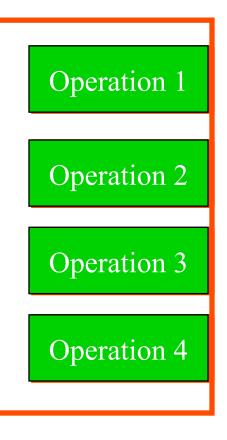


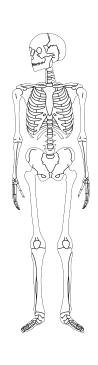
RPC Server Framework: Skeleton





Dispatch





Container

Server Side Calls back



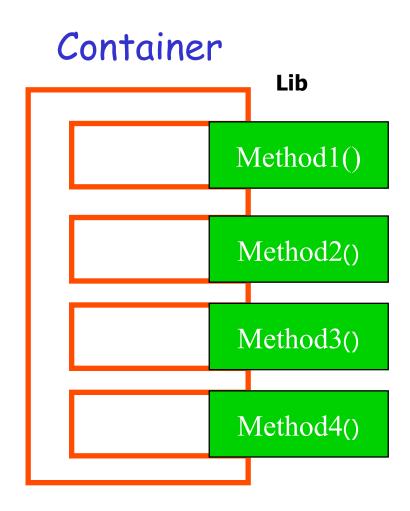




We will call you back

Call back (Hollywood pattern)

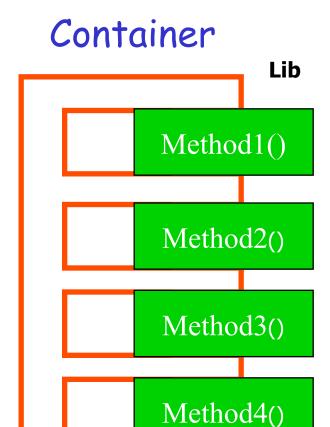






Call back (Hollywood pattern)







Call back (Hollywood pattern)



Container

Lib

Method1()

Method2()

Method3()

Method4()



Java Technologies Layered View





	Java Language					Jav	/a L	.anguage)						
	Tools &	java javac j		javadoc	apt	jar		javap		JPDA		Console	Java VisualVM		
	Tool APIs	Security	Int'l	RMI	IDL	Deploy	Me	onitoring	Tro	ublesl	hoot S	cripting	JVM TI		
	Deployment Technologies	De	ploym	ent	Java Web St					J	Java Plug-in				
JDK	User Interface			Swin				ig			Java 2D				
	Toolkits	Accessibility Drag n l			rop Input Me			nods Image I/O		· I/O	Print Service		Sound		
	Integration Libraries	IDL .		BC™	JN	NDI™		RMI RMI-II		MI-IIO	OP Sc		cripting		
	JRE Other Base	Beans Intl Supp		ort I/O			JMX			JNI		Math	Jav SE		
	Libraries	Networking		Override Mechanism		Securit	urity Serializ		ition	tion Exter Mecha			XML JAXP	AP	
	lang and util Base	lang and util		Collections		Concurrency Utilities		JAR		ı	ogging	Ma	nagement		
	Libraries	Preferences API		Ref Objects		Reflection		Regula Expressi		Ve	ersioning Zi		Instrument		
	Java Virtual Machine		lotspot [™] C	lient V	М	Java Hotspot™ Server VM									
	Platforms	S	Solaris™			Linux			Windows				Other		

Java Technologies Layered View

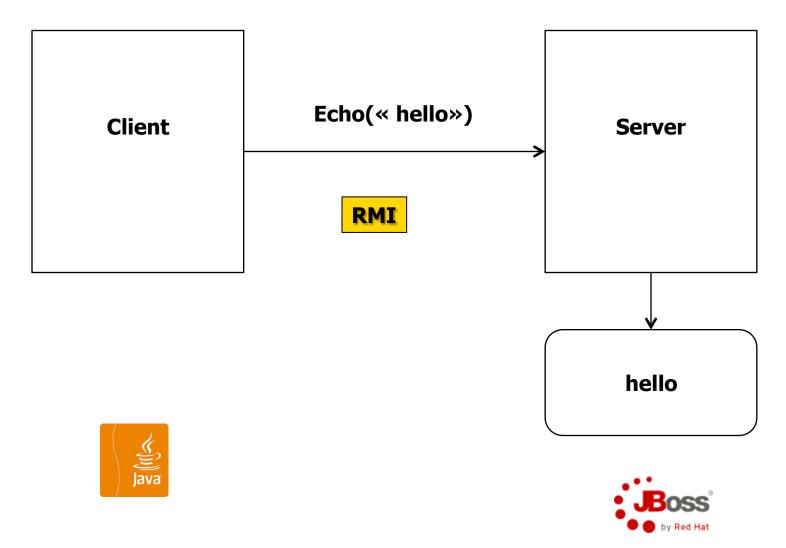




	Ja	ava Language		Java Language													
To Too		Tools &	java	javac javadoc apt		jar		javap		JPDA		JConsole		Java VisualVM			
		Tool APIs	Security	Int'l	RMI	IDL	Deploy	Mo	onitoring	Trou	Troubleshoot S		cripting	9	JVM TI		
		Deployment Technologies	De	Deployment			Java Web Start					Java Plug-i					
	User Interface Toolkits	AWT				Swing							Java 2D				
JDK			Accessibility Drag n D		Drop	Input N	leth	hods Image I/O		I/O	Print Service		е	Sound			
		Integration Libraries	IDL ,		JDBC™ JN		NDI™ I		RMI	RMI-IIC		OP		Scripting			
	lan	Other Base	Beans		Intl Support		I/O		JMX		JNI		VI I		Math	,	
		Libraries	Networking		Override Mechanism		Security		Serialization		Extension Mechanis		· · · · · · · · · · · · · · · · · · ·		ML JAXP		
		lang and util Base Libraries	lang and util		Collections		Concurrency Utilities		JAR		Loggii		ging Mar		nagement		
			Preferences API		Ref Objects		Reflection		Regular Expression				ing Zip I		strument		
		Java Virtual Machine		Java H	lotspot™ C	lient VM			Java Hotspot™ S				erver VM				
		Platforms	S	Solaris™			Linux			Windows				Other			

Client Server

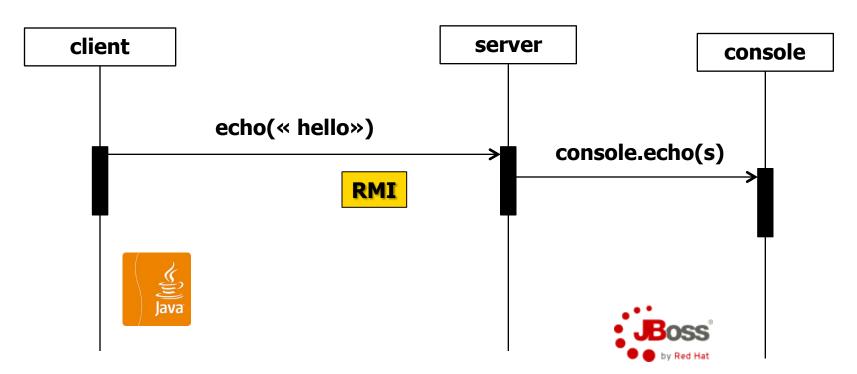




Client Server



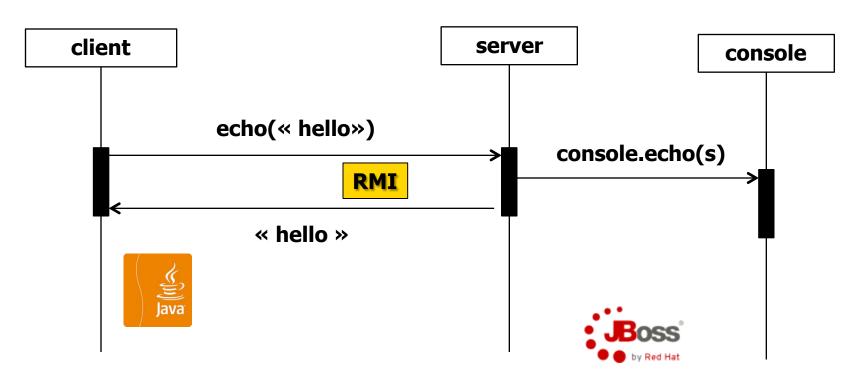


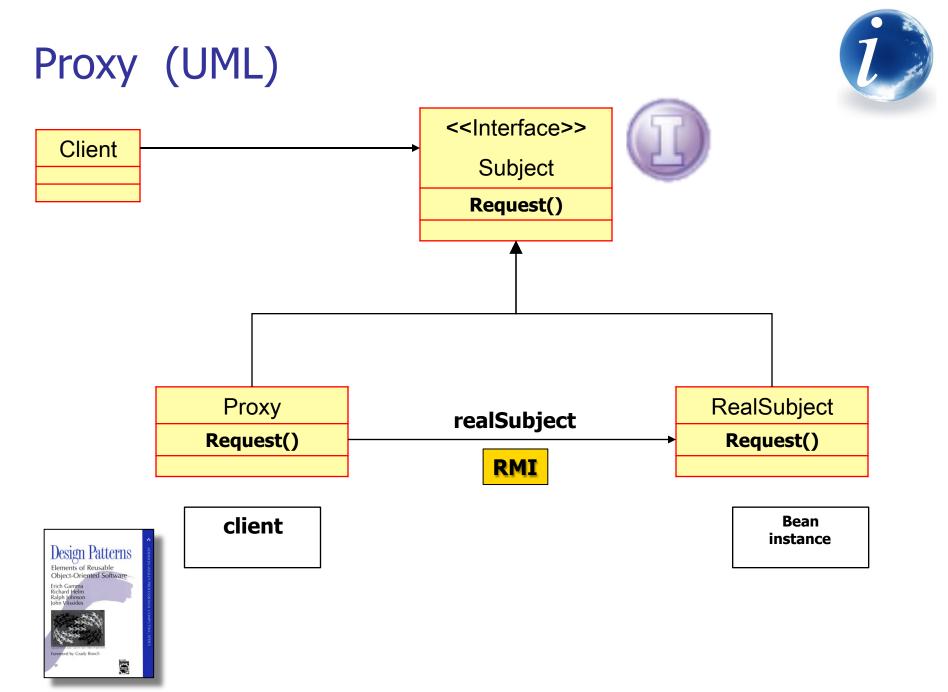


Client Server





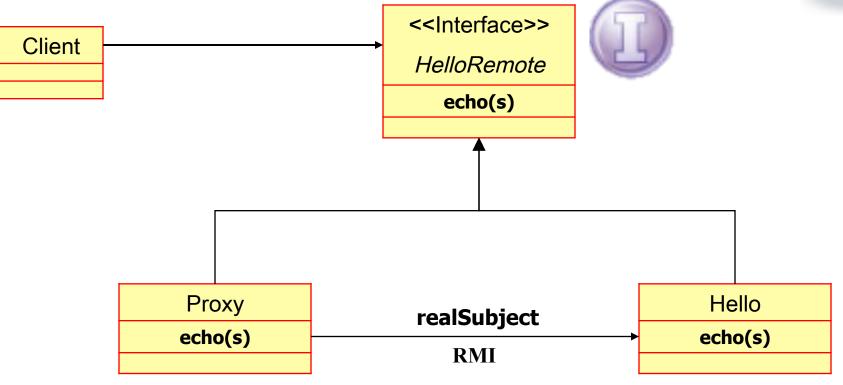




Hello (UML)







Client side Stub

Client JVM



Server side Skeleton

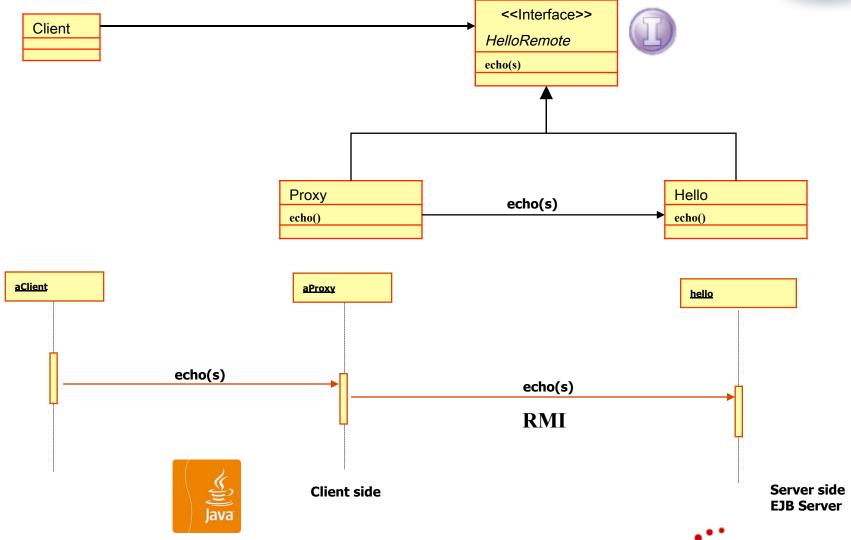
EJB server



Hello (UML)



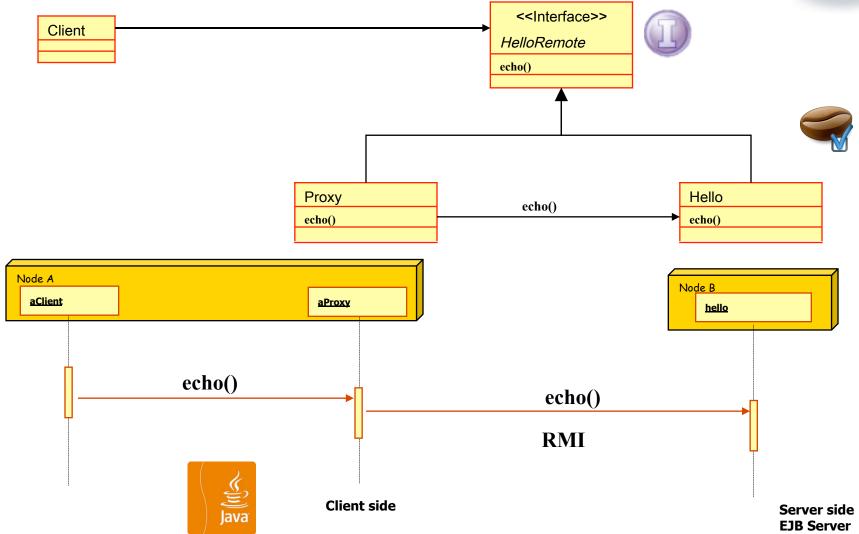




Hello (UML)

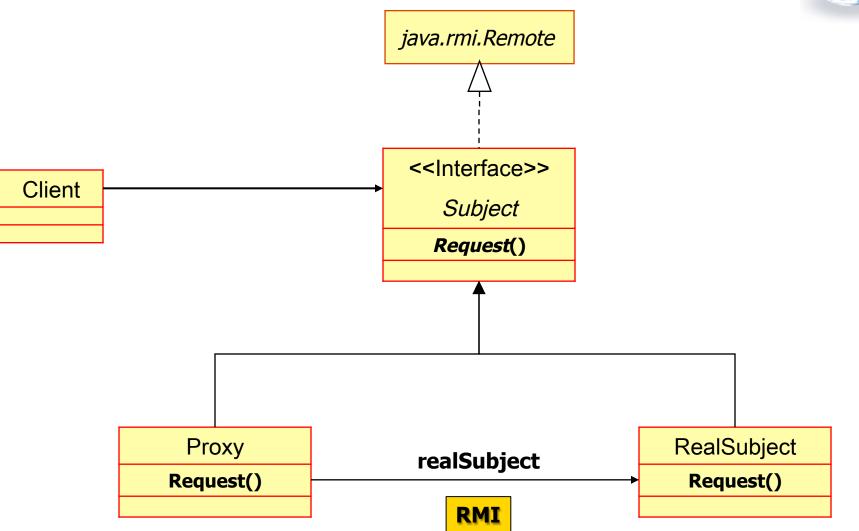


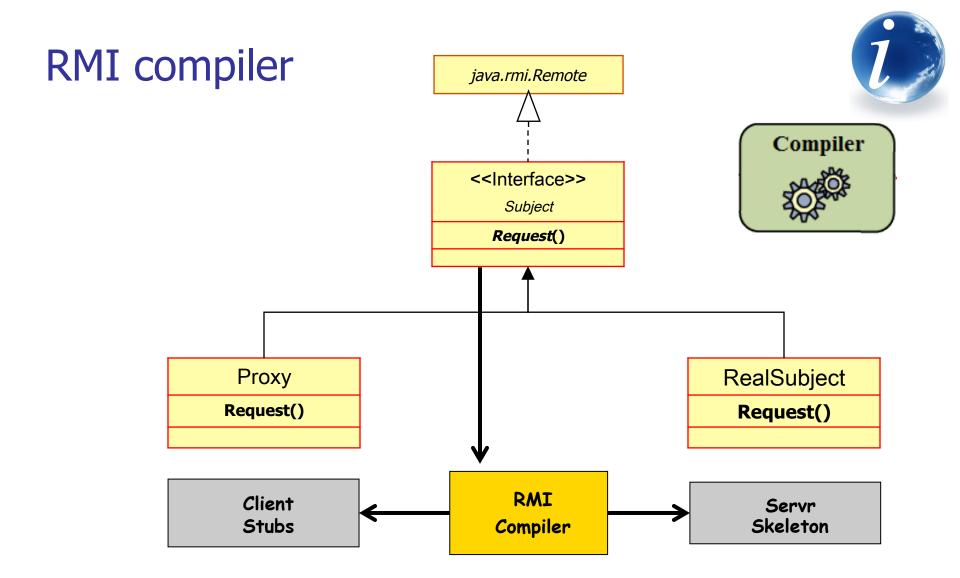




RMI



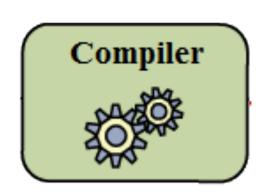




RMI Compiler



- JDK1.4 or prior to 1.4
 - Manually generated stub and skeleton using RMIC.
- JDK 1.5 or later has internally implemented RMI compiler.



RMI Registry



- Registry Service:
 - A Registry Service is an application that provides the facility of registration & lookup of Remote stub.
- A Registry Service provides location transparency of Remote Object to RMI Client

