

Apache
CON

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AMQP & APACHE QPID



Leading the Wave
of Open Source

Message-oriented Middleware

- Common patterns
 - Message queuing
 - Publish/subscribe
 - Content-based routing
- Advantages
 - Loose coupling
 - Temporal decoupling
 - Load balancing
- Common usages
 - Application asynchrony
 - Integration
 - Event distribution
 - Event-driven architecture
 - Queued file transfer

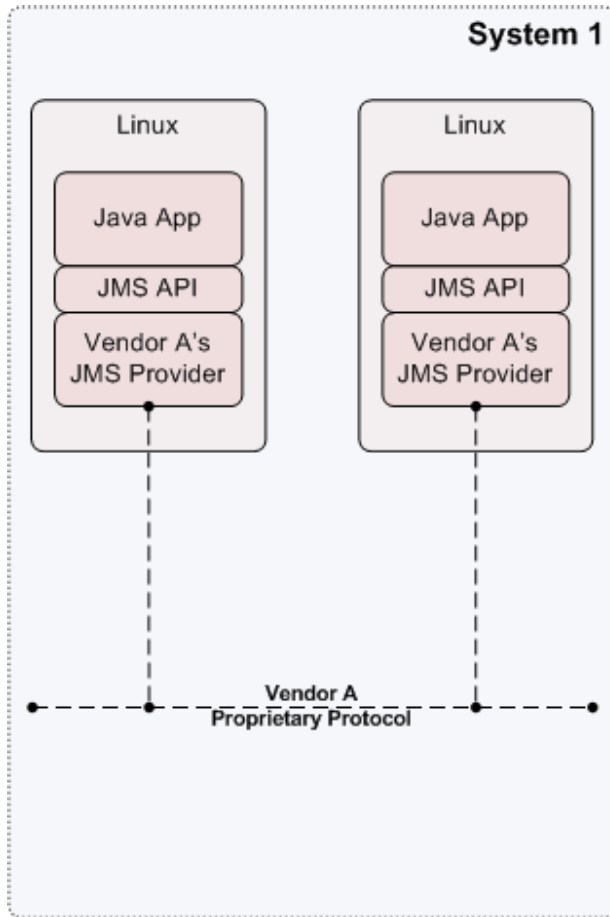


MOM Interoperability

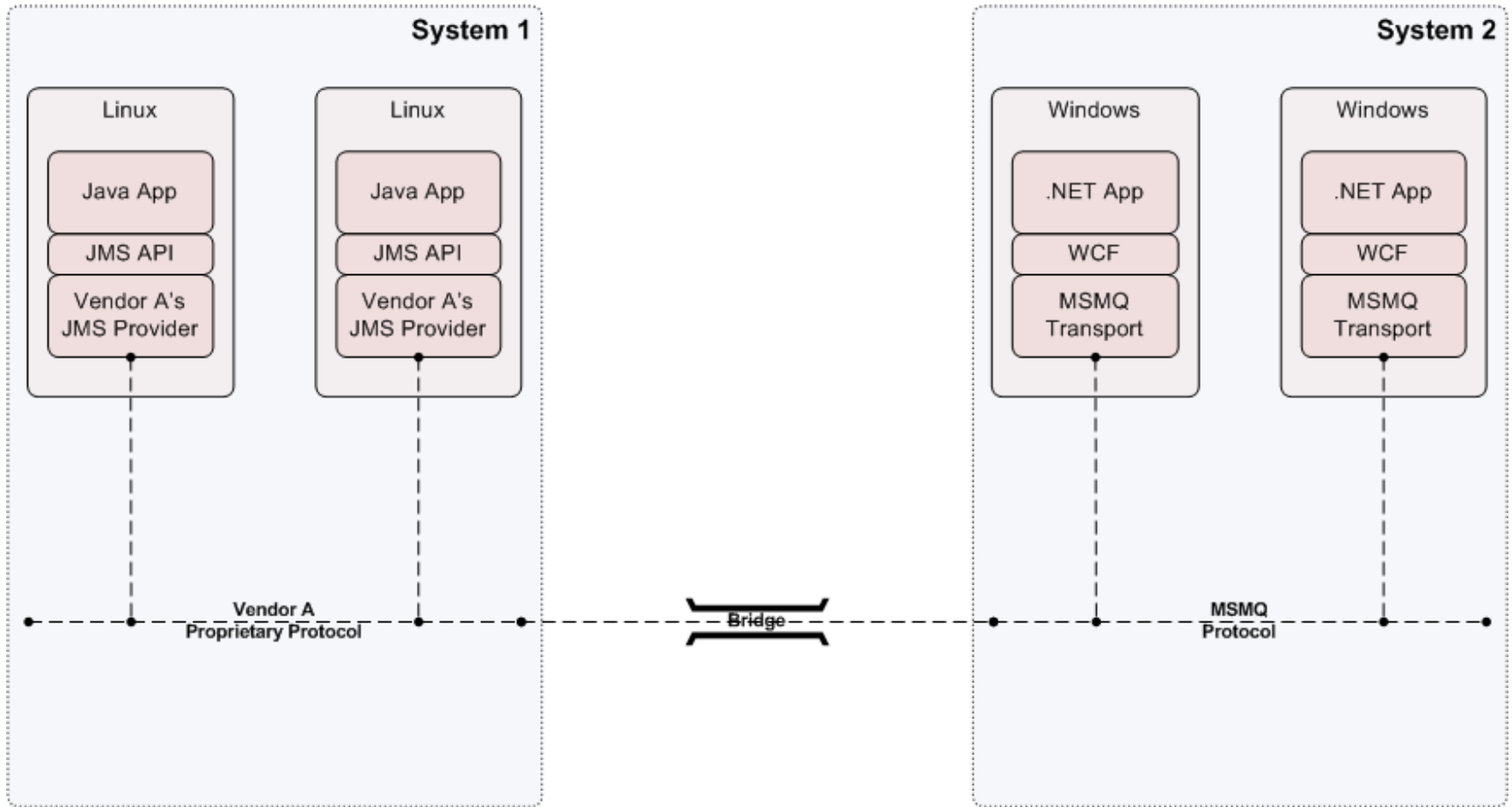
- Enterprises typically have a mix of technology platforms...
 - ...but messaging systems are often targeted to a single platform, e.g., JMS, MSMQ
- Enterprises typically have a range of messaging needs...
 - ...but messaging systems often target specific patterns, e.g., queuing or publish/subscribe



MOM Islands



Bridging the Gap

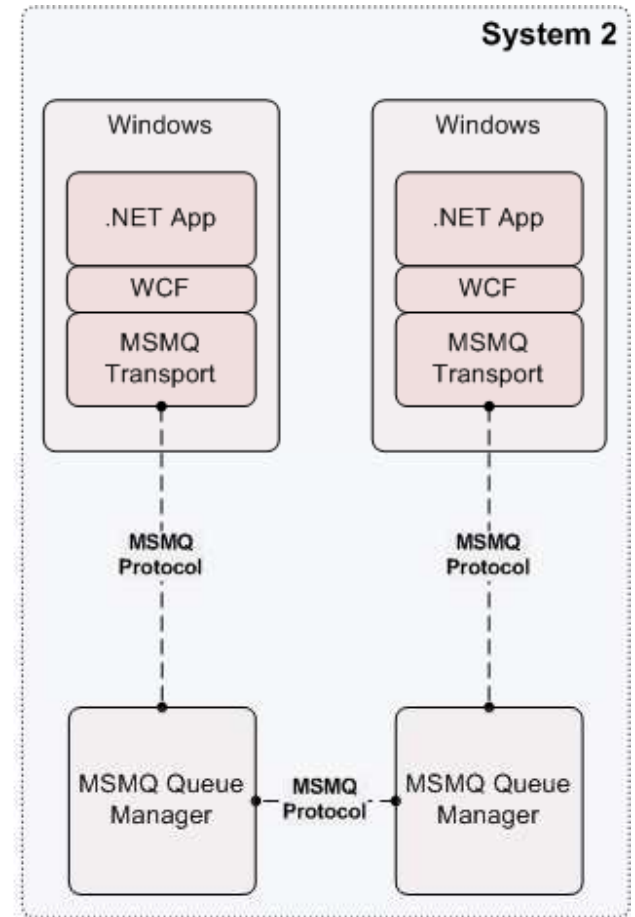
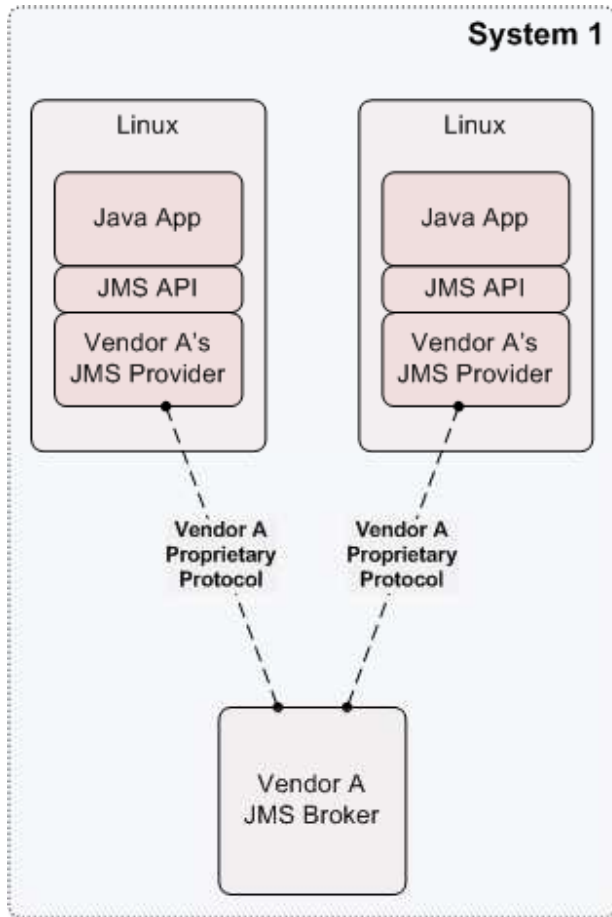


Technical Challenges

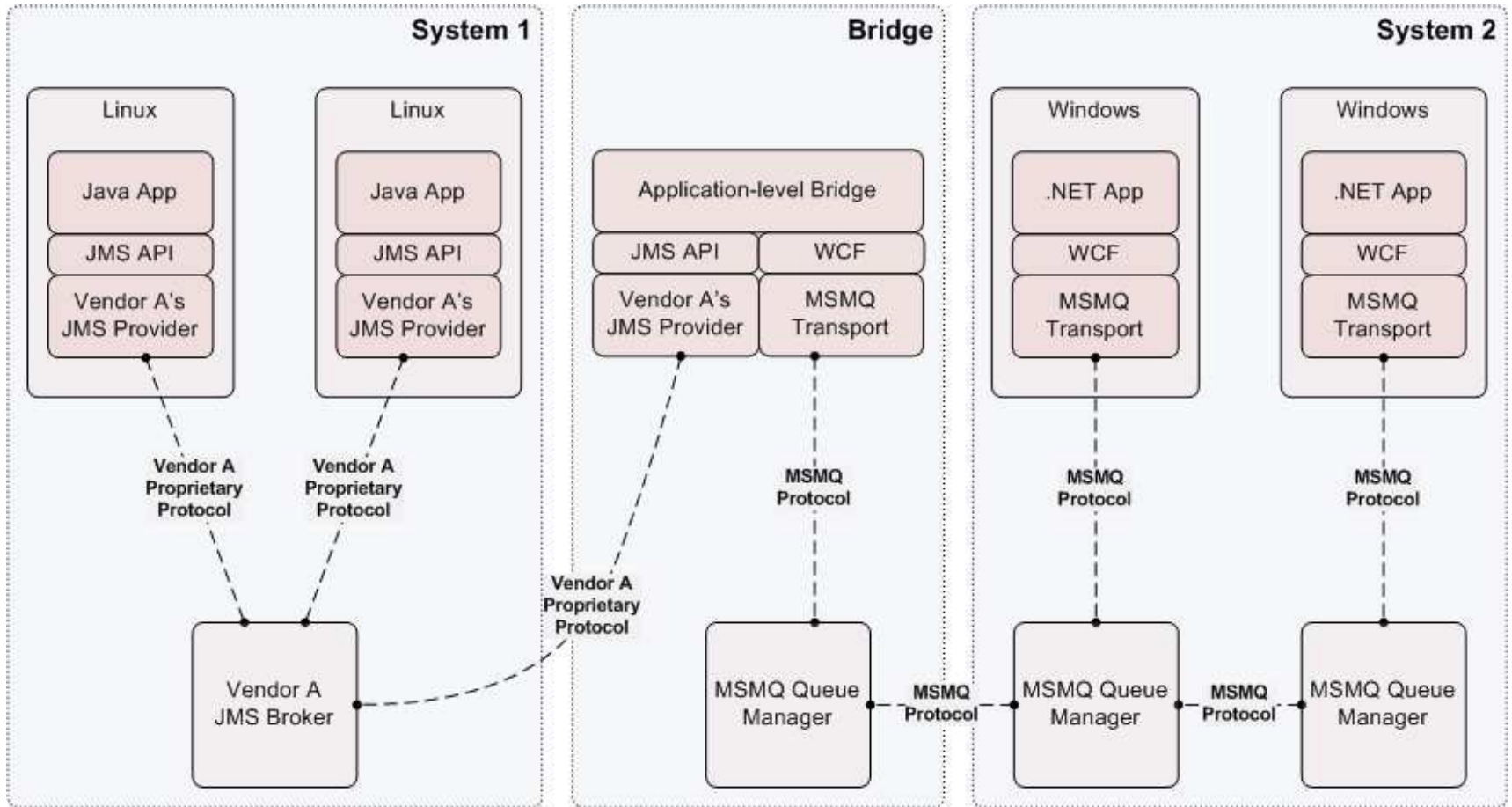
- Connecting the wires
 - Proprietary wire-level formats necessitate application-level bridging
- Mapping the payloads
 - Integrating existing messaging systems typically requires manipulation of the message payload
- Programming abstraction matching
 - Messaging system programming abstractions leak into message payloads and require mapping



Under the Covers



Application-level Bridging

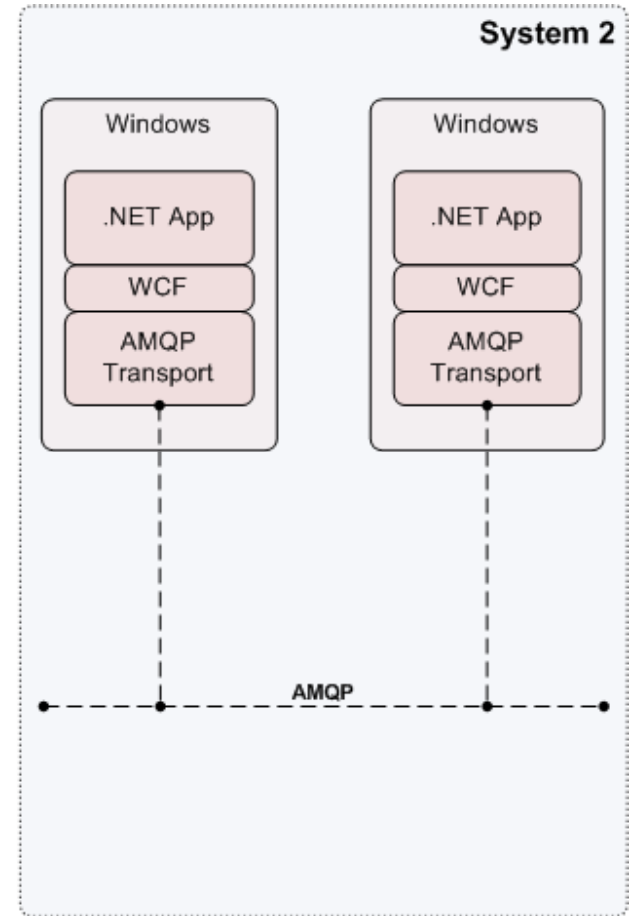
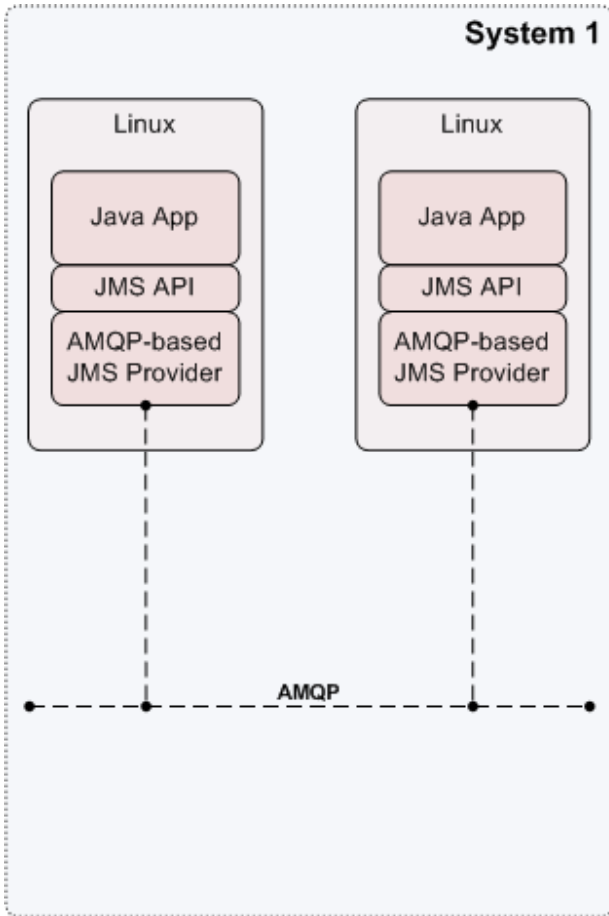


Advanced Message Queuing Protocol

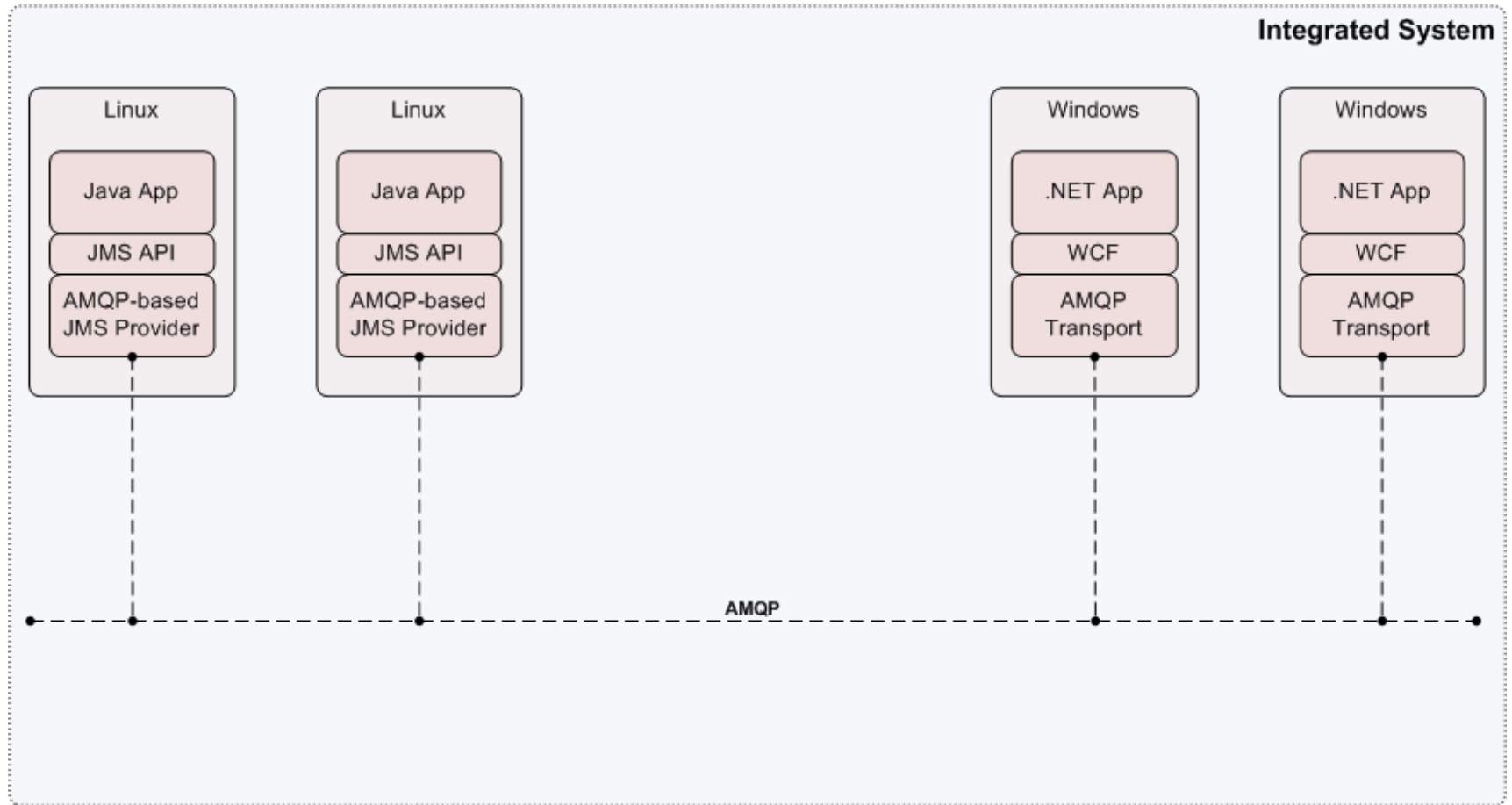
- AMQP Working Group set up by JPMorgan in 2006
 - Goal to make Message Oriented Middleware pervasive
 - Make it practical, useful, interoperable
 - Bring together users and vendors to solve the problem
- A standardized binary wire-level protocol for MOM
 - Symmetric – client-to-broker & broker-to-broker
- Scope
 - Queuing with strong delivery assurances
 - Event distribution with flexible routing
 - Large message capability (gigabytes)
 - Global addressing scheme (email-like)
 - Meet common requirements of mission-critical systems
- Allows heterogeneous clients to connect at full fidelity without bridging



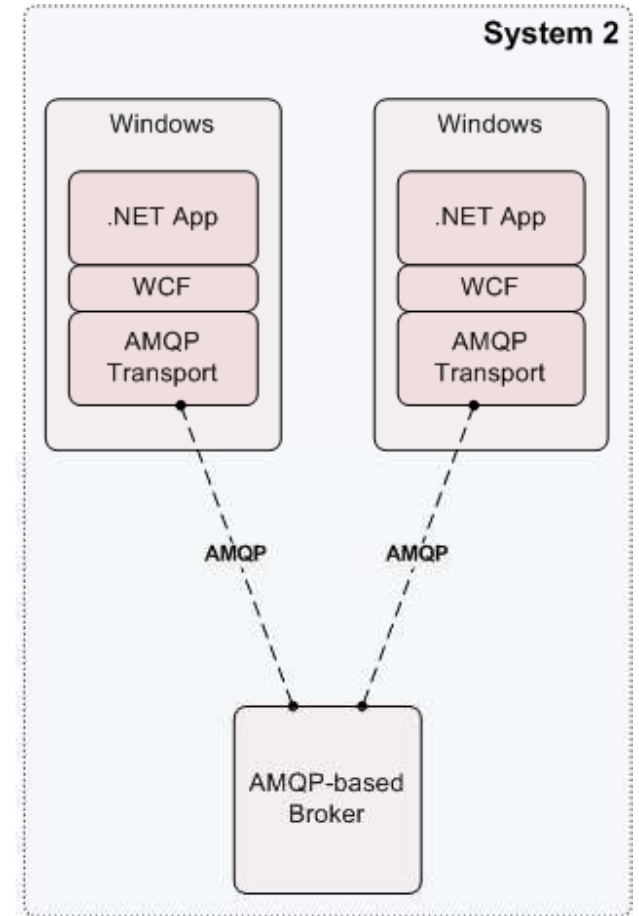
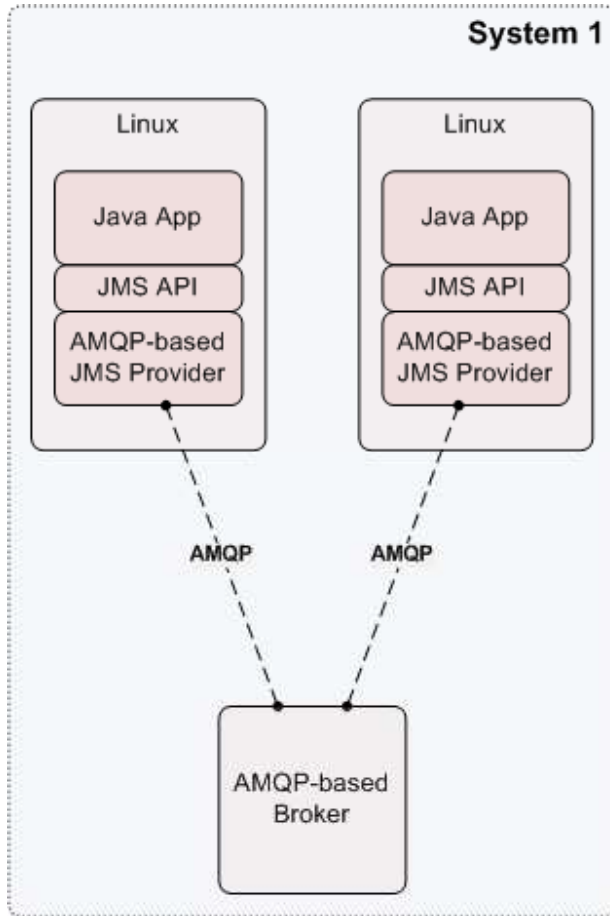
Standardizing the Wire



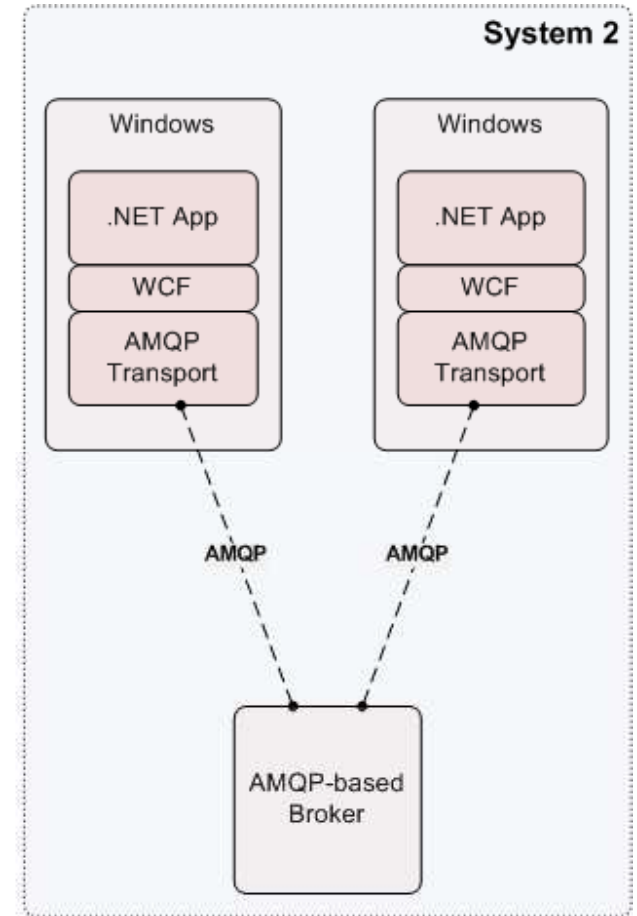
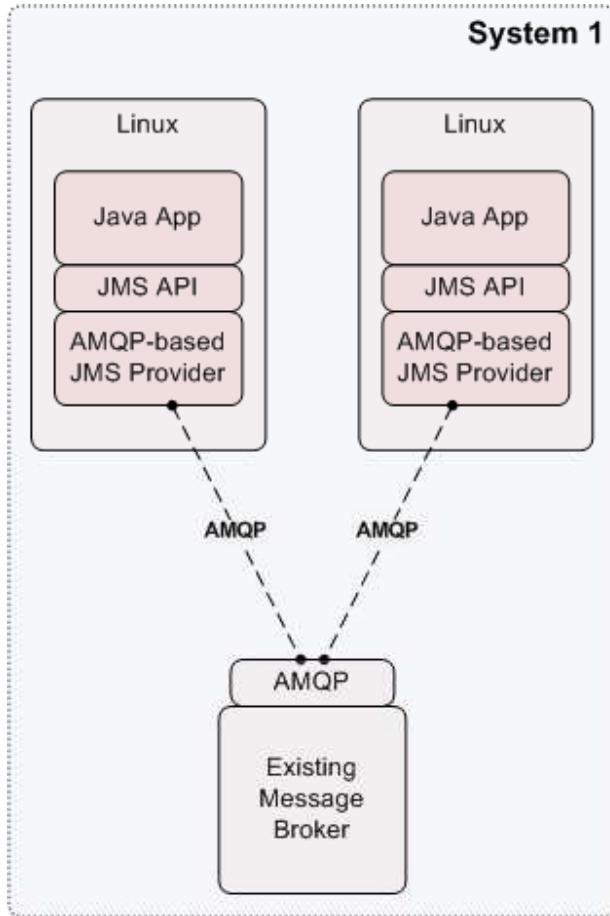
Seamless Connectivity



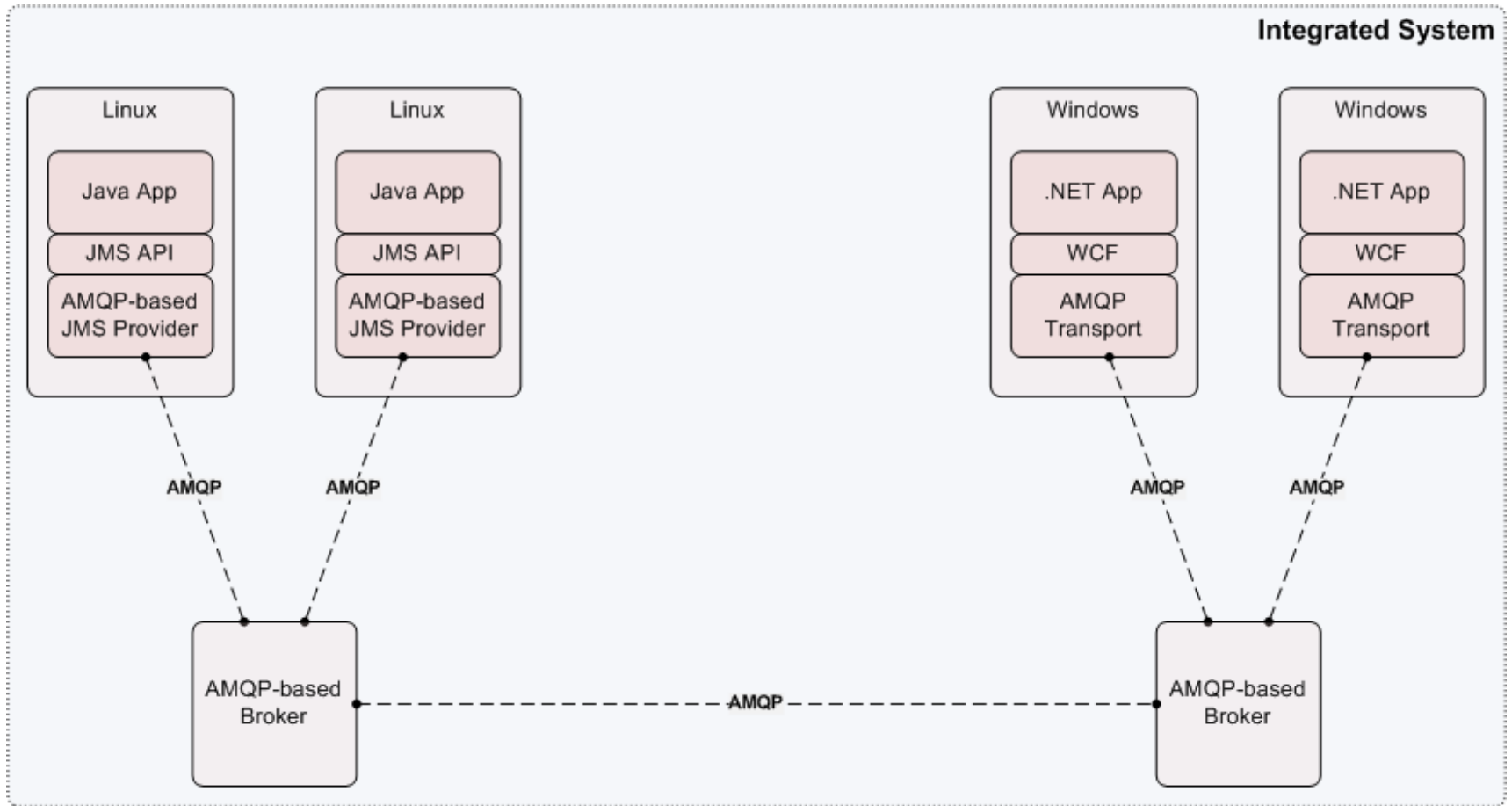
Under The Covers



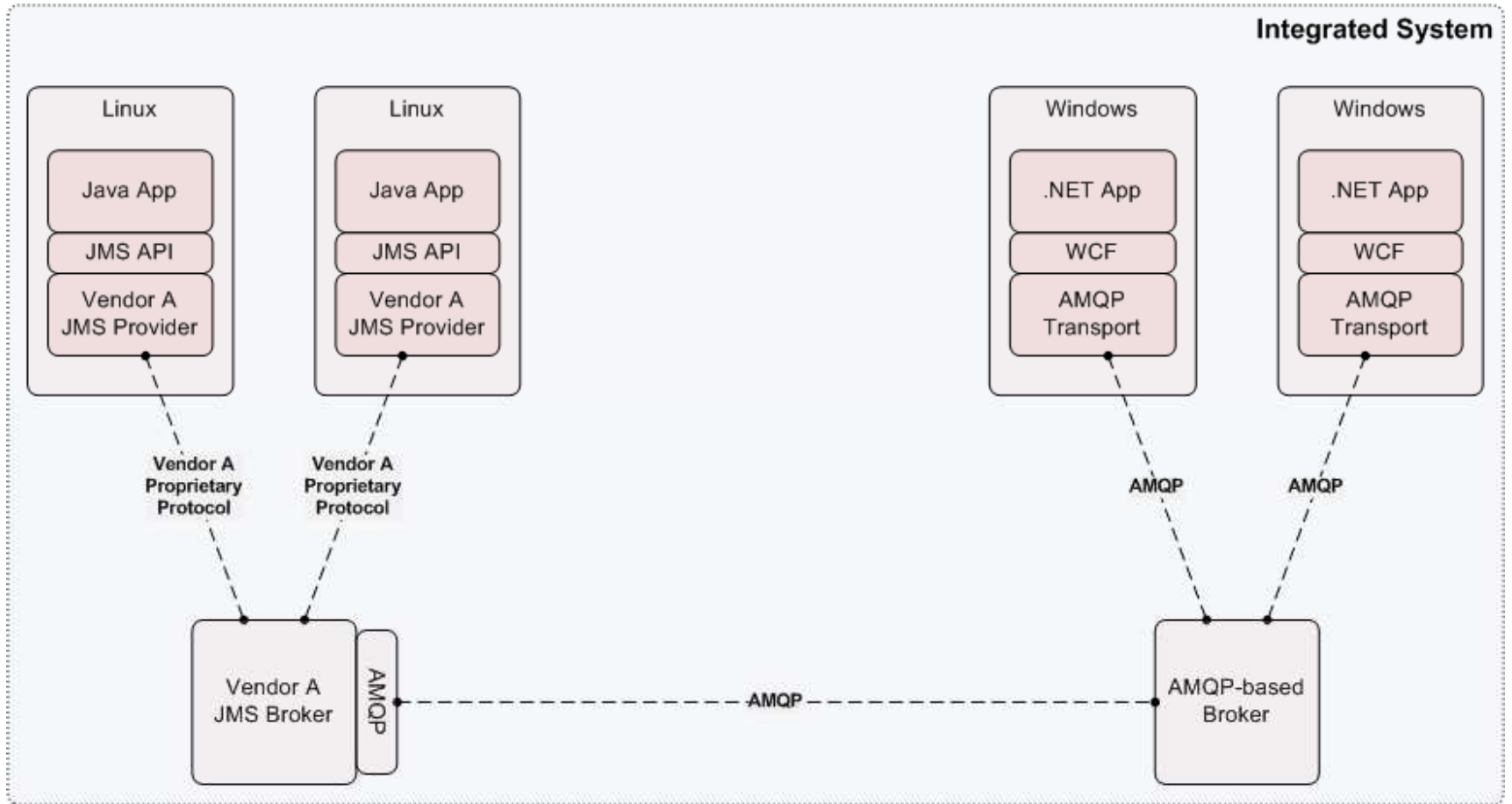
Under The Covers



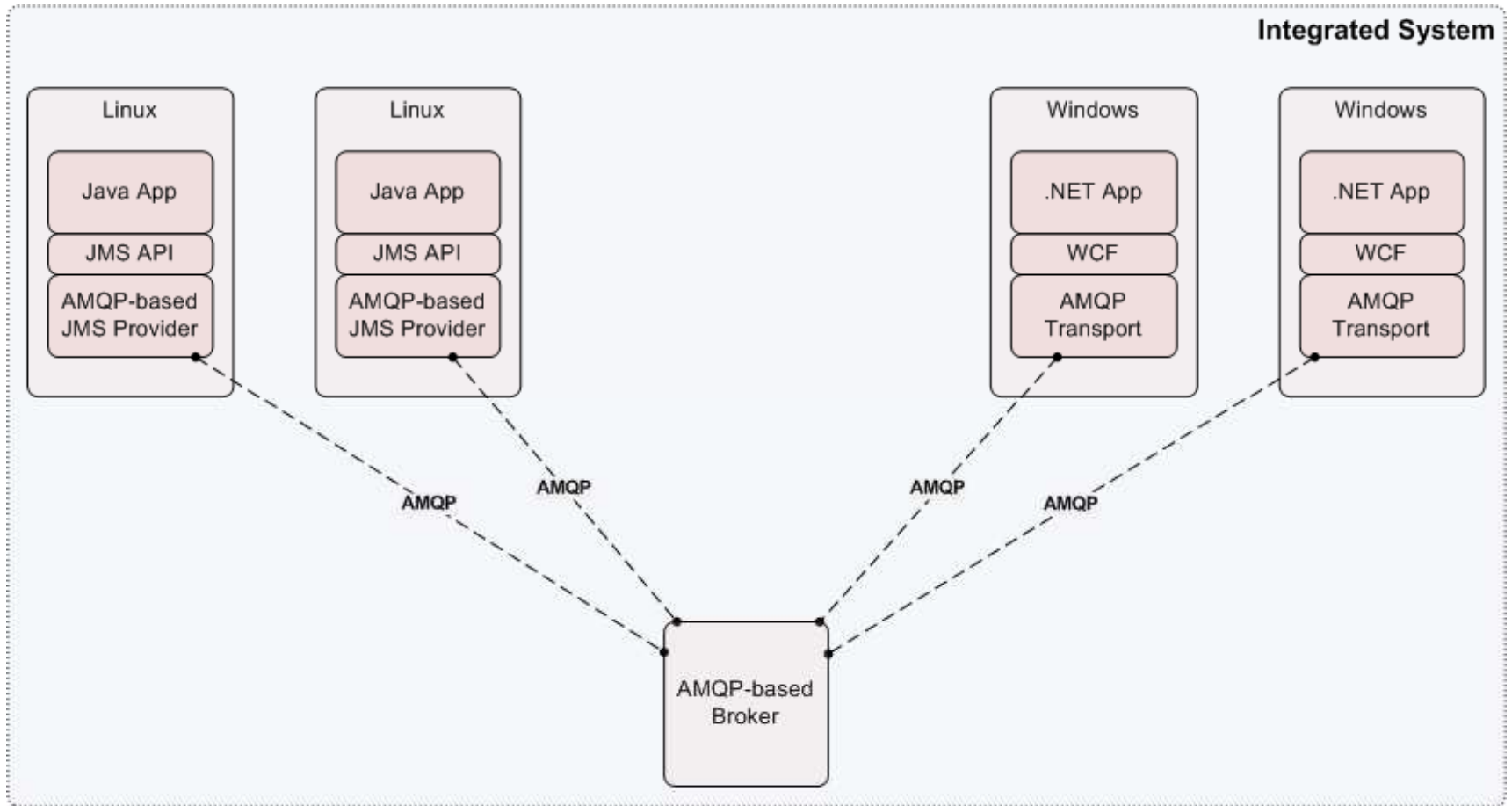
Symmetric Protocol



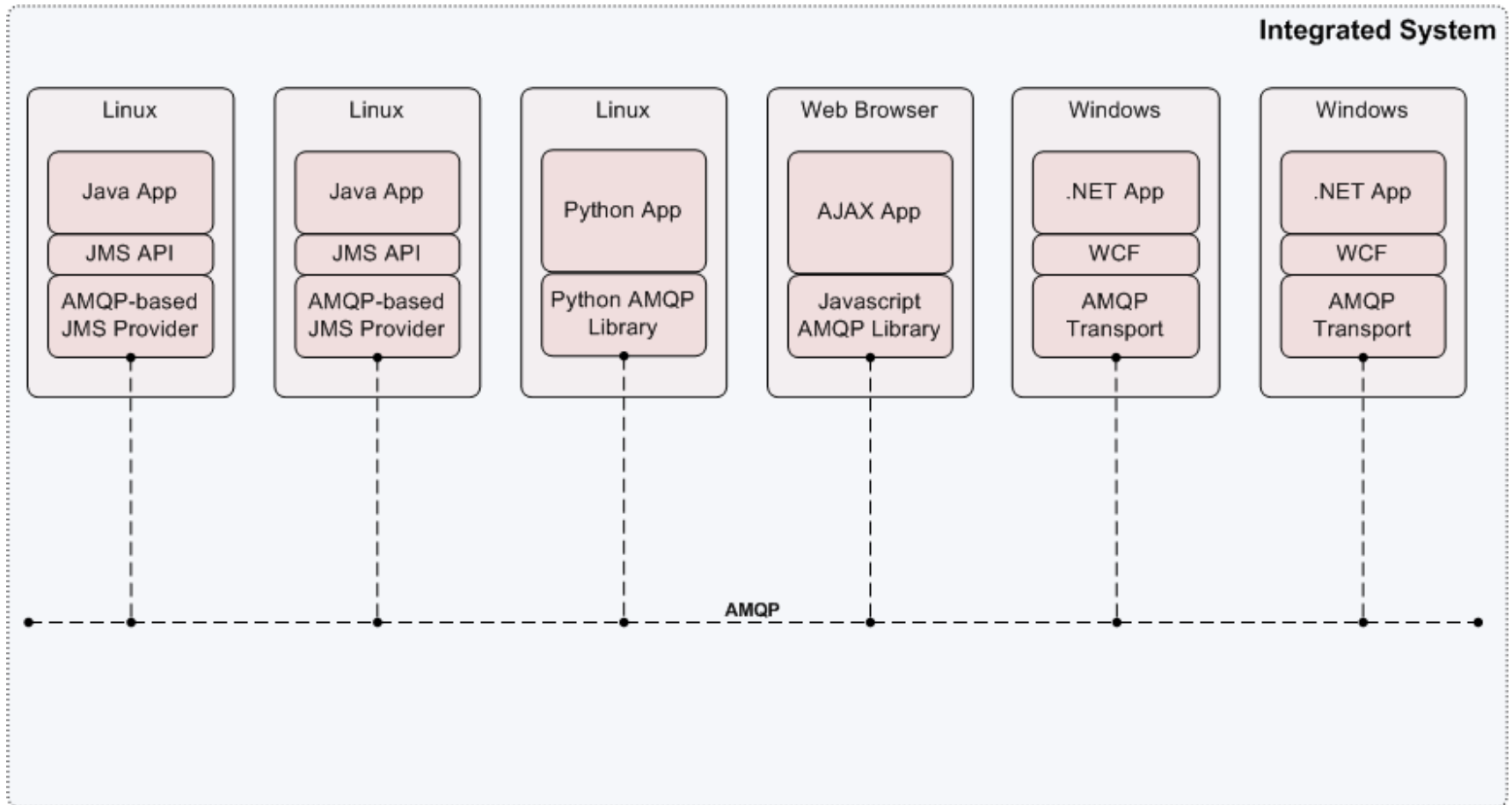
Symmetric Protocol



Symmetric Protocol



Broad Client Support



Apache Qpid

- Qpid offers full support for the AMQP feature set
 - Supports the latest version of the protocol (v 0-10)
- Project includes
 - 2 brokers
 - Java & C++
 - Client libraries
 - Java, C++, Python, Ruby, ..
- Active and diverse community of developers & users
- Learn more at <http://qpid.apache.org>
- Key features
 - Range of messaging patterns
 - High performance
 - Transient and durable messaging
 - Large message support
 - Clustering and failover
 - Federation
 - Transactions
 - Security
 - Rich queue semantics
 - Integrated management



Microsoft and AMQP

- Microsoft is a member of AMQP.org
 - Joined in October 2008
 - Working to complete the 1-0 version of the spec
- Microsoft is a contributor to Apache Qpid
 - Windows port of C++ broker and client library
 - WCF channel
 - SQL-based persistence provider
 - Packaging

