B2BITS

FPL Member

FIX Certification Agent

B2BITS is a financial software company committed to providing its clients with industry leading technology.

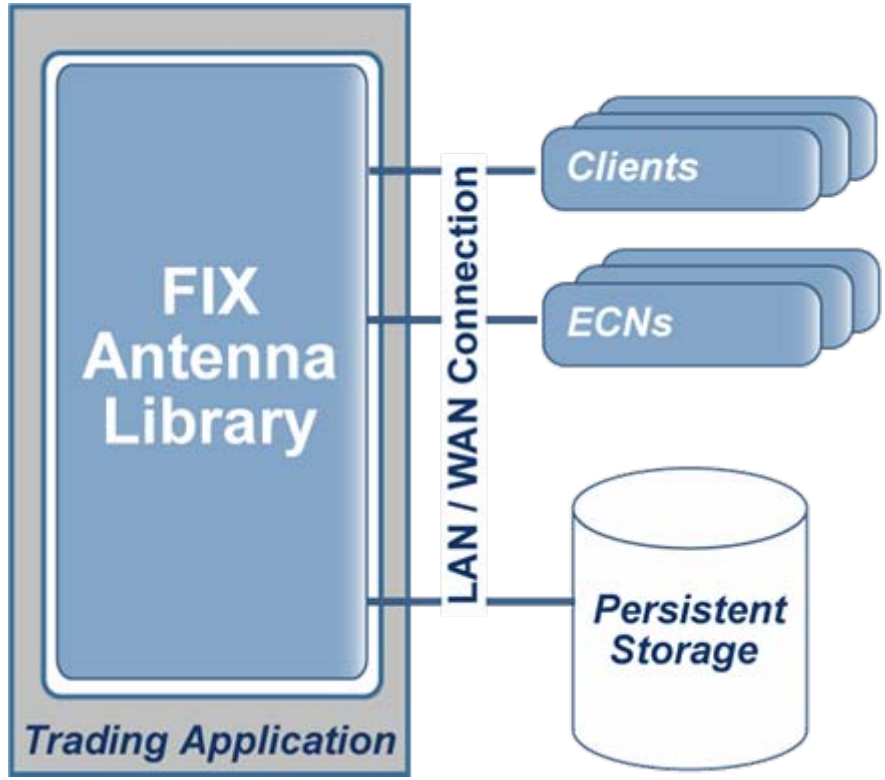
We believe that high performance, resilient messaging and trading software is a requirement for the financial services domain as a whole.

Core FIX products:

- FIX Antenna
  - C++
  - .NET
  - Java
- FIX Edge
  - Standard Edition
  - Enterprise Edition

FIX Antenna C++/.NET/Java

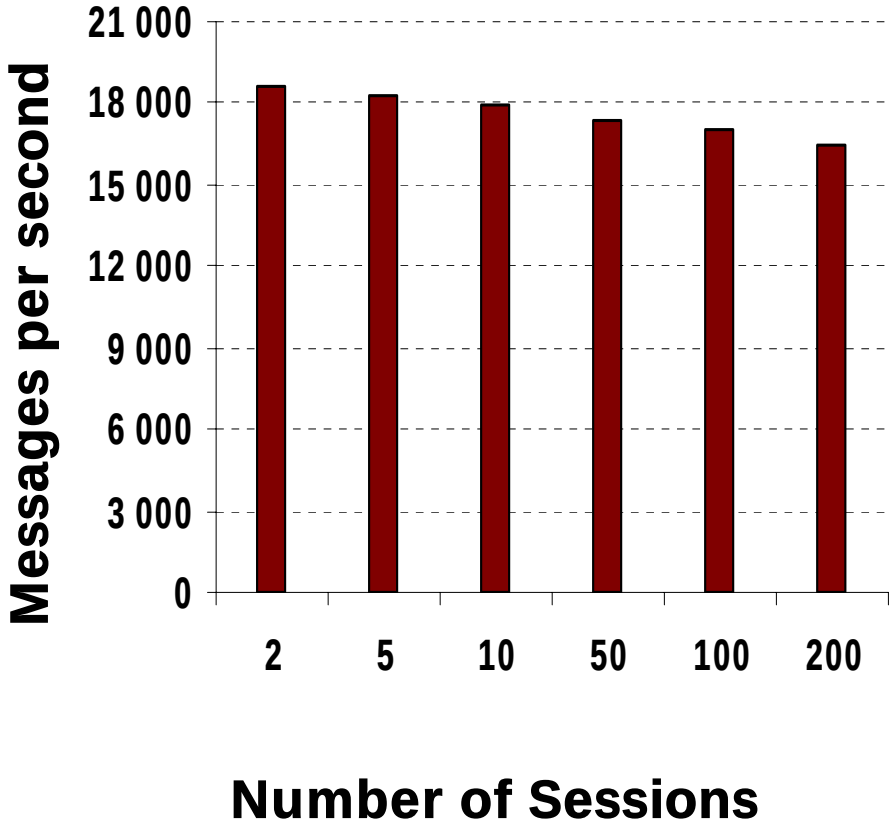
- FIX 4.0 - 4.4
- FAST
- Customizable FIX
- Up to 200 concurrent sessions
- High throughput
- Low latency
- Failover
- Flexible session layer
  - Intraday logout tolerance
  - Force sequence number reset
  - Smart “sequence number too low” handling

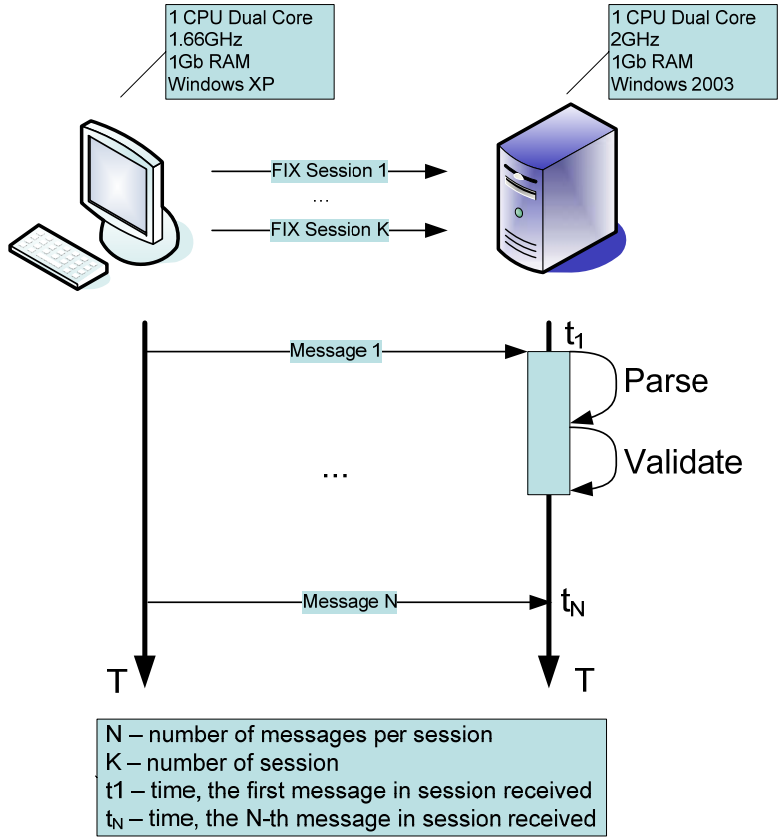


FIXEdge

FIX Antenna

Throughput

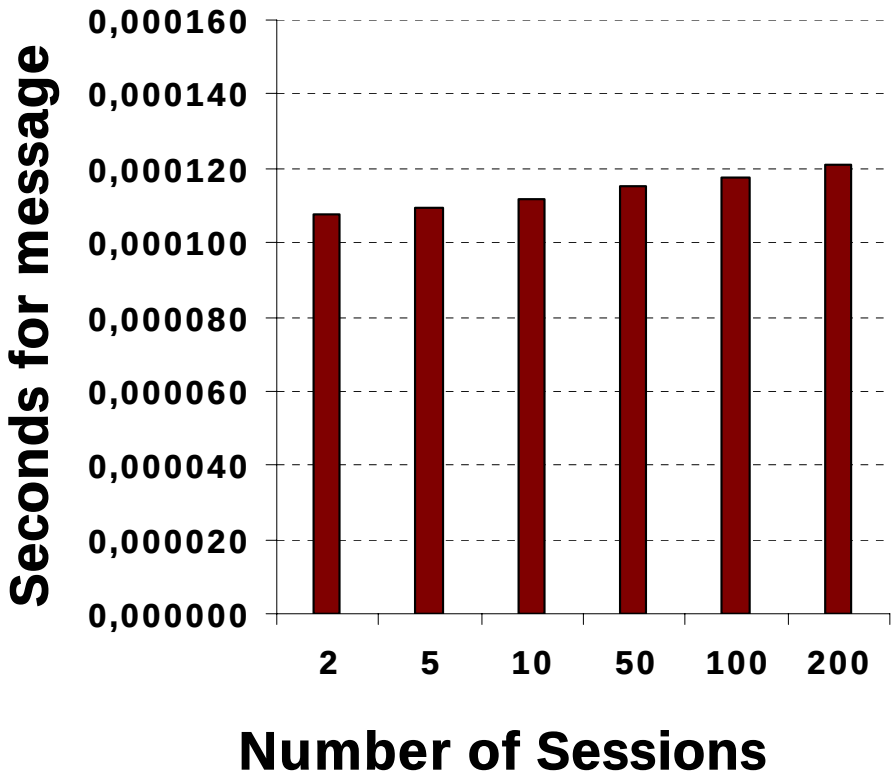


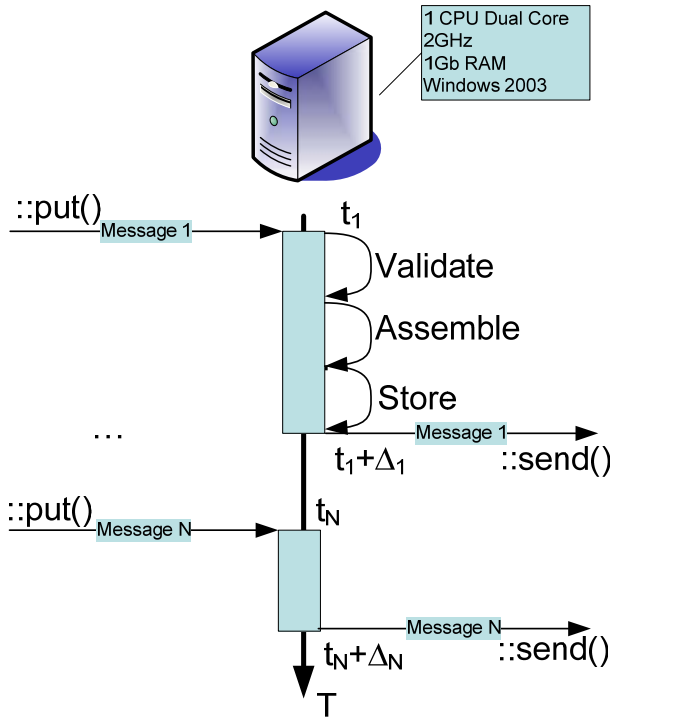


N – number of messages per session
K – number of session
t1 – time, the first message in session received
t_N – time, the N-th message in session received

$$Throughput = \frac{N}{t_N - t_1} * K$$

Latency





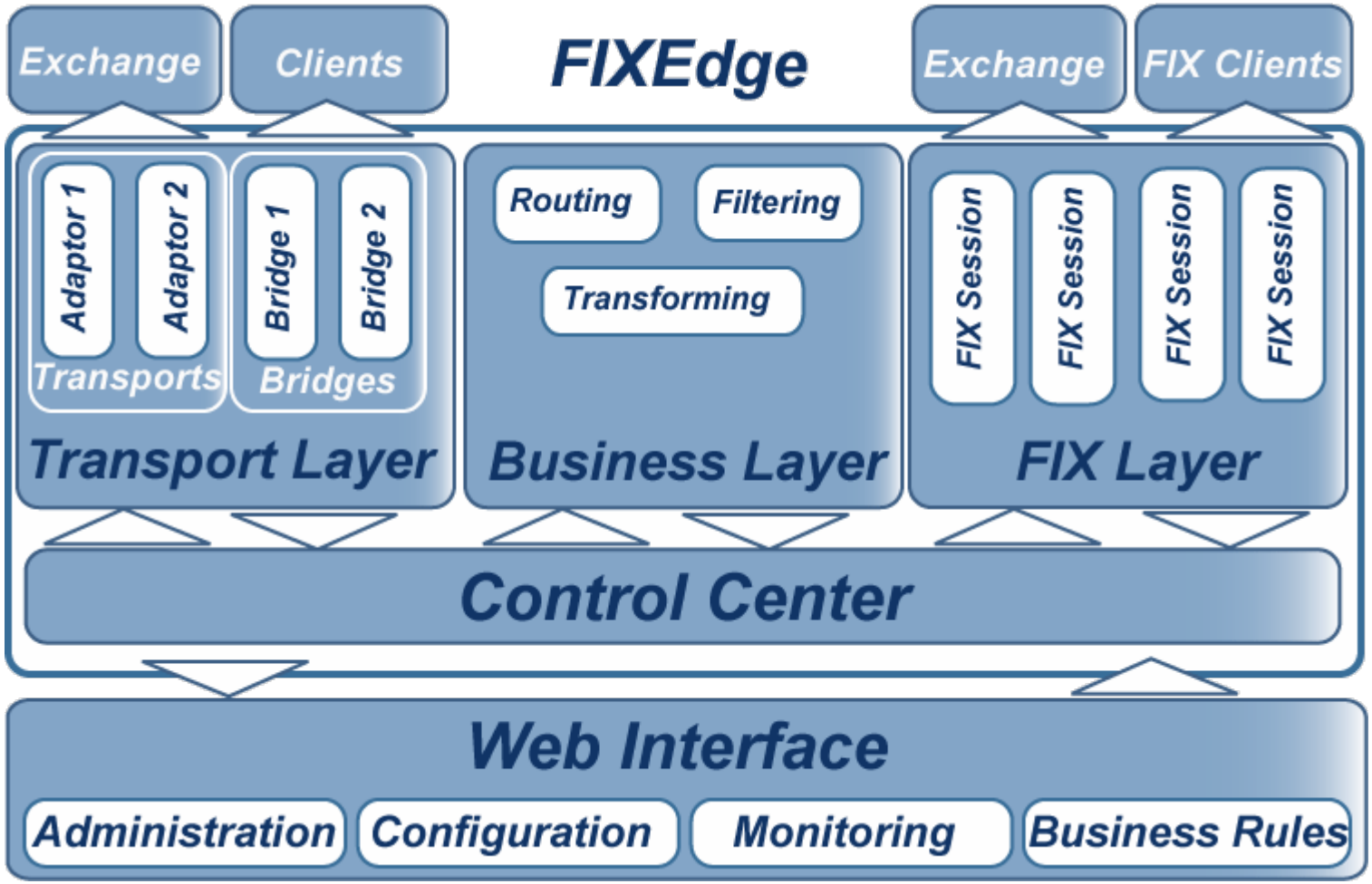
N – number of messages per session
t1 – time, the first message in session received
Δ_1 – time the first message was processed before sending
t_N – time, the N-th message in session received
Δ_N – time the N-th message was processed before sending

$$Latency = \frac{1}{N} * \sum_{i=1}^{N} \Delta_i$$

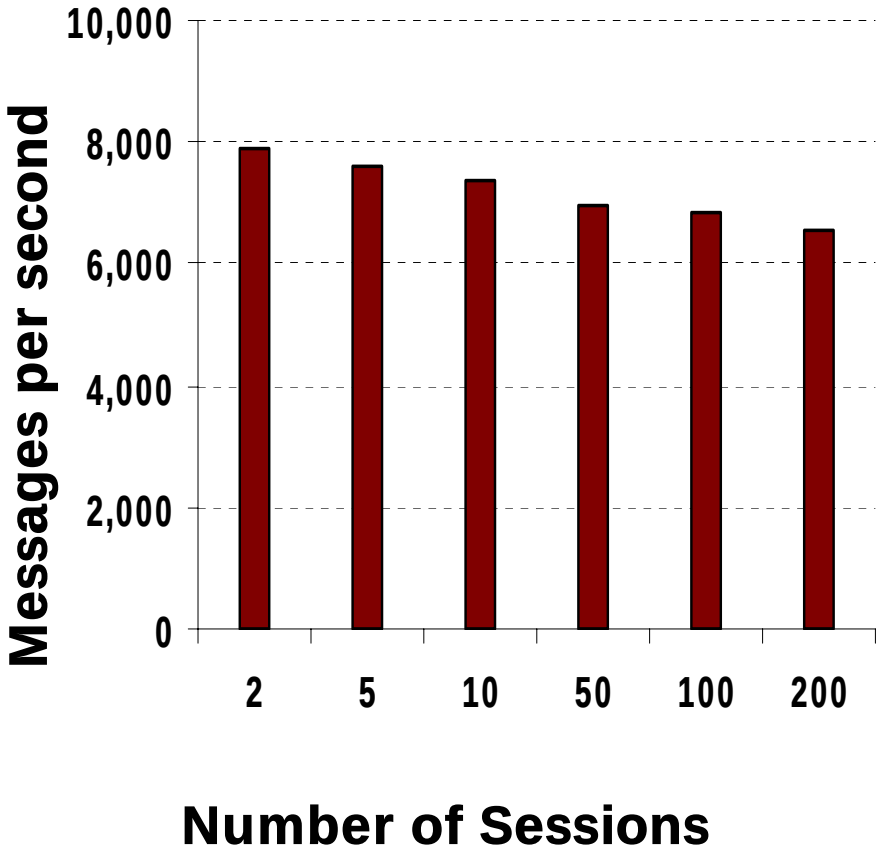
FIX Edge: FIX Application Server

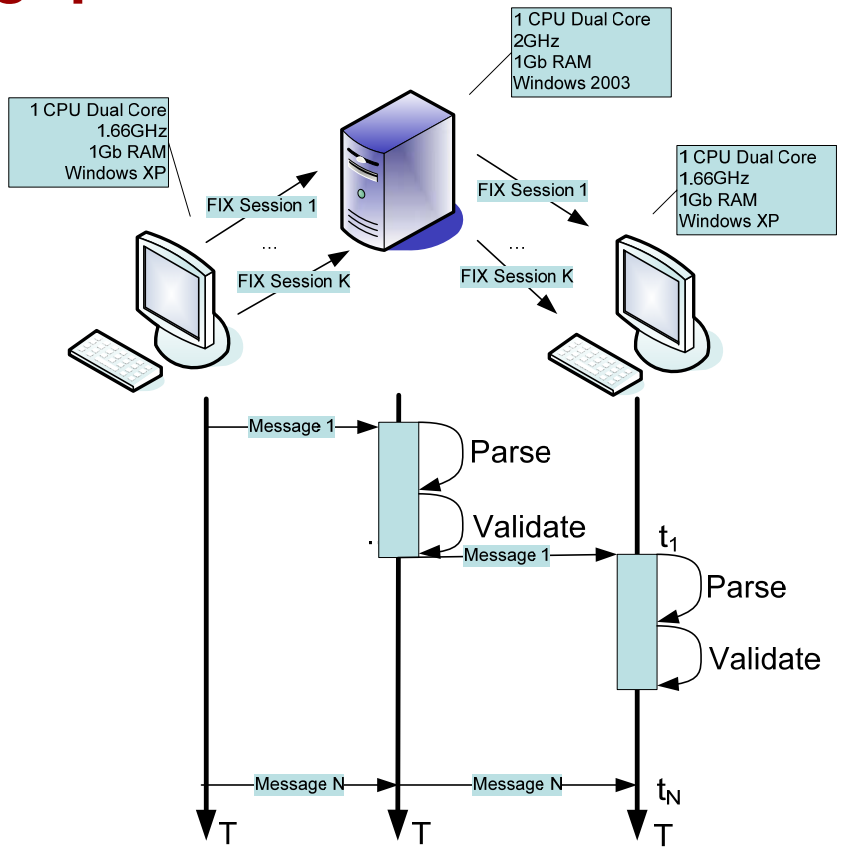
- Business Logic support (e.g. rule-based routing and transformation).
- Built in order state machine with persistent storage.
- Built in support of FAST protocol.
- Built in generic message history archive.
- Ability to define and support custom tags.
- Libraries in .Net, C++ and Java to parse/validate/assemble application-level FIX messages.
- Transaction simulator.
- Built-in FIXopaedia (FIX dictionaries for inline support).
- Web-based interface for configuration, administration and monitoring.
- Built-in log viewer.
- The automation of scheduled tasks (e.g. Start of Day, End of Day).
- Simple error detection and recovery (Notification API, Configurable Logging).
- A diverse set of supported transports (SXS, COM, MQ,TIB, NPipe).
- Ability to use custom transports.
- On-line support subject to market hours and client location.

FIXEdge: Architecture



Throughput





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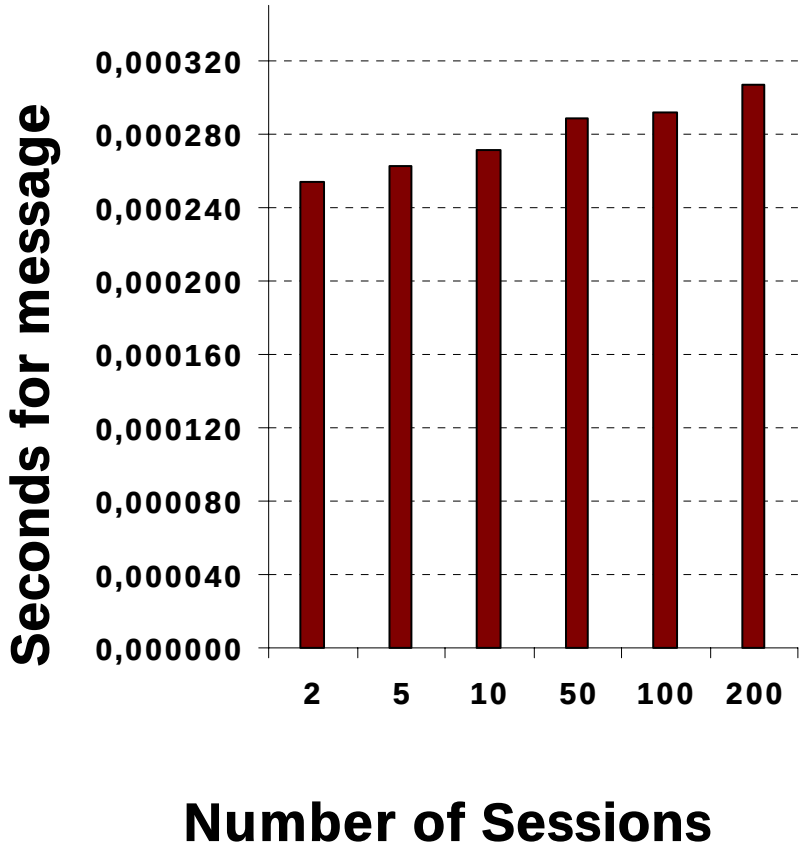
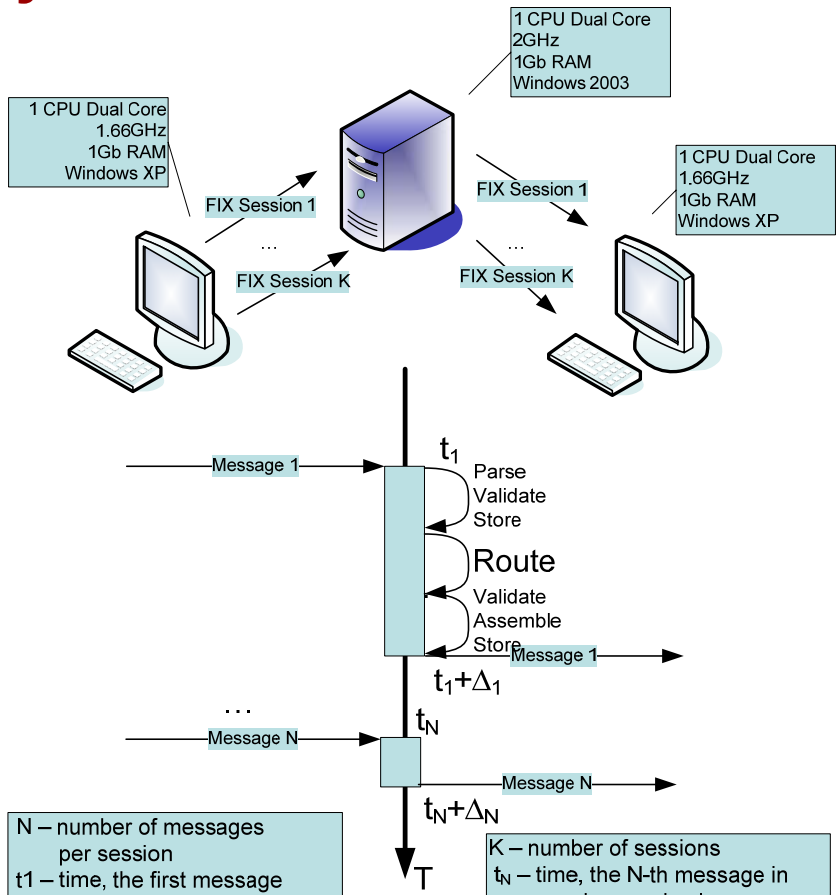
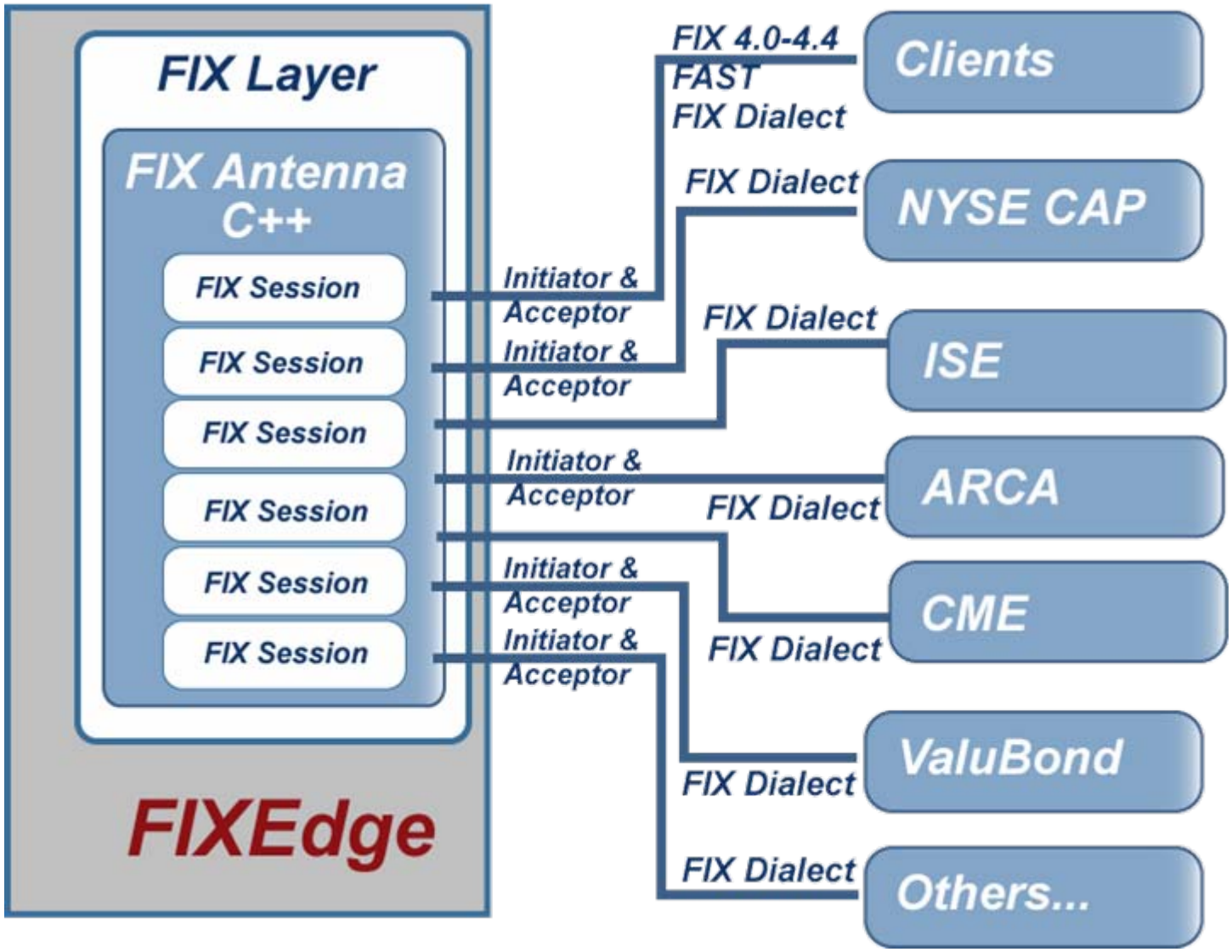
Latency



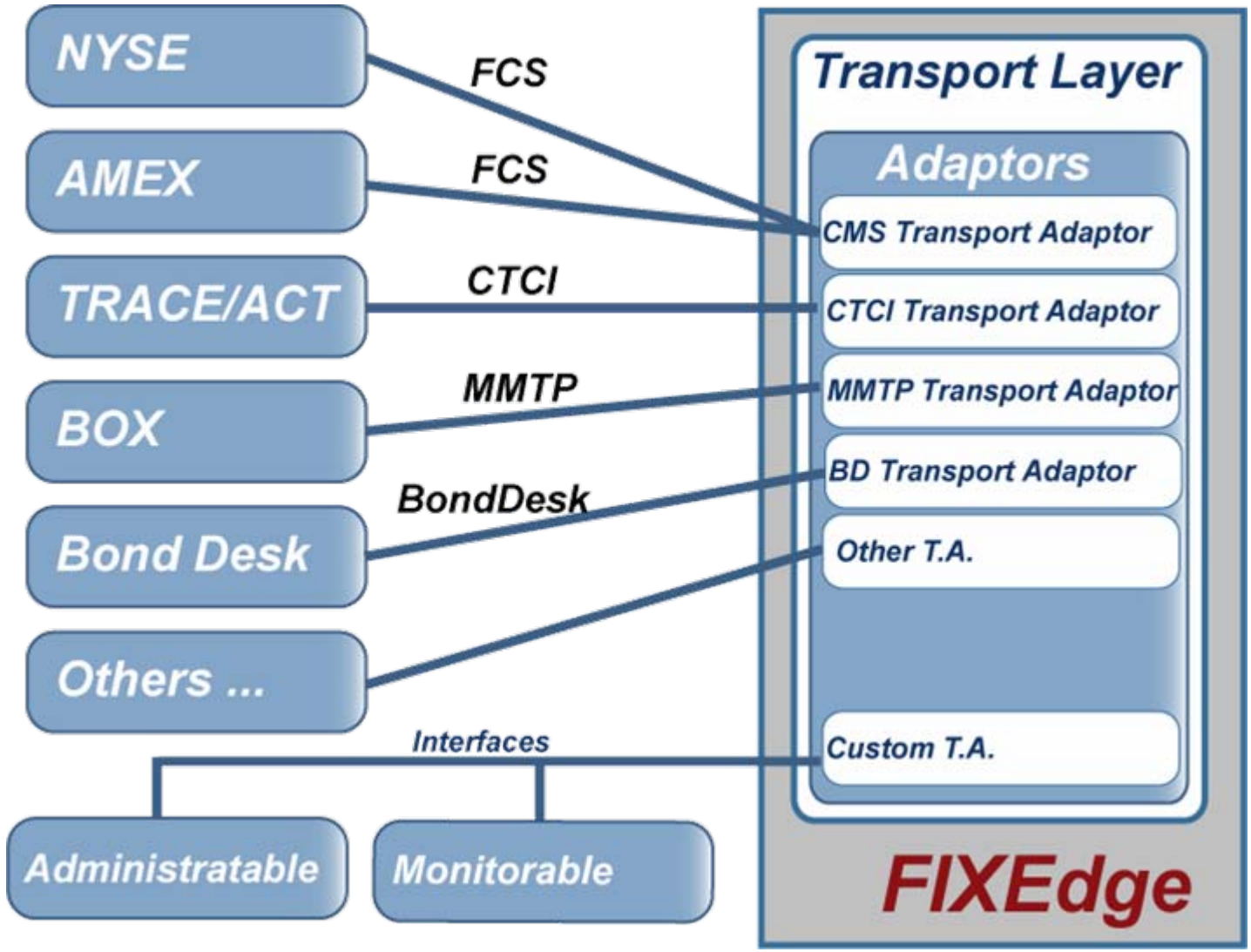


$$Latency = \frac{1}{N * K} * \sum_{i=1}^{N*K} \Delta_i$$

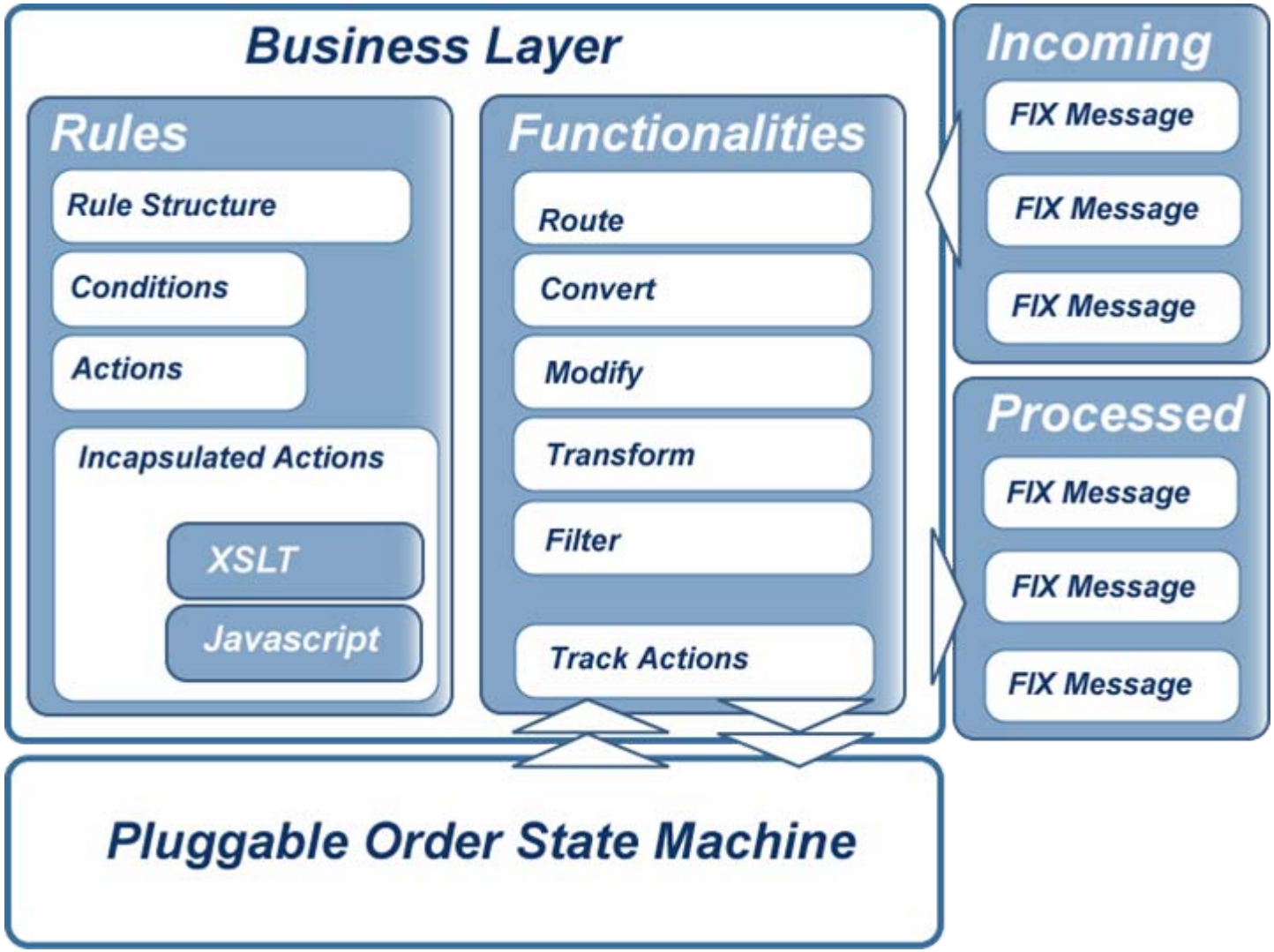
FIXEdge: FIX Layer



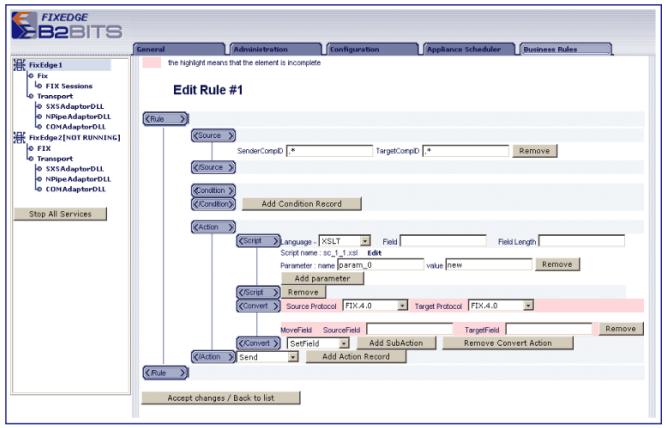
FIXEdge: Transport Layer



FIXEdge: Business Layer Features



FIXEdge: Business Layer Features



Sample.js:

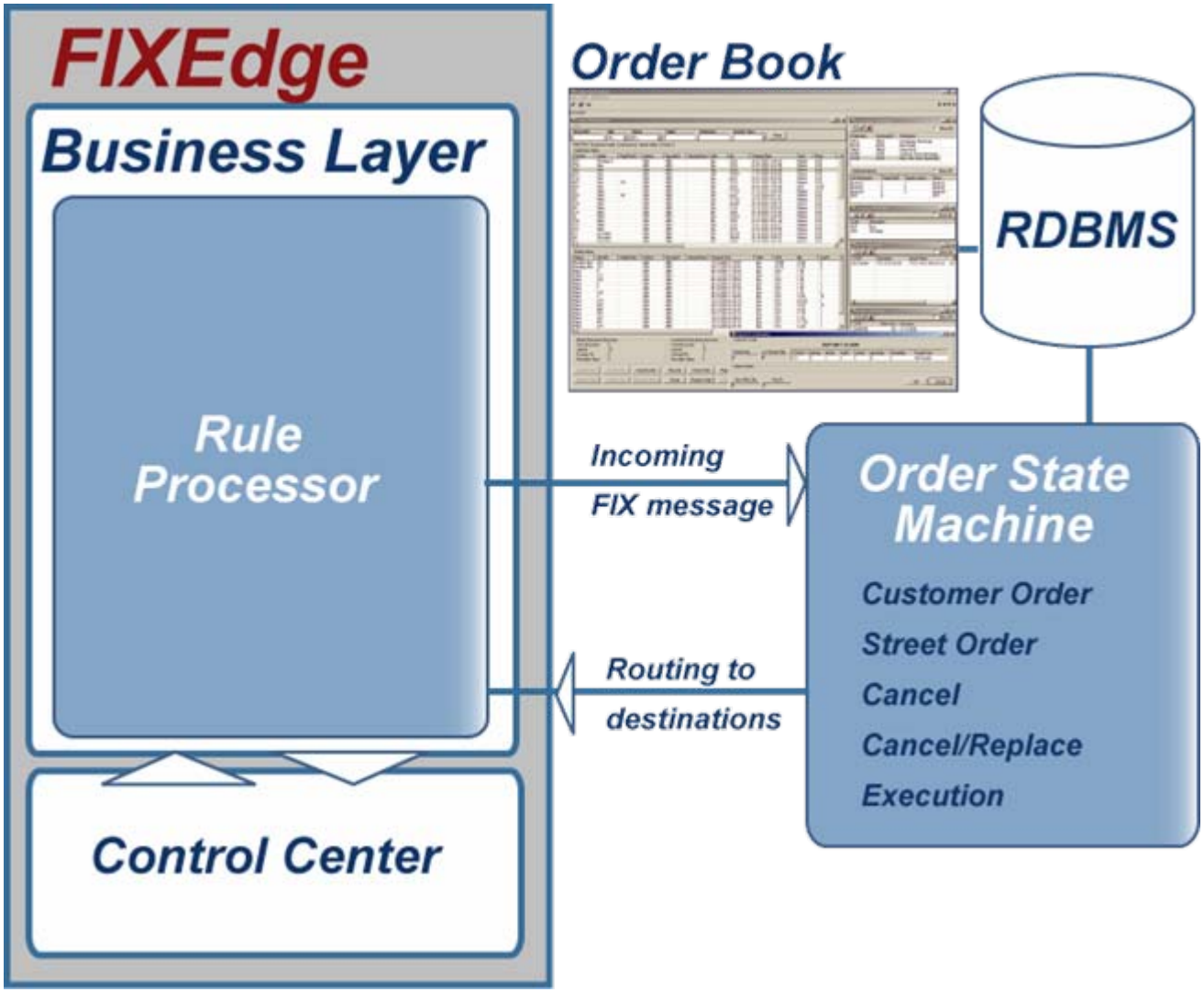
```
if(!undefined == getStringField(65)){
 setStringField(55, getStringField(55)
 + "." + getStringField(65));
}
```

Sample.xslt

```
<?xml version='1.0'?>
<xsl:stylesheet
xmlns:xsl='http://www.w3.org/1999/XSL/Transform'
version='1.0'>
<xsl:output encoding='US-ASCII'/>
<!-- Declaration of the parameter with the default value -->
<xsl:param name="param1" select="'default value'"/>
<!-- Declaration of the parameter with the default value -->
<xsl:param name="param2" select="'default value'"/>
<!-- Find '<doc>' element inside XML -->
<xsl:template match='doc'>
  <!-- Replace with '<out>' element -->
 <out>
  <!-- Remain text in element unchanged -->
  <xsl:value-of select="."/>
  <!-- Append value of the first input parameter -->
  <xsl:value-of select="$param1"/>
  <!-- Append value of the second input parameter -->
  <xsl:value-of select="$param2"/>
 </out>
</xsl:template>
</xsl:stylesheet>
```

FIXEdge

FIXEdge Enterprise Edition: OSM



FIXEdge: Control Center

Configure FIXEdge

- Session management
- Session scheduling
- Appliance scheduling
- Add/Remove Business Rules
- Configure Transport Adaptors

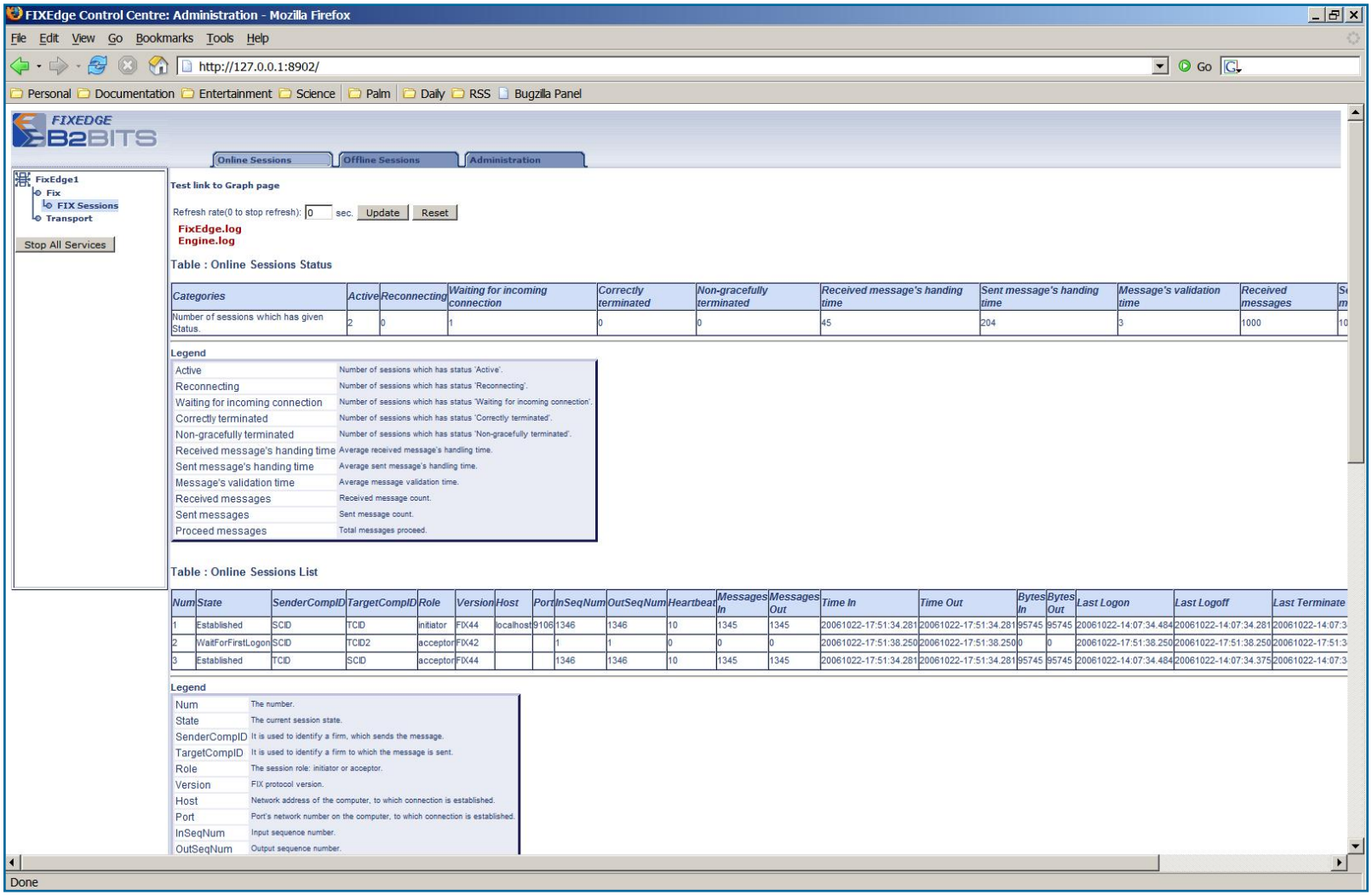
Administrate FIXEdge

- Start/Stop
- Reload Business Rules
- Export logs
- Create/Delete sessions on-fly

Monitor FIXEdge

- Logs
- Session messages
- Session statistics

FIXEdge: Administration Features

- Graphic design that gives clear picture of management logic and intuitive interface for components and their functionality.
- Configuration is divided into sections that are strongly related to components. User manages smaller number of parameters at a time and thus, has a better understanding what is being configured.
- Appliance scheduler is added as a standard feature.
- Business Rule section in the main menu provides functionality for adding, removing and editing business rules. The GUI used in this section can help to arrange the business logic even for people who are not familiar with XML.
- FIXEdge Control Center supports multiple instances of FIXEdge. Users will have a single management tool for all FIXEdge services installed on their systems. This gives the advantage of fast accessibility and storage efficiency.

FIXEdge: Administration Features