ACHIEVING CONSISTENT LOW LATENCY WITH ZING

Why fast-paced businesses need consistent low latency

REAL TIME JAVA-BASED BUSINESS SECTORS SUCH AS
- CAPITAL MARKETS
- WIRELESS SERVICE PROVIDERS
- ONLINE ADVERTISING NETWORKS

NEED CONSISTENT LOW LATENCY FOR
- MACHINE-MACHINE RESPONSE TIMES
- IN-MEMORY ACCESS TO REAL-TIME INFORMATION

WHY LEGACY JVMs CANNOT DELIVER CONSISTENT LOW LATENCY

 Legacy JVMs have inherent performance inhibitors

- Full GC pauses are generally not an issue for low-latency Java applications but yield enormous performance drawbacks that cannot be completely eliminated

- Minor GC will “stop the world” for a few milliseconds, thus pausing threads for a few milliseconds

- These pauses start impacting performance before the 99th percentile

WHAT THIS MEANS FOR REAL TIME BUSINESSES

- User session time-outs
- Delays in transactions
- User satisfaction with reduced system stall times and faster response times

LEGACY JVMS HAVE INHERENT PERFORMANCE INHIBITORS

- Full GC pauses are generally not an issue for low-latency Java applications, yielding enormous performance drawbacks that cannot be completely eliminated

- Minor GC will “stop the world” for a few milliseconds, thus pausing threads for a few milliseconds, which start impacting performance before the 99th percentile

- These pauses start impacting performance before the 99th percentile

LEGACY JVMs CANNOT DELIVER CONSISTENT LOW LATENCY

JVM TUNING CANNOT COMPLETELY RESOLVE THE ISSUE

- Limitations of regular JVM tuning
  - Can only delay, not prevent young gen collection and pauses
  - Undersized productivity of developers, QA and test teams

- Vulnerable to manual errors
  - High ongoing costs of continuous re-tuning

- Loops (and even under peak load)

- Reduces latency

- No fallback to “stop the world” for young gen collection

HOW AZUL SYSTEMS ZING DELIVERS CONSISTENT LOW LATENCY

- Zing has built-in features that change the way memory allocation and garbage collection are conducted

- Young gen/Minor GC pauses cannot be completely eliminated

- Minor GC will “stop the world” for a few milliseconds

- These pauses start impacting performance before the 99th percentile

THE ZING ADVANTAGE

- Zing has built-in features that change the way memory allocation and garbage collection are conducted

- Minor GC pauses cannot be completely eliminated

- Minor GC will “stop the world” for a few milliseconds

- These pauses start impacting performance before the 99th percentile

- Why fast-paced businesses need consistent low latency

- User session time-outs
- Delays in transactions
- Reduced time to market due to improved developer productivity and reduced tuning times

- System stalls -- C4 Collector makes GC pauses a non-event

- Deploys young gen and minor collection with pauses of up to a few milliseconds

- Enables worst case response times under one millisecond

- Fewer tuning flags – less chance for configuration error

- What this means for real time businesses

- User session time-outs
- Delays in transactions
- User satisfaction with reduced system stall times and faster response times

SIMPLIFIED TUNING

- Consistently achieve millisecond-level response times without tuning

- Fixed up developers

- Enables worst case response times under one millisecond

- Fewer tuning flags -- less chance for configuration error

THE ZING ADVANTAGE

- What this means for real time businesses

- User session time-outs
- Delays in transactions
- User satisfaction with reduced system stall times and faster response times

SIMPLIFIED TUNING

- Consistently achieve millisecond-level response times without tuning

- Fixed up developers

- Enables worst case response times under one millisecond

- Fewer tuning flags -- less chance for configuration error

DISCOVER ZING

- Contact Azul Systems at:
  - Call us: +1.650.230.6500
  - Email us: info@azul.com

AZUL SYSTEMS ON THE WEB
azul.com

JAVA and Hotspot are trademarks or registered trademarks of Oracle and/or its affiliates.
All other trademarks are the property of their respective holders.
© 2017 Azul Systems Inc.

ZING HELPS YOU GET MORE OUT OF JAVA

- Decreased time to market due to improved developer productivity and reduced tuning times

- System stalls -- Zing collector makes GC pauses a non-event

- Java jitter, resource and memory allocation issues

- Increased cost savings via better utilization of existing hardware resources

- Productivity of developers via reduced need for tuning

- Customer satisfaction with reduced system stalls and faster response times

- Contact Azul Systems at:
  - Call us: +1.650.230.6500
  - Email us: info@azul.com

AZUL SYSTEMS ON THE WEB
azul.com

JAVA and Hotspot are trademarks or registered trademarks of Oracle and/or its affiliates.
All other trademarks are the property of their respective holders.
© 2017 Azul Systems Inc.