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Security Operations in the Cloud

Monthly Webinar Series

How to Protect Enterprise Systems with Cloud-Based Firewalls

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Today's Speakers

- Kevin Garvey – SANS Instructor

- David Aiken – AWS Marketplace, Solutions Architect

Today's Agenda

- Progression of firewalls over the generations
- Features of cloud-based firewalls
- Management of cloud-based firewalls
- Advanced features of cloud-based firewalls

Familiar Maturing Features

- On-premises firewalls have matured greatly since their inception.

Stateless	→	Stateful	→	Next-generation	→	Cloud-based

5

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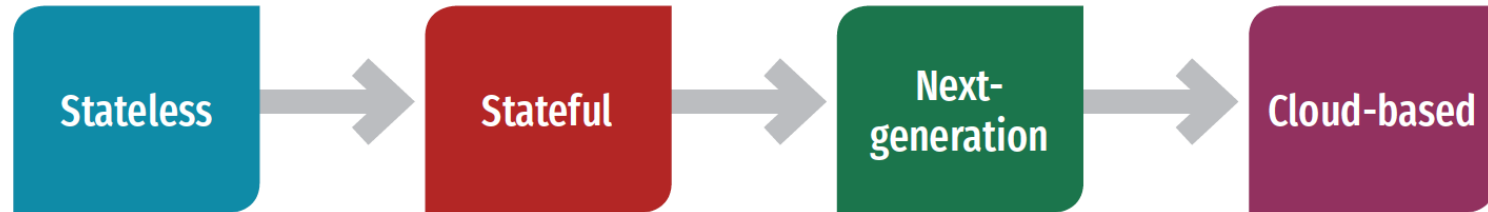
Familiar Maturing Features

- Is the perimeter easily defined in 2019?
  - Firewalls are still just as important.
  - The picture gets cloudy quickly.

Firewall Features

- Web filtering

- Network logging

- IDS/IPS

- Deep packet inspection (DPI)

Firewall Features

- Web filtering
  - Used in the past to monitor user traffic
  - Policies could be granular, if needed
- Cloud-based web filtering
  - Enforces web content regardless of the user's location

Firewall Features

- Network logging
  - Ability to produce metrics
  - What does "normal" look like?
- Cloud-based network logging
  - Ability to see on-premises and cloud-based environments—together

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Firewall Features

- IDS/IPS
  - Differences between IDS/IPS
- Cloud-based IDP/IPS
  - Deployment of cloud-based firewalls
  - Connection of cloud IDS/IPS to on-premises

Firewall Features

- Deep packet inspection (DPI)

  - Investigates network packet headers and data to determine whether a packet contains a malicious payload

- DPI in the cloud

  - Helps to detect malicious traffic that may be traversing an organization's cloud infrastructure

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Managing Firewalls

- Deployment through AWS CloudFormation
  - Consistency and management
- Advantages of using a third-party WAF/firewall in AWS
  - Deploying firewalls in hybrid architectures
  - Managed and customized rules

Deploying firewalls in hybrid architectures

Managed and customized rules

Deployment through AWS CloudFormation

Single view

Advanced Features

- Behavioral threat detection
  - Link between on-premises and cloud environments
- Next-generation analytics
  - Visibility is key!
- Support for AWS Services

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The Story of Acme

- Implementing a cloud-based firewall
  - Problems Acme faced in the cloud
    - How did a cloud-based firewall help?
  - Advanced features that helped make Acme successful
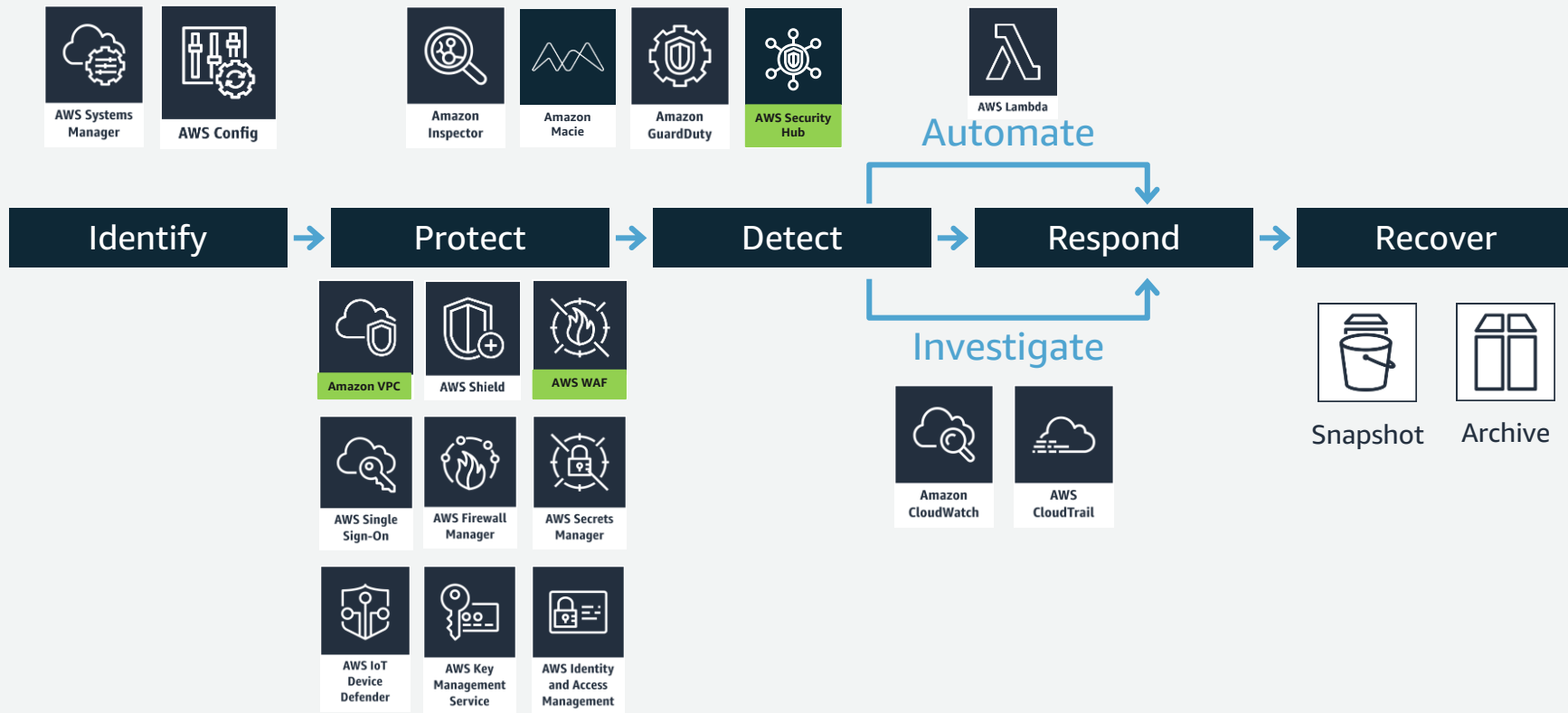
Recap

- Familiar firewalls are now in the cloud
  - Web filtering, network logging, IDS/IPS, DPI
- Managing cloud firewalls
  - AWS CloudFormation
  - Managed and customized rules
- Advanced cloud firewall features
  - Behavioral threat detection
  - Next-generation analytics
  - Support for AWS

Employing Cloud-based Firewalls in the AWS Cloud

AWS services that enhance cloud-based firewalls

AWS Systems Manager

AWS Config

Amazon Inspector

Amazon Macie

Amazon GuardDuty

AWS Security Hub

AWS Lambda

Automate

Identify → Protect → Detect → Respond → Recover

Investigate

Amazon VPC

AWS Shield

AWS WAF

AWS Single Sign-On

AWS Firewall Manager

AWS Secrets Manager

AWS IoT Device Defender

AWS Key Management Service

AWS Identity and Access Management

Amazon CloudWatch

AWS CloudTrail

Snapshot

Archive

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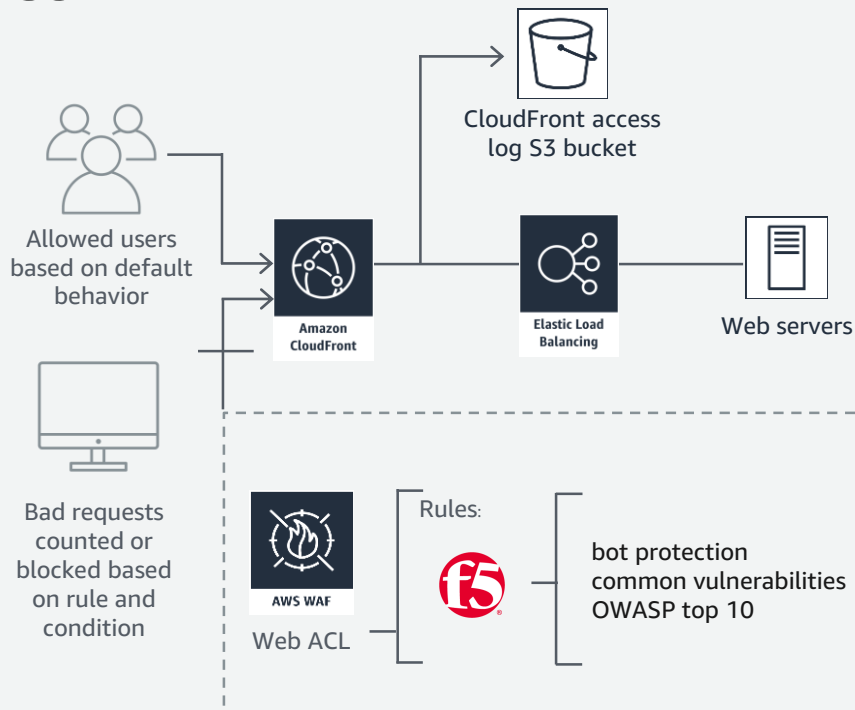# Monitor and secure VPC workloads with VPC Traffic Mirroring

- Gain operational insights

- Detect network and security anomalies

- Implement compliance and security controls

- Troubleshoot issues
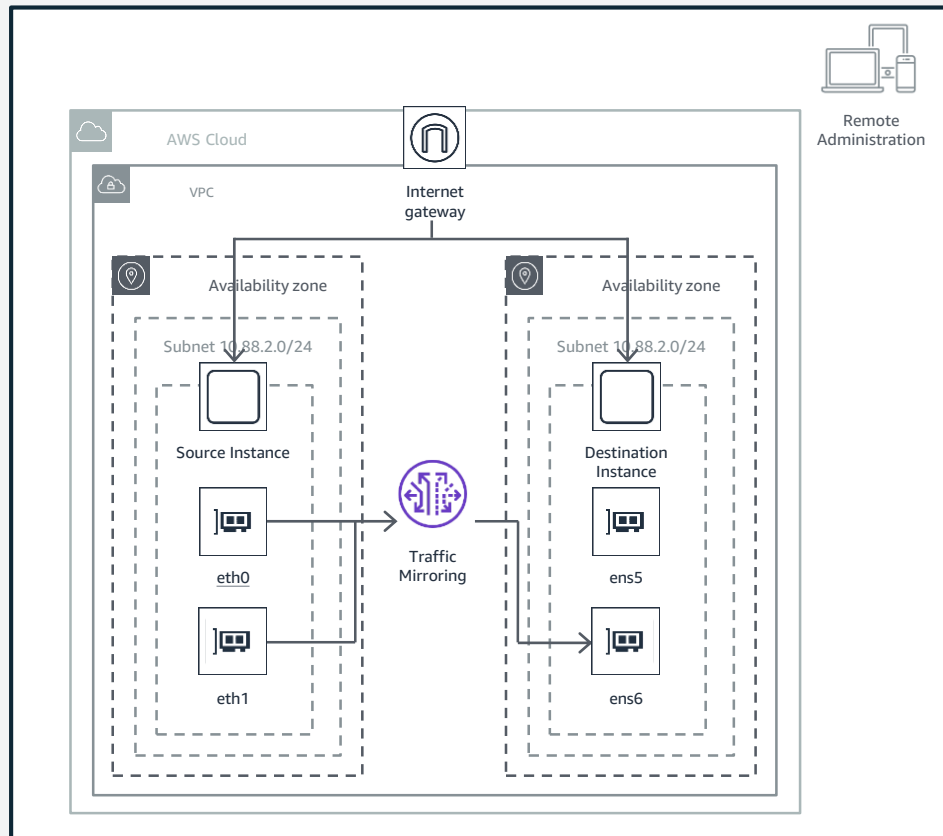
# Protect web applications from exploits with AWS WAF and managed rules

- Create custom rules and deploy new rules within minutes, letting you respond quickly to changing traffic patterns

- F5 offers pre-configured, managed rules to provide an extra layer of protection

CloudFront access log S3 bucket

Allowed users based on default behavior

Amazon CloudFront

Elastic Load Balancing

Web servers

Bad requests counted or blocked based on rule and condition

AWS WAF

Web ACL

Rules:

bot protection
common vulnerabilities
OWASP top 10

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Gain full visibility into access and activities in your AWS environment

- AWS Security Hub provides a comprehensive view for all user activities

- AWS Security Hub can assess F5 WAF configurations to ensure compliance with industry requirements specified by users
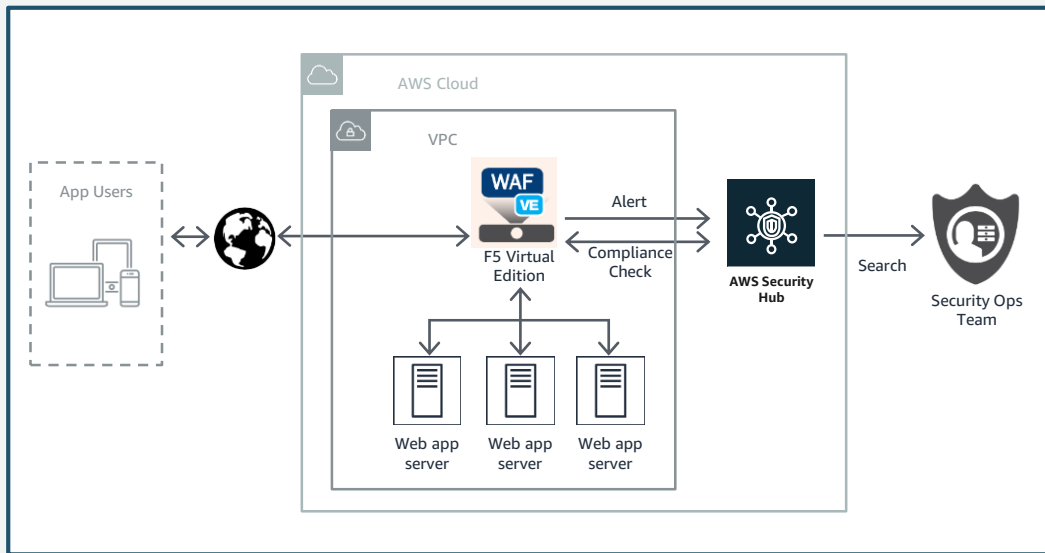
How are AWS customers leveraging F5 BIG-IP VE?

High availability

Migrating Tier 1 apps

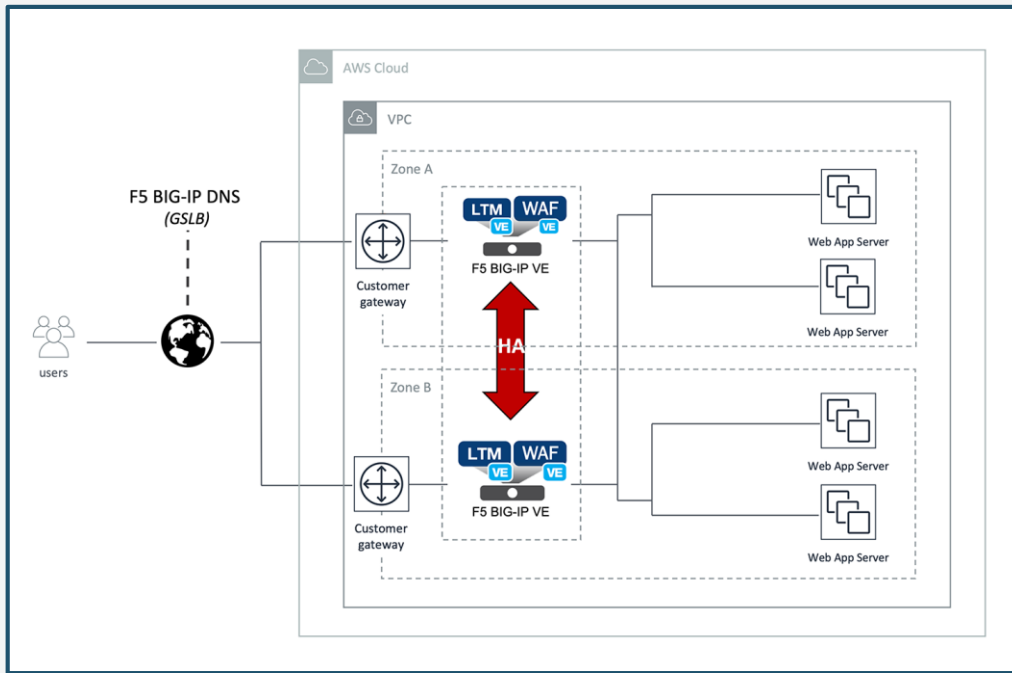**Quick Start for BIG-IP Virtual Edition**

App-Centric Strategy

F5 security supports business modernization
With BIG-IP platform technology

Benefits:

- Handles up to 80,000 web transactions in two days with no downtime

- Manage 10 times more application transactions

Palo Alto Networks prevents compliance threats

Using Next-Generation security platform protection

Benefits:

- Revealed threats from foreign states never before recognized

- Decreased traffic by 29%

- Reduced unnecessary connected sessions by 30%

- Reduced platform failover from up to 60 seconds to less than one second
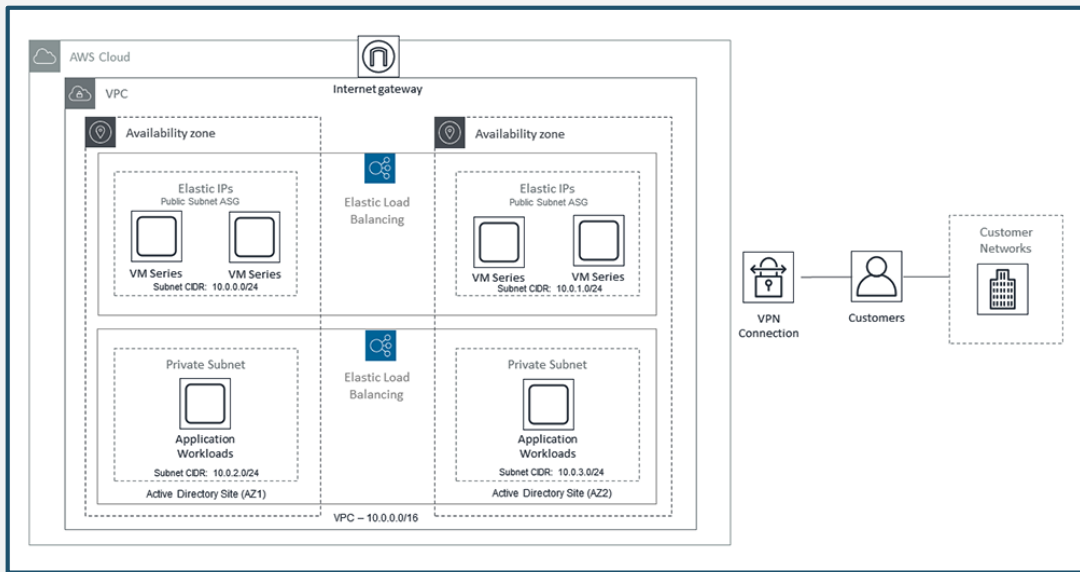
Fortinet boosts security team's efficiency

Through deploying FortiGate Next-Generation Firewall

Benefits:

- Productivity improvements resulting from increased connectivity capabilities

- An infrastructure ready to grow and scale with its business

- Optimized the IT team's time through improved communication with AWS
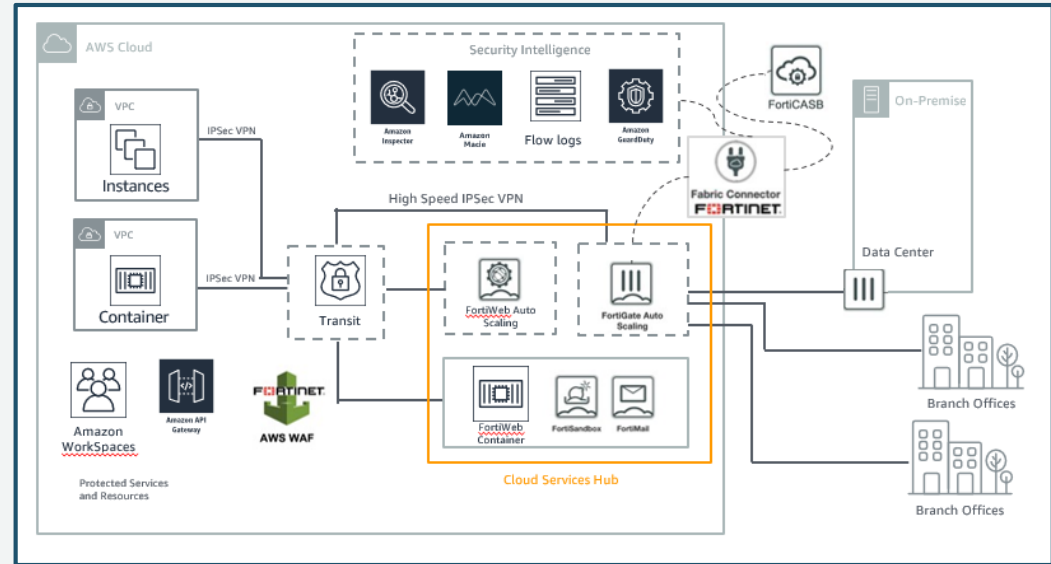
Why AWS Marketplace?

Flexible consumption and contract models

Quick and easy deployment

Helpful humans to support you

"If it had not been for AWS Marketplace, it would have taken a couple weeks before I even had the software installed on my side, because I would have to find a vendor, ensure their credibility, obtain quotations, and the proof of concept license."

Chandrasekaran Hari

Cloud Solutions Architect, MatchMove

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How can you get started?

BIG-IP Virtual Edition - Best
30-day free trial

VM-Series Next-Generation Firewall Bundle 2
15-day free trial

FortiGate Next-Generation Firewall
**15-day free trial**

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Webinar summary

> Cloud-based firewalls are no longer just a requirement for network security; they are an integral part of network- and security-based decisions in a cloud deployment.

> AWS Services can help optimize your security program.

> Current tools? Check out AWS Marketplace for assurance that what you know works in AWS.

> New tools? Pick vendors that know AWS and offer bleeding-edge capabilities.

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Q&A

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Questions tool to submit questions
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it's for a specific panelist.

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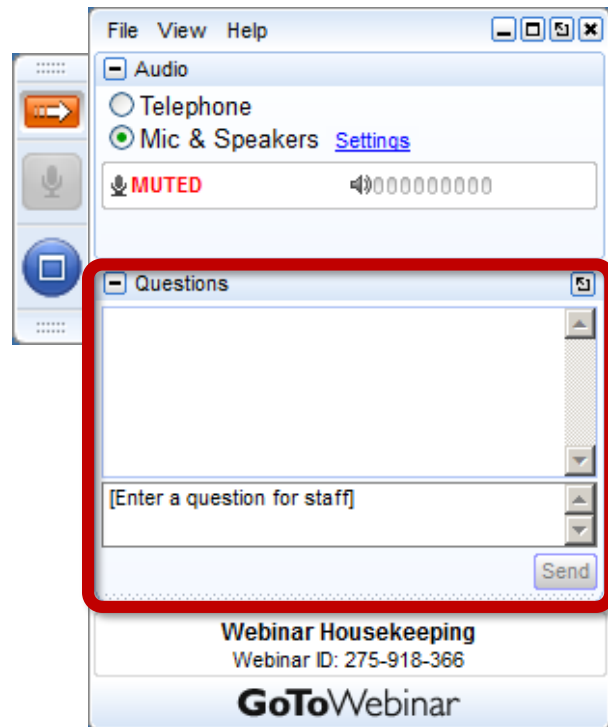
Acknowledgments

Thanks to our sponsor:

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To our special guest: David Aiken

And to our attendees, thank you for joining us today!

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