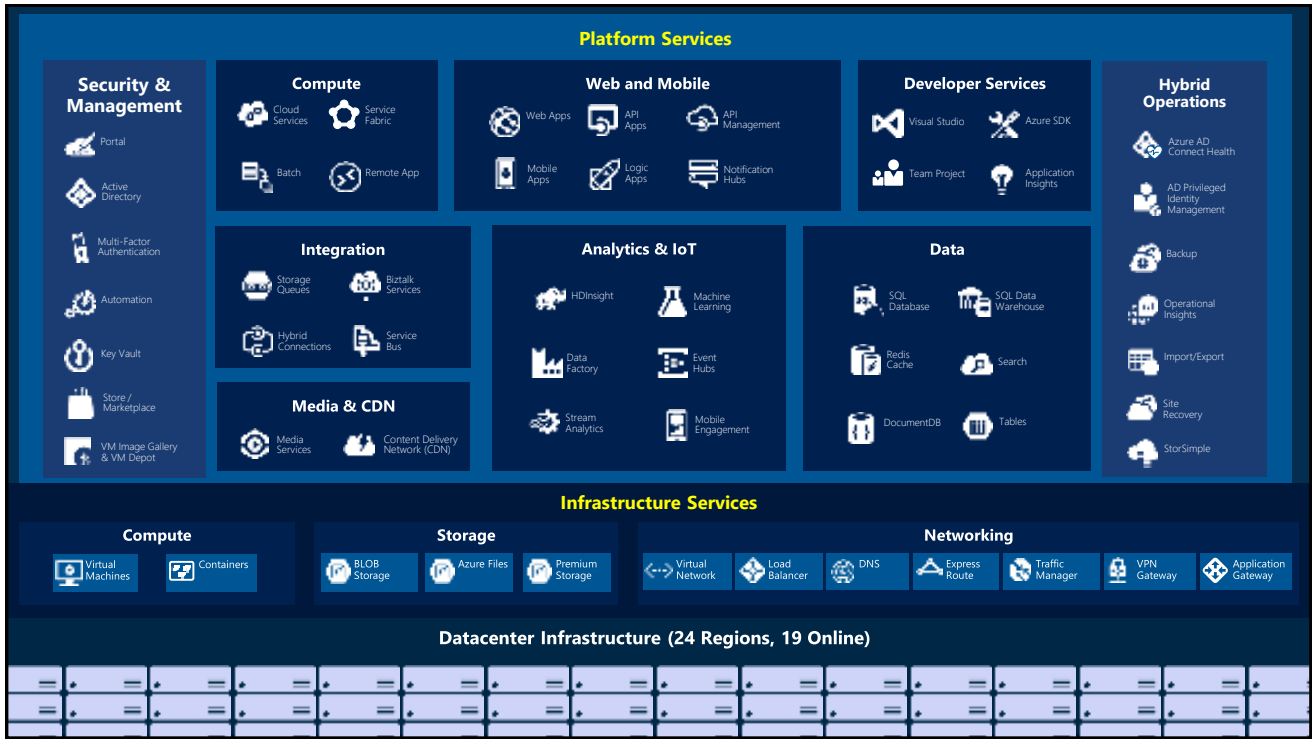
AZURE FACADES FOR SECURITY—PCI/HIPAA

PHIDIAX

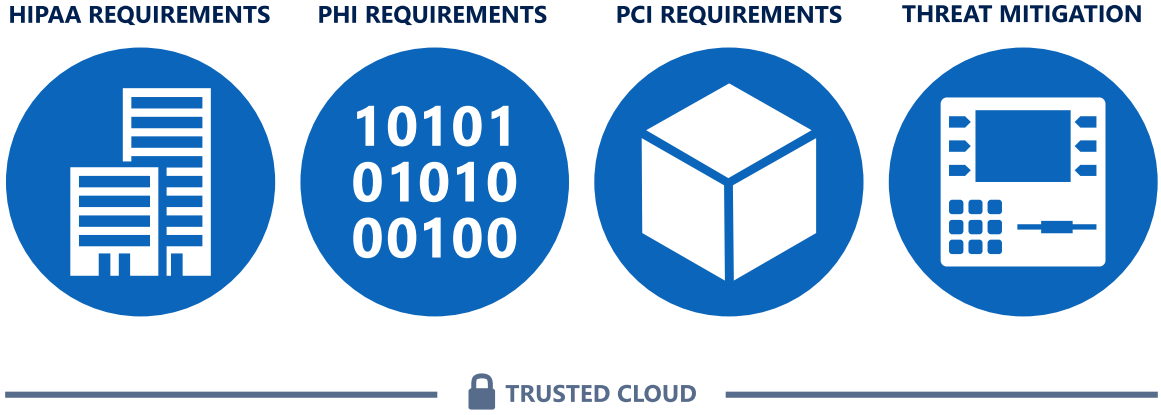
Securing hybrid access



Security boundaries

Azure—secure boundaries for your enterprise

Move the boundary of security to the edge of the internet, outside your datacenter



Objectives

- Why do we care about security at all?
- What types of security may be encountered?
- What methods can we use have security?

What is the goal?

Prevent unauthorized access to information and preventing others from denying authorized access.

Mandatory compliance areas like finance and healthcare must address these areas to meet regulatory requirements.

Threat Model Approach (TMA)

Areas of threat:

- Denial of service
- Information disclosure
- Elevation of privilege
- Tampering with data
- Repudiation
- Spoofing identity

Types

Encryption

- In flight—use Transport or Message
- At rest—in encrypted storage
- Securely—Bit depth
- Protect secrets

→ All the standards have guidelines

Methods

Mutual certificate authentication

- Very secure, private key validation
- Widely used
- Requires custom code

→ Make sure private certificates are securely held

Hashed values

- Has some repudiation
- Depends on mutual private hash key sharing
- Only validates fields that are in the hash
- Requires custom code

→ Somewhat improved, doesn't address encryption

Embedded key

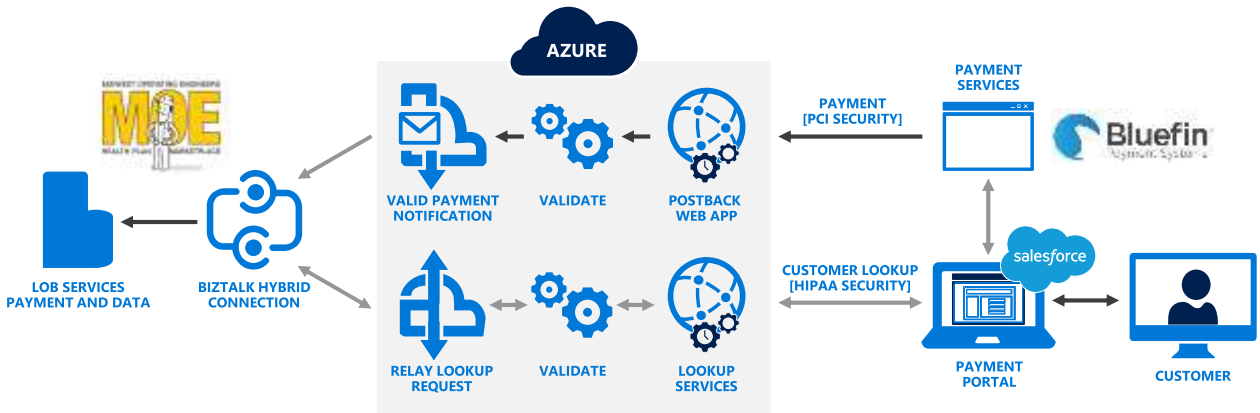
- Minimal security
- Requires embedding the key in every message
- No actual message validation
- Requires custom code

→ Get the idea? Custom code… Web APPS

Buying something?

Implementation

Typical integration solution



PCI security

Payment processing companies already have well vetted solutions to PCI security.

This means we must match their security requirements.

Bluefin uses two elements:

- HASH to prevent tampering
- SSL to prevent disclosure
- Combine this with the Azure Service Bus and you have a secure and scalable method to post payments

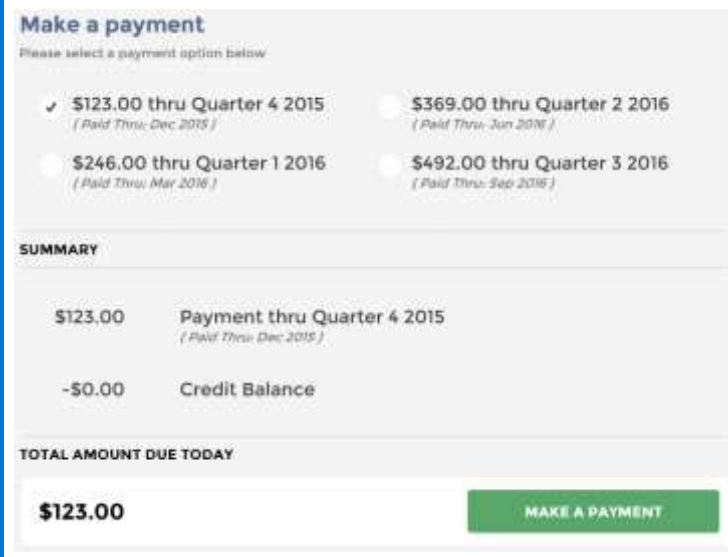
HASH—encrypt me

```
public static string CalculateHash(string sAccount_ID, string sApi_AccessKey,
string sTimeStamp)
{
    SHA256 hhSHA256 = SHA256Managed.Create();
    return ToHex(hhSHA256.ComputeHash(
            Encoding.ASCII.GetBytes(
                sAccount_ID + "," +
                sApi_AccessKey + "," +
                sTimeStamp)
            )
        );
}
```

Show me the code!

PCI security

Payments processing
On-premises tracking
Azure Service Bus Relay



HASH—validate me

```
if (String.Compare(
    certificate.Thumbprint, SFDCClientCertThumprint.Trim(), true) == 0)
{
    result = true;
    sbErrorMessage = "Certificate is valid and allowed.";
}
```

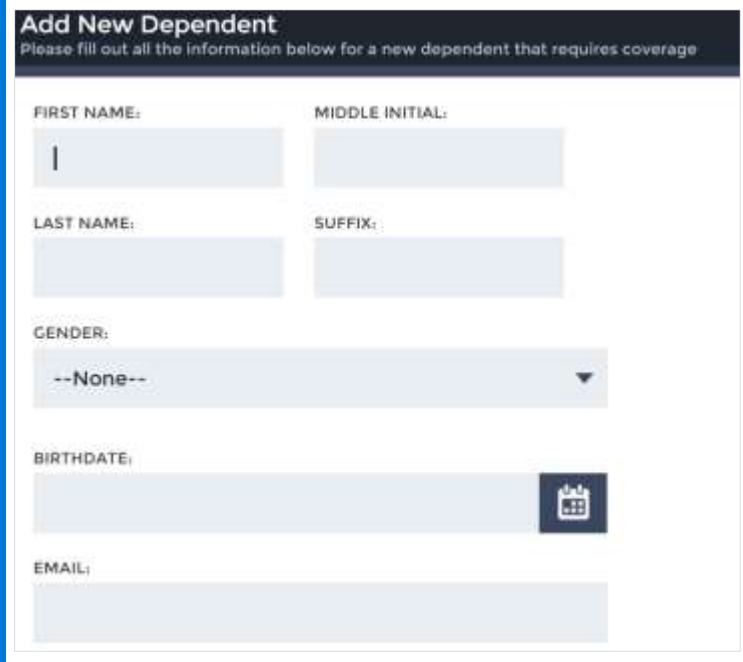
See: How To Configure TLS Mutual Authentication for Web App by Nazim Lala

```
$r = Get-AzureResource -Name "$PubEnv" -ResourceGroupName ($PubEnv + "ResourceGroup") -
ResourceType "Microsoft.Web/sites" -ApiVersion 2015-06-01
$p = $r.properties
$p.clientCertEnabled = $true
$r = Set-AzureResource -Name "$PubEnv" -ResourceGroupName ($PubEnv + "ResourceGroup") -
ResourceType "Microsoft.Web/sites" -ApiVersion 2015-06-01 -PropertyObject $p
```

NEW FEATURE!

HIPAA security

- HIPAA compliance
- Salesforce integration
- Embedded key validation
- SSL Encryption



Access key

```
object AfterReceiveRequest(ref Message rQ, IClientChannel cH, InstanceContext iC)
{
   MessageBuffer mb = rQ);
   XPathNavigator xp = mb.CreateNavigator();
   if (xp.SelectSingleNode(xPath).Value != expectedValue)
      throw new AddressAccessDeniedException("Access Denied”);
   rQ = mb.CreateMessage();
   return true;
}
```

Recap objectives

Azure provides deep and flexible tooling for security

Security requirements abound, be sure to comply

The ability to block at the boundaries simplifies security of the enterprise