F5 202: Pre-Sales Fundamentals

v3 TMOS v13.1

CERTIFICATION PREP

Mickey Woods

Channel Solutions Engineer, East & Canada – F5 Networks

m.woods@f5.com

Special guests: Patrick Osewalt, Sr. Field Systems Engineer – F5 Networks

Leif Rasmussen, Sr. Strategic Partner Engineer – F5 Networks

Ted Byerly, Channel Solutions Engineer – F5 Networks

Orlando Santiago, Channel Solutions Engineer – F5 Networks

May 2020

F5 Certification Exams

CSE — Solutions Expert

Security Solutions 401	Future Cloud	Future Enterprise	Future Exams

CTS — Technology Specialist

| LTM Specialist (b) 301b | | | | |
| LTM Specialist (a) 301a | DNS Specialist 302 | ASM Specialist 303 | APM Specialist 304 | Future Exams |

CA — Administrator   **SP** — Sales Professional

TMOS Administration 201	Future Exams	Pre-Sales Fundamentals 202

Application Delivery Fundamentals 101

F5 202 Pre-Sales Fundamentals
Exam 202 Blueprint

f5 | Partner Central

PRODUCTS   KEY SALES PLAYS   LEARNING   MARKETING   PROGRAM

LEARNING
Certification

Get ahead with F5 Certifications

Becoming an F5 Certified professional validates your technical skills and expertise in application delivery networking. F5 certifications give you a high-quality, credible way to showcase and leverage your advanced knowledge with customers.

Learn more about the F5 Certification Program

https://partners.f5.com/learning/certification

202 PRE-SALES FUNDAMENTALS
EXAM BLUEPRINT

ABOUT THE 202 PRE-SALES FUNDAMENTALS EXAM.

The 202 Pre-Sales Administration exam is the second exam required to achieve F5 Certified! Technical Professional, Sales (F5-CTP, Sales) status.

The Pre-Sales Fundamentals exam identifies individuals who have the skills and understanding necessary for technical selling of F5 solutions. They will likely be a sales engineer with a proven track record of successfully selling F5 solutions and typically have two years of sales experience. The Certified Technical Professional in Sales should have a working understanding of F5 solutions and the ability to articulate its value to customers and prospective customers.

WHAT IS THE 202 PRE-SALES FUNDAMENTALS EXAM BLUEPRINT?
F5 Certified Exam Blueprints list all the objectives an exam has to measure, much like a syllabus for the exam itself. The blueprint provides the detailed breakdown of candidate skills and knowledge. Blueprints can be used to identify additional study, and are best used in conjunction with the Exam Study Guides.

PREREQUISITE:
101 Application Delivery Fundamentals

CREDENTIAL AWARDED:
F5 Certified! Technical Professional, Sales (F5-CTP, Sales).

THIS EXAM IS BASED ON v13.1

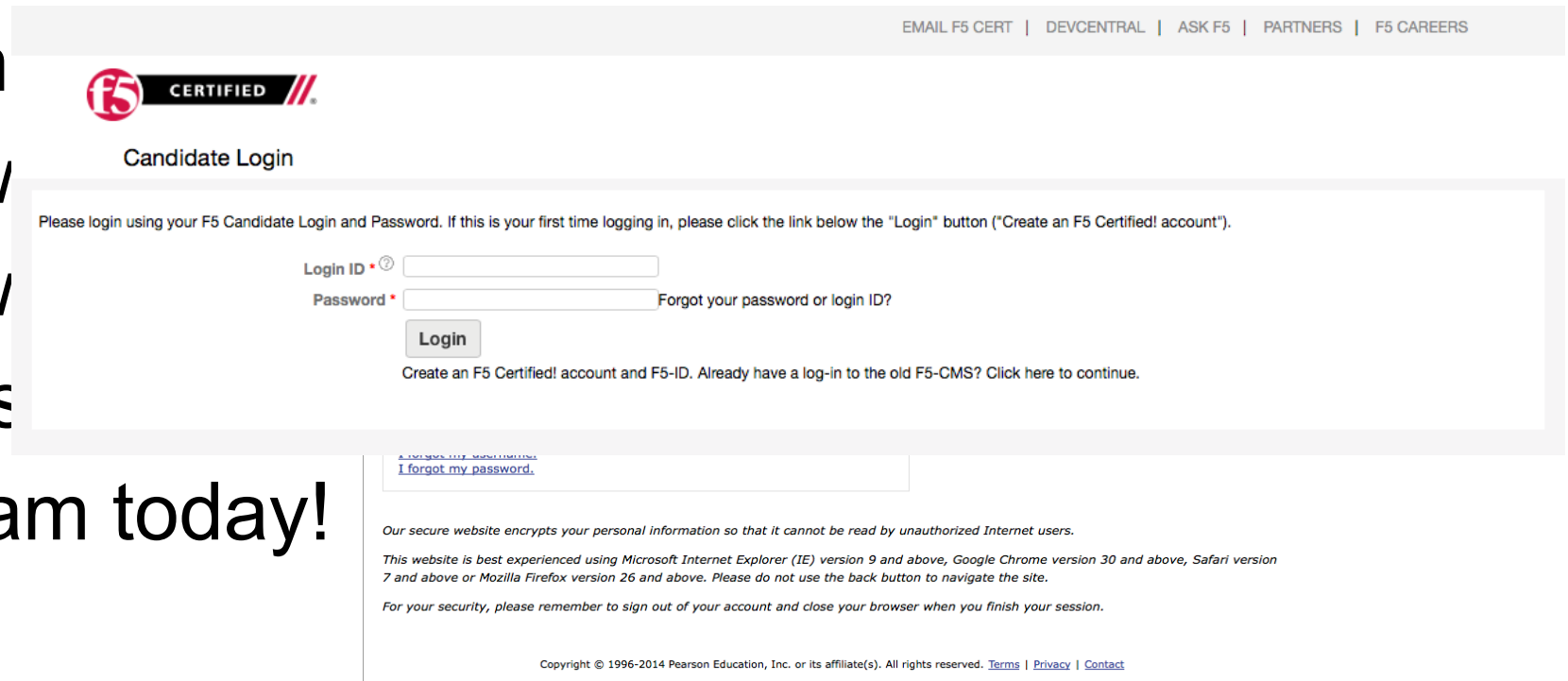CERTIFIED
CTP
f5

Exam Structure

- TMOS 13.1
- Multiple Choice (there are NO True/False questions!)
- Not Adaptive
- 80 questions in 90 mins
- No command line engines
- View whole exhibit before you close them
- Manage Your Time!
- You can flag, review and re-answer questions (within the 90-minute test limit)

- Secure Sauce (exam tips) at the end of the presentation!

F5 Exams: Multiple Attempt Rules!

- After first failure, you must wait 15 days to re-test

- After second failure, you must wait 30 days to re-test

- After third failure, you must wait 45 days to re-test

- After fourth failure, you must wait 1 calendar year to re-test

F5 Candidate Registration

- Certification.f5.com
- Click link below login button to Create and Account
- Fill out the form
- Receive email v
- Receive email v
- Follow email ins
- Register for exam today!

The F5 Pre-Sales Fundamentals Exam 202

- The F5 Pre-Sales Fundamentals Exam is focused on assessing a Sales Architect/Engineer's knowledge of sales motions and sales positioning of F5 products.

- This exam identifies individuals who have the skills and understanding necessary for technical selling of F5 solutions.

- They will likely be a sales engineer with a proven track record of successfully selling F5 solutions and typically have two years of sales experience.

- The Sales Professional should have a working understanding of F5 solutions and the ability to articulate its value to customers and prospective customers.

Other Certification Resources

- **202 study guide found here: https://support.f5.com/csp/article/K29900360**

- **You should have a F5 DevCentral account https://devcentral.f5.com**

- **You should have an F5 Partner Account https://partners.f5.com**

You should have access to LearnF5.com – getting started series, important!

- **LinkedIn**
- F5 Certified Professionals   https://www.linkedin.com/groups/85832
- LinkedIn – F5 Certified! – 101   https://www.linkedin.com/groups/6711359/profile
- LinkedIn – F5 Certified! – 201   https://www.linkedin.com/groups/6709915/profile

Available F5 practice exams

Logged in as: F50000092128

Candidate Name: Mickey Woods

Dashboard   My Account   Shop Front   Logout

f5 certified   **Practice Exam Store**   EXAM STUDIO

Select an exam to purchase and agree to the terms and conditions. Click "Checkout Now" button to purchase the selected exam.

	Exam Name	Description	Price
☐	101 Application Delivery Fundamentals Practice x1	1 attempt within 30 days of purchase, USD	25.00
☐	101 Application Delivery Fundamentals Practice x2	2 attempts within 90 days of purchase, USD	40.00
☐	201 TMOS Administration Practice x1	1 attempt within 30 days of purchase, USD	25.00
☐	201 TMOS Administration Practice x2	2 attempts within 90 days of purchase, USD	40.00
☐	202 Pre-Sales Fundamentals Practice x1	1 attempt within 30 days of purchase, USD	25.00
☐	202 Pre-Sales Fundamentals Practice x2	2 attempts within 90 days of purchase, USD	40.00
☐	301a BIG-IP LTM Specialist: Architect Setup and Deploy Practice x1	1 attempt within 30 days of purchase, USD	25.00
☐	301a BIG-IP LTM Specialist: Architect Setup and Deploy Practice x2	2 attempts within 90 days of purchase, USD	40.00
☐	301b BIG-IP LTM Specialist: Maintain and Troubleshoot Practice x 1	1 attempt within 30 days of purchase, USD	25.00
☐	301b BIG-IP LTM Specialist: Maintain and Troubleshoot Practice x 2	2 attempts within 90 days of purchase, USD	40.00
☐	302 BIG-IP DNS Specialist Practice x1	1 attempt within 30 days of purchase, USD	25.00
☐	302 BIG-IP DNS Specialist Practice x2	2 attempts within 90 days of purchase, USD	40.00
☐	303 BIG-IP ASM Specialist Practice x1	1 attempts within 30 days of purchase, USD	25.00
☐	303 BIG-IP ASM Specialist Practice x2	2 attempts within 90 days of purchase, USD	40.00
☐	304 BIG-IP APM Specialist Practice x1	1 attempt within 30 days of purchase, USD	25.00
☐	304 BIG-IP APM Specialist Practice x2	2 attempts within 90 days of purchase, USD	40.00

Discount Voucher [   ]

F5 online partner training resources

GETTING STARTED SERIES

Section 1: Discovery

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Objective 1.01

Visit corporate website to gather information

Corporate Information

- Investor Relations, Board of Directors, Press Releases, Acquisitions, Blogs, RSS Feeds

Social Media Sites

- LinkedIn, FaceBook, Twitter, AngelList (http://www.angel.co) good for startup info

Job Postings (a customers upcoming projects can be very revealing!)

- Check the customer's career page to see what job role is in high demand

https://clouddocs.f5.com/training/community/f5cert/html/class4/modules/module1.html#section-1-discovery

Objective 1.02

Determine corporate challenges

Understanding the implications of the challenges that a customer/company is facing will help you pick the correct solution for that customer/company

- Cloud challenges

- Compliancy

- Business drivers

- Organizational structure

https://clouddocs.f5.com/training/community/f5cert/html/class4/modules/module1.html#section-1-discovery

Objective 1.03

Associate customer requirements to F5 solutions

- Align potential F5 solutions to business and technical projects

- Understanding the problems our products can solve will allow you to go deeper in the account with F5 products.

- You will need to know all our products and the problems they can solve

- F5 solutions can be leveraged with multiple projects and lead to significant revenue growth

- https://www.f5.com/solutions

- https://partners.f5.com/solutions

Section 2: Education

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Objective 2.01

Educate/present on technical capabilities of F5 solutions

- F5 BIG-IP

- F5 Local Traffic Manager (LTM)

- F5 BIG-IP DNS

- F5 Advanced Firewall Manager (AFM)

- F5 Application Security Manager (ASM); Advanced WAF!

- F5 Access Policy Manager (APM)

- F5 Secure Web Gateway (SWG)

- F5 IP Intelligence

- https://clouddocs.f5.com/training/community/f5cert/html/class4/modules/module2.html

F5- Full Proxy

Client		Client
Web application	Application health monitoring and performance anomaly detection	Web application
Application	HTTP proxy, HTTP DDoS and application security	Application
Session	SSL inspection and SSL DDoS mitigation	Session
Network	L4 Firewall: Full stateful policy enforcement and TCP DDoS mitigation	Network
Physical		Physical

TMOS
Traffic **M**anagement **O**perating **S**ystem

F5 Platform

LTM | AFM | APM | ASM | AAM | FPS | DNS | CGNAT | AVR | PEM | SWG | LC

TMOS

VIRTUAL EDITION	STANDARD EDITION
PUBLIC CLOUD (AWS, Azure)	**PRIVATE CLOUD** (VMWare, Hyper-V)	**vCMP**
		BIG-IP Platforms & VIPRION Chassis
COMMODITY HARDWARE	F5 CUSTOM HARDWARE

Objective 2.01

Local Traffic Manager (LTM) – "Good"

- Ensure fast, reliable, and secure applications with L4-L7 application services

- Improve efficiency through automation and customize with programmability

- Protect data and eliminate blind spots with SSL visibility and control

- Flexible architecture to adapt to shifting business, performance, and application needs
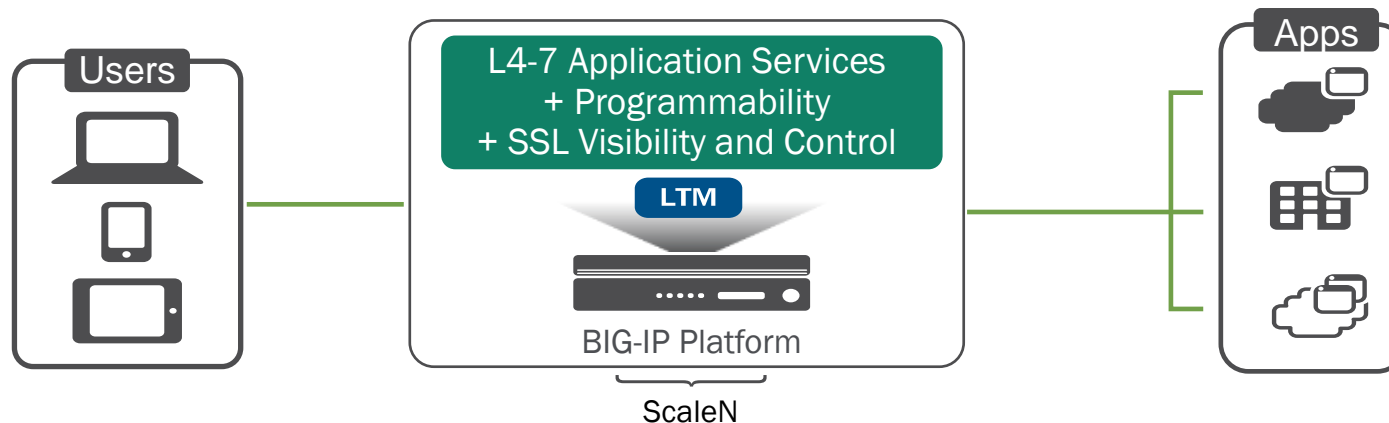
Deliver Applications Reliably

Automate and Customize

Secure Applications

Transition to SDN

Users

L4-7 Application Services
+ Programmability
+ SSL Visibility and Control

LTM

BIG-IP Platform

ScaleN

Apps

Objective 2.01

BIG-IP DNS (Formerly Global Traffic Manager (GTM)) – "Better"

- Intelligent DNS - Resolve DNS Queries to Best Answer
- Accelerated DNS - DNS Express
- Secure DNS – DNSSEC support and DDOS protection

www.f5.com = ?
65.197.145.183

www.f5.com = ?
143.166.83.200

Data Center A

Data Center C

GTM

Data Center B

BIG-IP
Platform

207.46.134.222

65.197.145.183

143.166.83.200

Company Data Centers and Servers
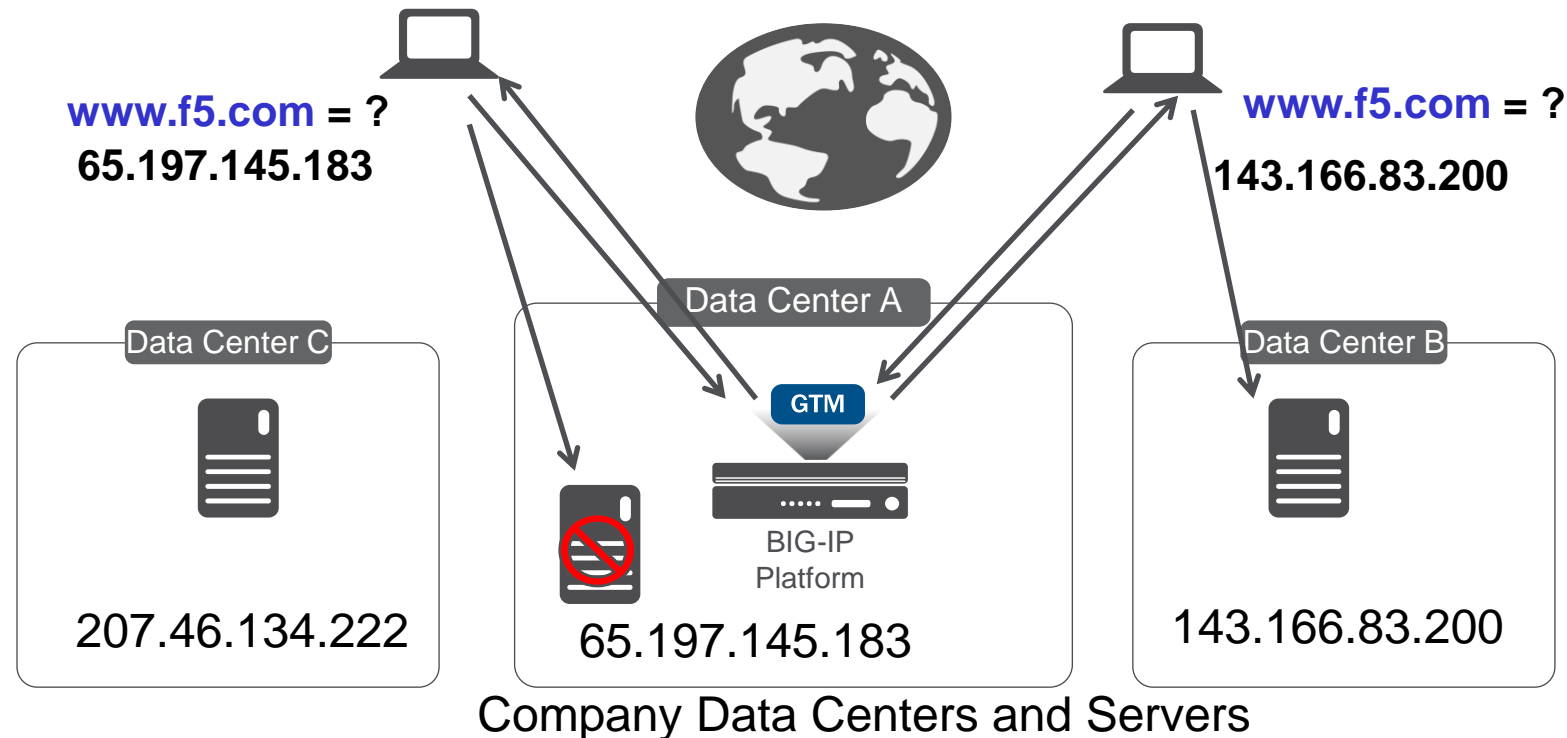
Objective 2.01

Advance Firewall Manager (AFM) – "Better"

Is a high-performance, stateful, full-proxy network security solution designed to guard data centers against incoming threats that enter the network on the most widely deployed protocols.

- L4 stateful full proxy firewall
- IPsec, NAT, advanced routing, full SSL, AVR, PSM
- Scale to meet network demand
- Ensure application availability during DDoS attacks
- Protect with app-centric, full-proxy firewall capabilities
- Inspect SSL sessions
- Streamline firewall deployment
- Customize reporting for visibility

Objective 2.01

## Application Security Manager (ASM) – "Best"

- Highest scaling & most flexible web application firewall with transparent protection from ever-changing threats

- Secures against the OWASP top 10 threats and ensures compliance

- Industries best automated attack (bot) safeguards

- Leading DAST integration & virtual patching to reduce risks from vulnerabilities

- Deploys as a full proxy or transparent full proxy (bridge mode)

Vulnerable application

Request adem

Secure response delivered

Dynamic Multi-Layered Security

BIG-IP ASM applies security policy

LTM   ASM

BIG-IP ASM security policy checked

- Drop, block or forward request
- Application attack filtering & inspection
- SSL, TCP, HTTP DoS mitigation
- Response inspection for errors and leakage of sensitive information

Server response generated

Objective 2.01

Access Policy Manager (APM) – "Best"

- Industry's most scalable access gateway

- Consolidates secure remote access (SSL VPN), Web access management, enterprise mobility management, SSO/identity federation and secure web gateway in a single platform

- Protects against data loss, virus infection, and rogue device access

- Replaces web access proxy tiers for common applications reducing infrastructure and management costs
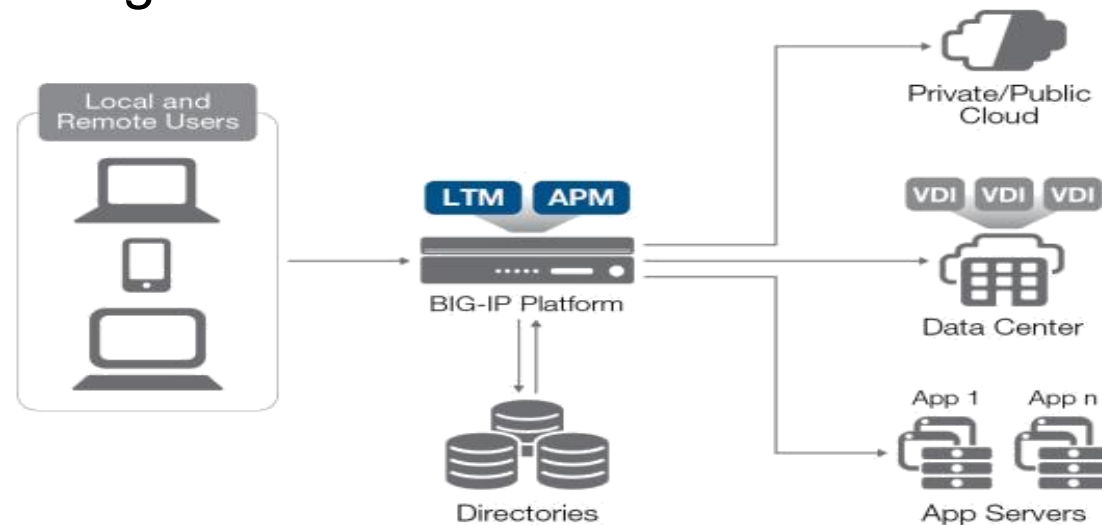
Context-aware policy enforcement

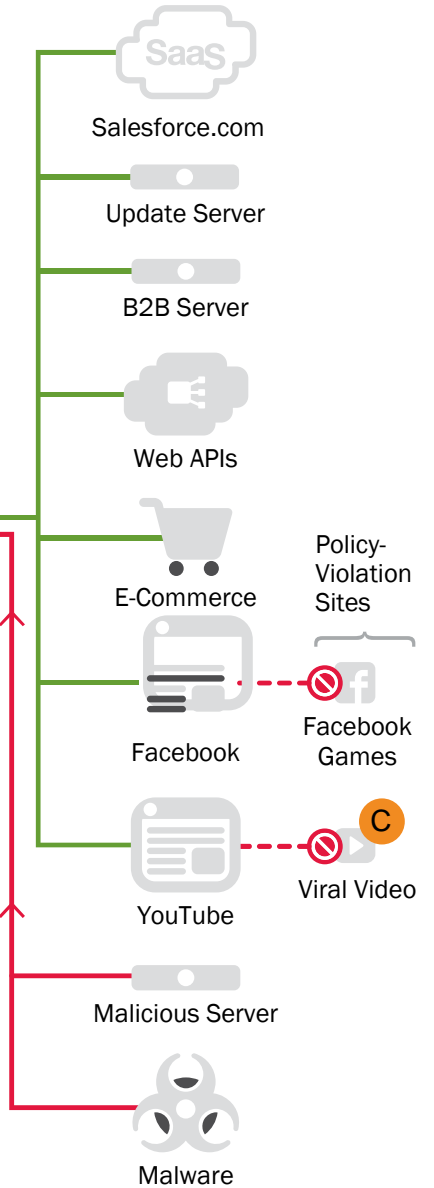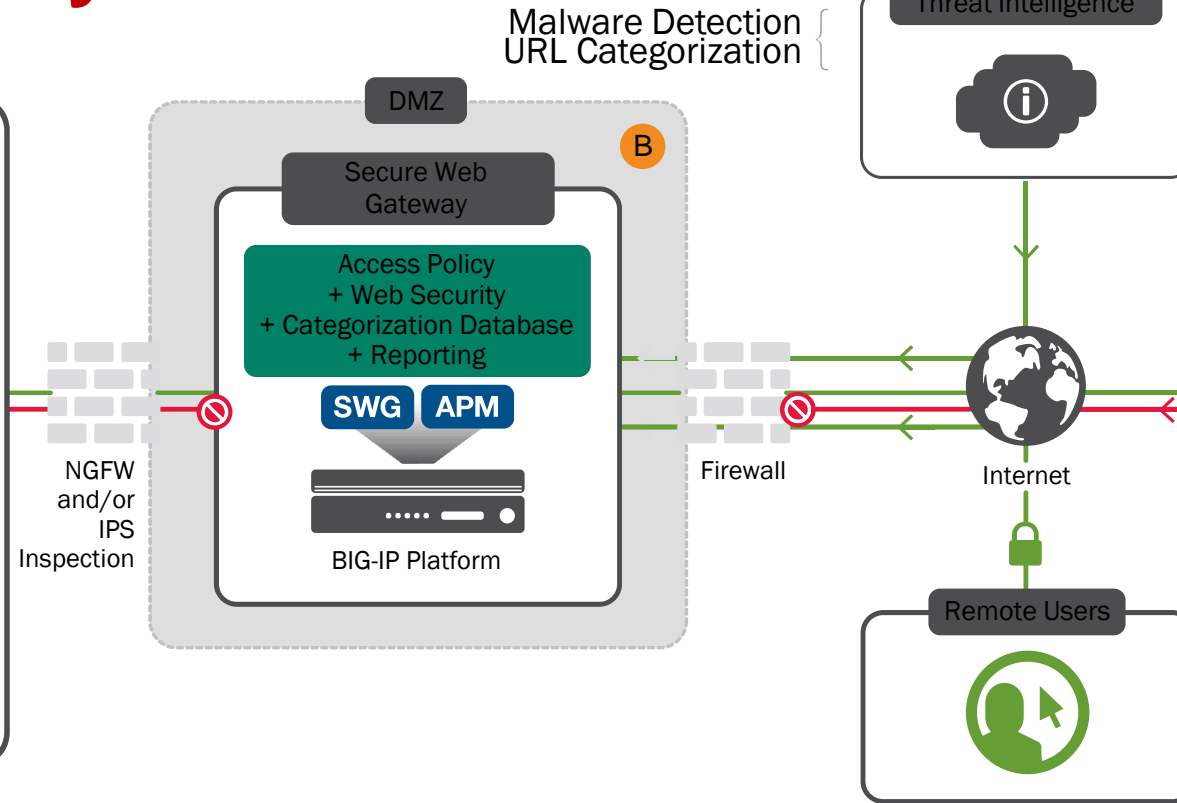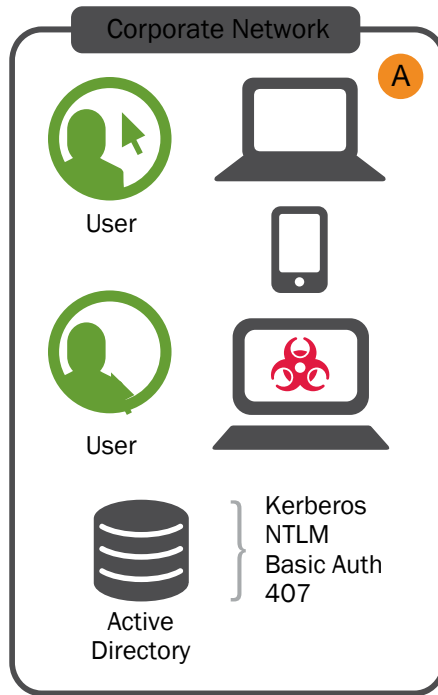*Scalability and performance*

Access control over third-party SaaS
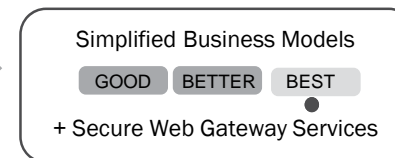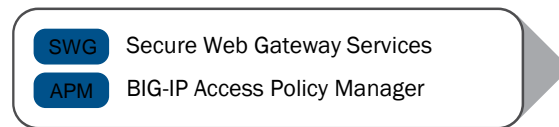
Simplified policy management

Objective 2.01
Secure Web Gateway – "SKU"

- **Integration with corporate directory for user identification**
- **URL categorization/filtering**
- **Malware scanning**
- **SSL interception**
- **Federated Single Sign-On (SSO)**

Customer Scenarios
- **A** Context-Aware Web Security
- **B** Acceptable Use Policy Controls
- **C** Bandwidth Controls

Corporate Network — **A**

User

User

Kerberos
NTLM
Basic Auth
407

Active Directory

NGFW and/or IPS Inspection

DMZ — **B**

Secure Web Gateway

Access Policy
+ Web Security
+ Categorization Database
+ Reporting

SWG   APM

BIG-IP Platform

Firewall

Malware Detection
URL Categorization

Cloud-Based Threat Intelligence

Internet

Remote Users

SWG   Secure Web Gateway Services
APM   BIG-IP Access Policy Manager

Simplified Business Models
GOOD   BETTER   BEST

+ Secure Web Gateway Services

SaaS
Salesforce.com

Update Server

B2B Server

Web APIs

E-Commerce

Facebook

Policy-Violation Sites

Facebook Games

YouTube

Viral Video — **C**

Malicious Server

Malware

Objective 2.01
IP Intelligence Reputation Service – "SKU"
Identify and allow or block IP addresses with malicious activity

Botnet

IP Intelligence Service

IP address feed
updates every 5 min

Attacker

Custom
Application

Anonymous
requests

Financial
Application

BIG-IP System

Anonymous Proxies

Geolocation database

Scanners

Internally infected devices
and servers
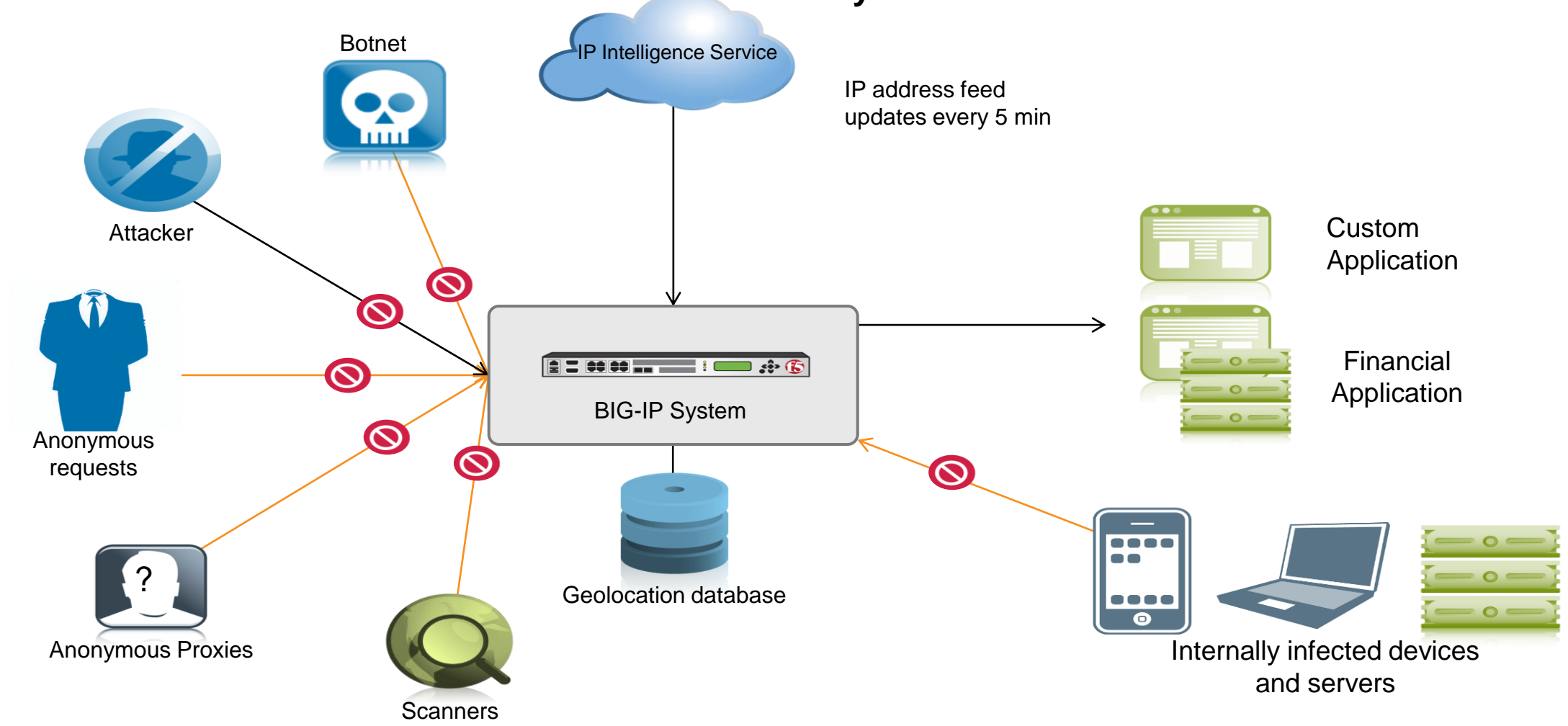
Objective 2.01

Web Safe (Data Safe) – "SKU"

Delivers web fraud protection that safeguards banks, e-retailers, and other organizations exposed to online fraud.

- Guard against targeted and generic malware

- Preempt phishing attacks

- Protect without client downloads

- Easily deploy fraud detection and prevention

- Maintain up-to-date global threat intelligence

Objective 2.01

Present F5 overview, key F5 messaging, training options, value of F5 to a non-technical audience

F5 Overview – SSL Orchestrator

- Maximize infrastructure investments, efficiencies, and security with dynamic, policy-based decryption, encryption, and traffic steering through multiple inspection devices. Over 80% of page loads are encrypted with SSL/TLS. Attackers commonly use encryption to hide malicious payloads. If you're not inspecting SSL/TLS traffic, you will miss attacks, and leave your organization vulnerable. SSL Orchestrator provides robust decryption/encryption of SSL/TLS traffic.

Objective 2.01

Present F5 overview, key F5 messaging, training options, value of F5 to a non-technical audience

F5 Overview – DDoS Hybrid Defender

- Get comprehensive DDoS protection for your network and at the application layer with flexibility and scale for inline, out-of-band, and hybrid deployments. DDoS Hybrid Defender is the only multi-layered defense that protects against blended network attacks and sophisticated application attacks, while enabling full SSL decryption, anti-bot capabilities, and advanced detection methods—all in one appliance.

Objective 2.01

Present F5 overview, key F5 messaging, training options, value of F5 to a non-technical audience

F5 Overview – BIG-IQ Centralized Manager

- BIG-IQ Centralized Management provides a central point of control for F5 physical and virtual devices. It simplifies management, helps ensure compliance, and gives you the tools you need to deliver your applications securely and effectively.

Objective 2.01

Reference Architectures

The F5 Resources page has a ton of useful material from customer stories to recommended practice guides. You will also find reference architectures in the white papers section. Below are links to just a couple of the reference architectures you should review. .
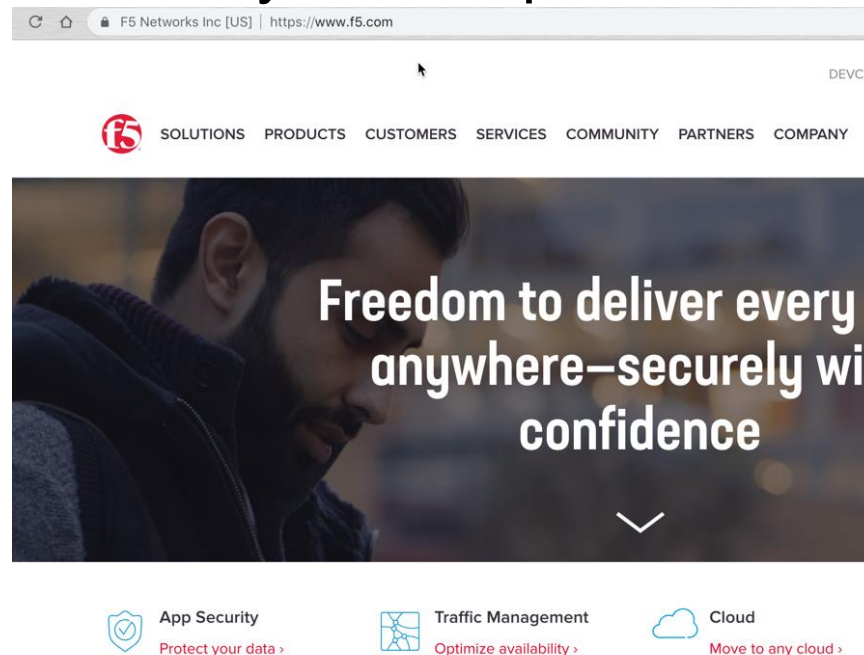
https://www.f5.com/services/resources

- Intelligent DNS Scale Reference Architecture

- SSL Reference Architecture

- Many others..

Objective 2.02 – Gather resources!

To replicate F5 technical demonstrations

F5 Website – https://www.f5.com

- Get the detailed information you need on F5 products. Datasheets include features, specifications, system requirements, and more.

Objective 2.02
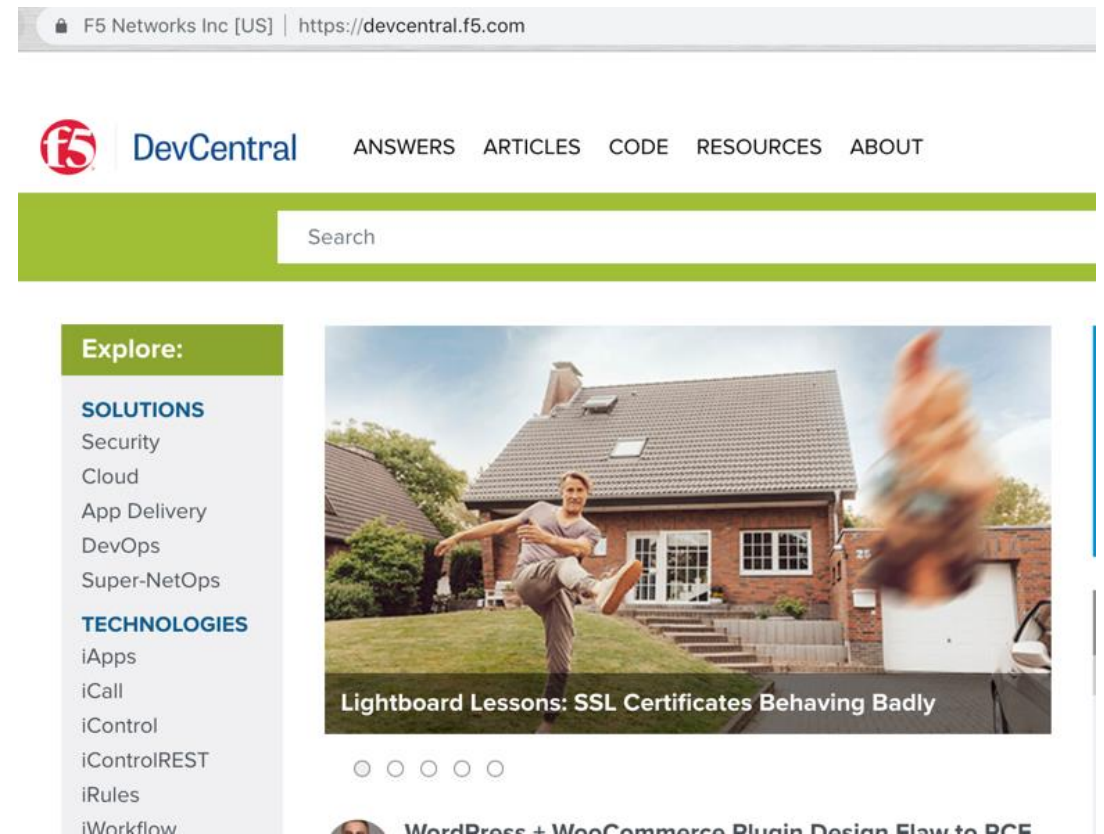
F5.com, DevCentral, support.f5.com, GitHub, VLAB

DevCentral
https://devcentral.f5.com

- Learn F5 Technologies, Get Answers & Share Community Solutions. DevCentral is a source for tools, techniques, and collaboration to help you build solutions with iControl, iCall, iApps and iRules that enable applications to work in concert.
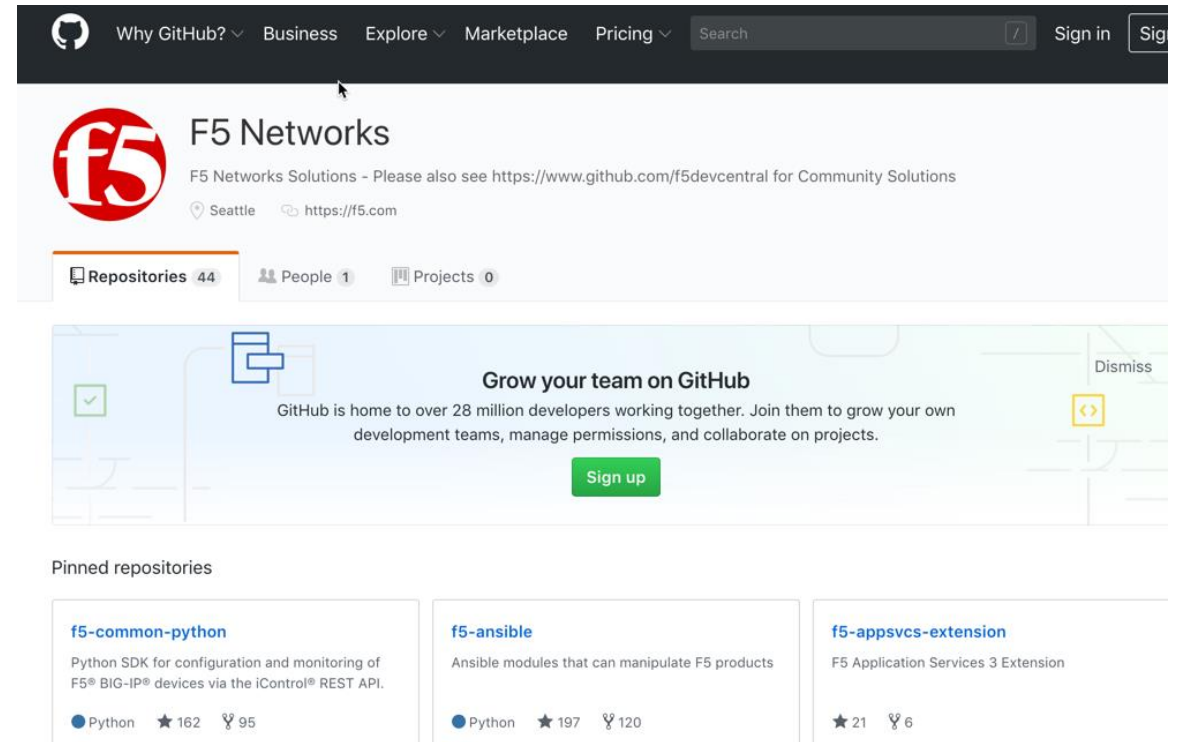
Objective 2.02

Identify valuable technical resources (F5.com, DevCentral, Askf5.com, GitHub, VLAB)

Github

- To support the development community, F5 may post open source software to an F5-specific GitHub community located at https://github.com/F5Networks. These repositories support Automation and Orchestration efforts for BIG-IP in Private and Public clouds.

Objective 2.02

Identify valuable technical resources (F5.com, DevCentral, Askf5.com, GitHub, VLAB)

Virtual Lab Environment (vLab)

- Partners may download vLab environment to demonstrate BIG-IP features on their laptop or work/personal lab environment.

- https://downloads.f5.com/

Objective 2.03

Articulate key values of F5 solutions

- **F5 Sales Plays**
  - designed to help our Channel Partner's position F5 solutions for a specific customer need
  - https://partners.f5.com/solutions/f5-sales-plays

- **F5 Sales Accreditation**
  - The F5 Sales Accreditation for technical and sales roles is the first step in becoming fluent in F5 solutions and technologies and understanding how to bring them to your customers.
  - Log into learnf5.com and complete **F5 Sales Accreditation - Technical Roles (4 hours)**

Objective 2.03

Match products, features, solutions, to customer initiatives or requirements

- You need to be able to educate the customer on what problems our products solve

- **https://partners.f5.com/solutions**

Objective 2.04

Distinguish architectural considerations that may affect the F5 solution

- **Determine cloud strategy**

  - Use F5 virtual edition (VE) to keep application services consistent
    - https://www.f5.com/solutions/cloud

- **Determine security challenges**
  - Use F5 security products (not native cloud provider tools) for greater security of your applications
  - https://www.f5.com/solutions/cloud/public-cloud

Objective 2.04

Determine cloud strategy

Consistent Application Services

- Get consistent app services in any cloud. F5 ensures apps are secure and available, in any infrastructure. You can apply the same enterprise-grade load balancing, DNS services, web application firewalls, access control, application-level security, and policy management found in on-premises environments
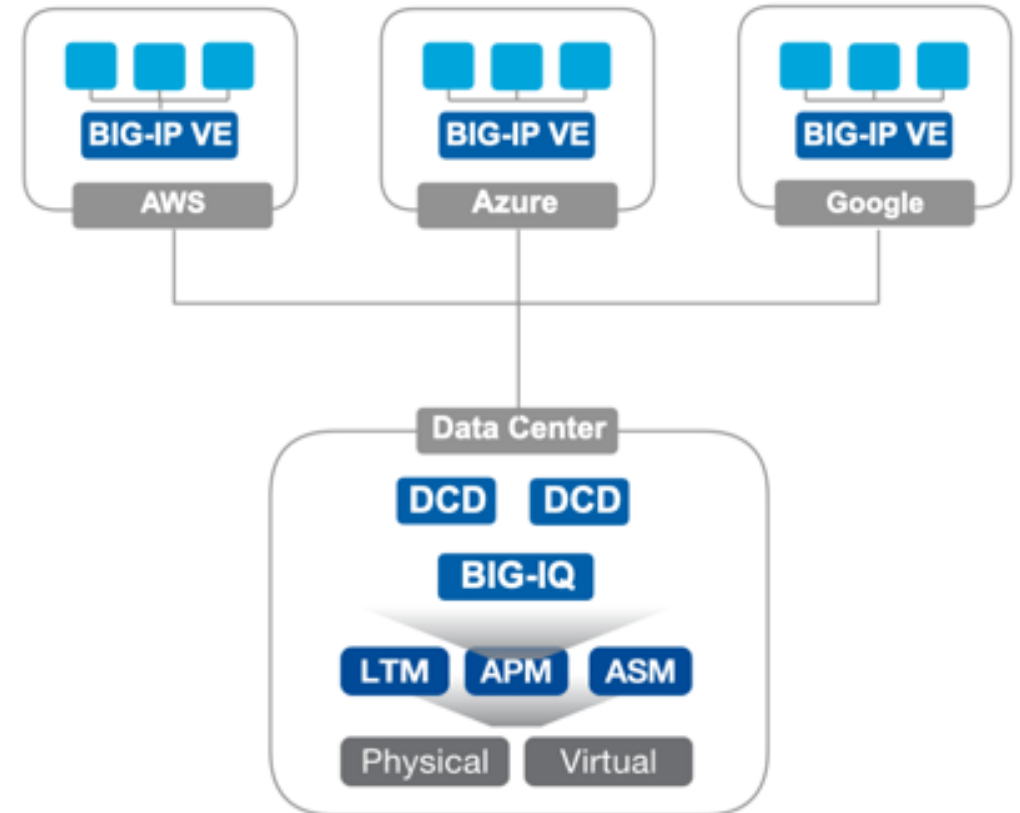
Objective 2.04

Determine security constraints

Public Cloud Shared Security

- Public CSPs guarantee the security of the infrastructure, but application owners are responsible for the security of their applications and data. This means that Cloud infrastructure may be secure, but customer's data and applications are not protected by the CSP. There is still a need for application services in the Cloud.

This is a diagram of the AWS shared security model.

CUSTOMER

RESPONSIBILITY FOR SECURITY 'IN' THE CLOUD

CUSTOMER DATA

PLATFORM, APPLICATIONS, IDENTITY & ACCESS MANAGEMENT

OPERATING SYSTEM, NETWORK & FIREWALL CONFIGURATION

CLIENT-SIDE DATA ENCRYPTION & DATA INTEGRITY AUTHENTICATION | SERVER-SIDE ENCRYPTION (FILE SYSTEM AND/OR DATA) | NETWORKING TRAFFIC PROTECTION (ENCRYPTION, INTEGRITY, IDENTITY)

AWS

RESPONSIBILITY FOR SECURITY 'OF' THE CLOUD

HARDWARE/AWS GLOBAL INFRASTRUCTURE

REGIONS | AVAILABILITY ZONES | EDGE LOCATIONS

SOFTWARE

COMPUTE | STORAGE | DATABASE | NETWORKING

Objective 2.04

Determine management and orchestration

F5 BIG-IQ Centralized Management

- Provides a central point of control for F5 physical and virtual devices and for the solutions that run on them. It simplifies management, helps ensure compliance, and gives you the tools you need to deliver your applications securely and effectively.

- BIG-IQ manages policies, licenses, SSL certificates, images, and configurations for F5 devices and for the following F5 modules:

Objective 2.04

Determine management and orchestration

Super-NetOps
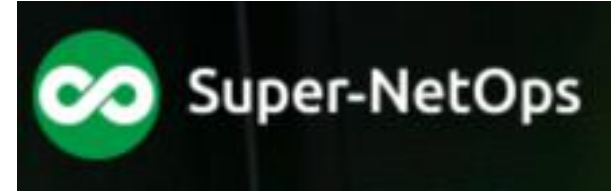
NetOps, Super-NetOps, DevOps

- Super-NetOps self-pace curriculum designed to help previously siloed NetOps and DevOps teams to begin to collaborate and teaches BIG-IP administrators how to standardize services and provide them through automation toolchains, reducing time-to-service from days to minutes.

- Learn the REST API integration with F5 Products

- Integrate F5 products with third party vendors Ansible, Puppet and others

Section 3: Proposal

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Objective 3.01: Recommend F5 solutions: Technical

Determine which application services are needed

User

DDoS Protection

DNS / Global Load Balancer

Firewall / Intrusion Prevention

Traffic Management / Load Balancer

SSL Visibility / Inspection / Analytics

Identity Access / Multi-factor Auth / Single Sign-On

Web Application Firewall / Fraud Prevention

Availability | Performance
Application Services
Protection | Access

Public | Private

Consistent Services
Every App, Anywhere

Objective 3.01

Determine which application services are needed

Traffic Management / Load Balancer /ADC

- ==BIG-IP LTM==: Applications drive innovation and profitability, allowing businesses to leverage trends such as cloud computing, mobility, and software-defined networking (SDN).

- Load balancing helps deliver applications to users in a reliable, secure, and optimized way. They provide the power to simplify, automate, and customize applications faster and more predictably.

- Protect the apps that run your business with industry-leading SSL performance and visibility.

Make applications go faster, smarter and safer!

Optimize access to web applications

https://www.f5.com/pdf/products/big-ip-local-traffic-manager-ds.pdf

Objective 3.01

Determine which application services are needed

DNS / Global Load Balancer

- Global load balancing is used to gain performance and availability of your global applications by sending users to the closest or best-performing physical, virtual, or cloud environment.

- <mark>BIG-IP DNS</mark> provides speed and security and can hyperscale up to 100 million responses per second (RPS) to manage rapid increases in DNS queries.

- BIG-IP DNS handles millions of DNS queries, protects your business from DDoS attacks, and ensures top application performance for users.

(DNS Flood, NXDomain Flood, DNS Amplification)

https://www.f5.com/pdf/products/big-ip-dns-datasheet.pdf

Objective 3.01

Determine which application services are needed

Firewall

- Unlike traditional firewalls, <mark>BIG-IP AFM</mark> is built on the full-proxy architecture of the F5 TMOS operating system. Incoming client connections are fully terminated, inspected for possible security threats, and only then forwarded to the server—assuming no threats are present.

  Built on F5's full-proxy architecture

  In-depth understanding of the most used inbound protocols

https://www.f5.com/pdf/products/big-ip-advanced-firewall-manager-datasheet.pdf

Objective 3.01

Determine which application services are needed

Web Application Firewall / Fraud Prevention

- <mark>BIG-IP ASM</mark>: A web application firewall (WAF) is a special type of application firewall that applies specifically to web applications. It is deployed in front of web applications and analyzes bi-directional web-based (HTTP) traffic - detecting and blocking anything malicious.

- The OWASP provides a broad technical definition for a WAF as "a security solution on the web application level which - from a technical point of view - does not depend on the application itself."

- PCI DSS Information Supplement for requirement 6.6, a WAF is defined as "a security policy enforcement point positioned between a web application and the client endpoint.

http://www.f5.com/pdf/products/big-ip-application-security-manager-ds.pdf

Objective 3.01

Determine which application services are needed

Identity Access / Multi-factor Auth / Single Sign-On

- BIG-IP APM simplifies and consolidates your infrastructure. The flexibility and scalability helps you to combine network access controls, identity federation, SSO, and adaptive authentication into a single application delivery solution.

- Identity federation and single sign-on (SSO)

- SAML 2.0 further enhances BIG-IP APM identity federation and SSO options by supporting connections initiated by both SAML identity providers (IdPs) and service providers

http://www.f5.com/pdf/products/big-ip-access-policy-manager-ds.pdf

Objective 3.01

Determine which application services are needed

DDoS Protection

- Distributed Denial of Service (DDoS) attacks threaten businesses with downtime that can damage their brand and even lead to financial losses. With the many IoT device-powered botnets and for-hire DDoS services, the threat of an attack is greater than ever. F5 provides DDoS protection across the range of attack vectors and at each level of the application.

  (SYN Flood, Memcached Amplification, UDP Flood, IP Fragmentation)

- DDoS Hybrid Defender

- Silverline DDoS Protection

https://www.f5.com/solutions/application-security/ddos-protection

Objective 3.01

Determine licensing needs to meet customer requirements

F5 Licensing Models

- Good, Better, Best

Good | Better | Best: Delivering Greater Customer Value

https://www.f5.com/pdf/licensing/good-better-best-licensing-overview.pdf

Objective 3.01

Determine licensing needs to meet customer requirements

F5 Add- On License Modules

- There are other add-on licensable features beyond GBB. Knowing all the products we offer beyond GBB will help you understand how to best solve customer issues. The list below is just a few.

- IP Intelligence Services: (compliment to BIG-IP AFM)

- Secure Web Gateway: (compliment to BIG-IP APM)

- Web Fraud Protection: https://www.f5.com/pdf/products/websafe-mobilesafe-datasheet.pdf

- CGNAT: https://www.f5.com/pdf/products/big-ip-cgnat-datasheet.pdf

https://www.f5.com/services/resources/datasheets

Objective 3.01

Determine licensing needs to meet customer requirements

F5 Standalone Products

- SSL Orchestrator: https://www.f5.com/pdf/products/ssl-orchestrator-datasheet.pdf

- DDoS Hybrid Defender: https://www.f5.com/pdf/products/ddos-hybrid-defender-for-the-data-center.pdf

- BIG-IQ: www.f5.com/pdf/products/big-iq-datasheet.pdf

Objective – 3.02: Recommend F5 solutions: Business

How can F5 solutions and technology meets the customer's business needs

- Reviewing some of our customer success stories will help you understand the issues and challenges and restrictions our customers use F5 to solve.

- https://www.f5.com/customer-stories

- F5 solution profiles provide a high-level overview of how F5 products and features work together to deliver a complete solution for a technology or for a specific vertical market.

- https://www.f5.com/services/resources/solution-profiles

- F5 partner Sales Plays can provide background on how to position F5 products to solve customer issues.

- https://partners.f5.com/solutions/f5-sales-plays

Objective 3.02

ROI needs, depreciation needs, CapEx

Return On Investment (ROI)

- As companies purchase infrastructure such as F5 BIG-IP platforms to handle all their application services needs, they will weigh the costs of that infrastructure against the benefits that it provides.

Depreciation

- Hardware assets like BIG-IP appliances can be depreciated over time. Depreciation is a method of reallocating the cost of a tangible asset over its useful life span of it being in motion. Businesses depreciate long-term assets for both accounting and tax purposes. The former affects the balance sheet of a business or entity, and the latter affects the net income that they report. Generally, the cost is allocated, as depreciation expense, among the periods in which the asset is expected to be used.

CapEx (Capital Expense)

- The money a company spends to buy, maintain, or improve its fixed assets, such as buildings, vehicles, IT equipment, land and other assets. For tax purposes, capex is a cost that cannot be deducted in the year in which it is paid or incurred and must be capitalized.

Objective 3.02

OpEx, payment delivery timeframe

OpEx (Operational Expense)

- As companies purchase infrastructure such as F5 BIG-IP platforms to handle all of their application services needs, they will weigh the costs of that infrastructure against the benefits that it provides

Payment delivery timeframe

- Businesses, regardless of the industry or size, require regular cash flow from their clients and the customer to pay their expenses, such as their employees' salaries and the utilities. That's why invoicing is a necessity. Without these bills, you won't be compensated for the services rendered or products sold, which in turn means that you won't be able to handle your expenses.

Objective 3.03: Justify F5 product choice

Answer technical queries regarding a proposed F5 solution

Product selection and sizing (examples)

- Considerations: BIG-IP VE license limits
- SSL TPS licensing limits
- APM platform session capacity
- vCMP guest memory/CPU core allocation matrix
- BIG-IP traffic throughput

Product Justification

Learning which F5 products can work together to solve the problems the most cost-effective way is a very important part. Understanding that bundling products via licensing or even deploying a product as a stand-alone instance may be the best for the customer's scenario.

Objective 3.03

Distinguish F5 products from competition

- Most of the time it is best as a customer's trusted advisor to not attack F5's competition and try to make claims on what they can't do.

- It is always a better approach to explain how we can effectively solve the problems or issues they are facing.

Section 4: Supporting the Close

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Objective 4.01: Supporting the Close

Gather appropriate information to size F5 solutions

- How many F5 devices do you need?

- How much capacity will a customer will need based on throughput, planning for growth?

- Is there a need for redundancy such as Active/Standby, Scale N+1?

- Is there a FIPS compliance requirement?

- Will this solution require an F5 virtual environment?

- What this solution require an F5 hardware environment?

- Will this solution be premise based, cloud based or a combination of the two?

Objective 4.01: Supporting the close

Determine high availability options

F5's ScaleN Technology
Elastic, App-Aware, and Multi-Tenant Infrastructure

On-Demand Scaling

VE VE VE
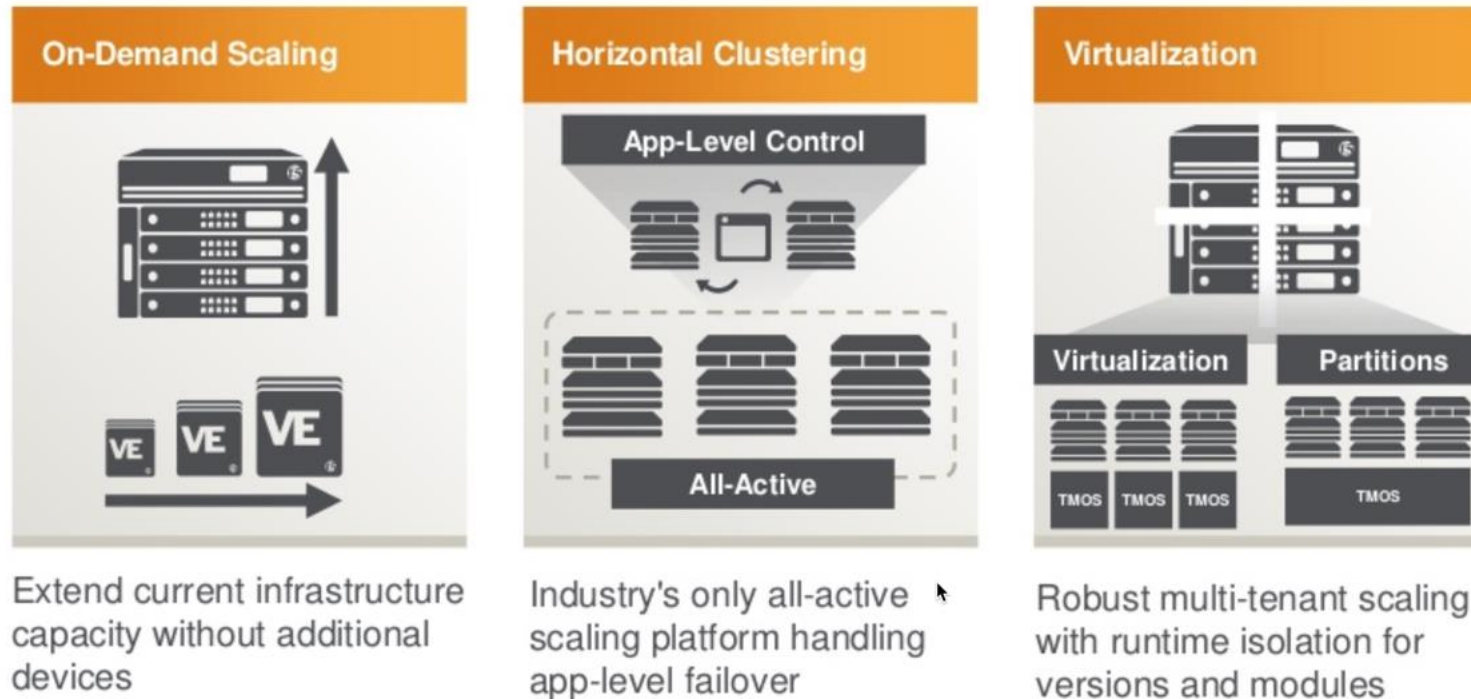
Extend current infrastructure capacity without additional devices

Horizontal Clustering

App-Level Control

All-Active

Industry's only all-active scaling platform handling app-level failover

Virtualization

Virtualization | Partitions

TMOS TMOS TMOS | TMOS

Robust multi-tenant scaling with runtime isolation for versions and modules
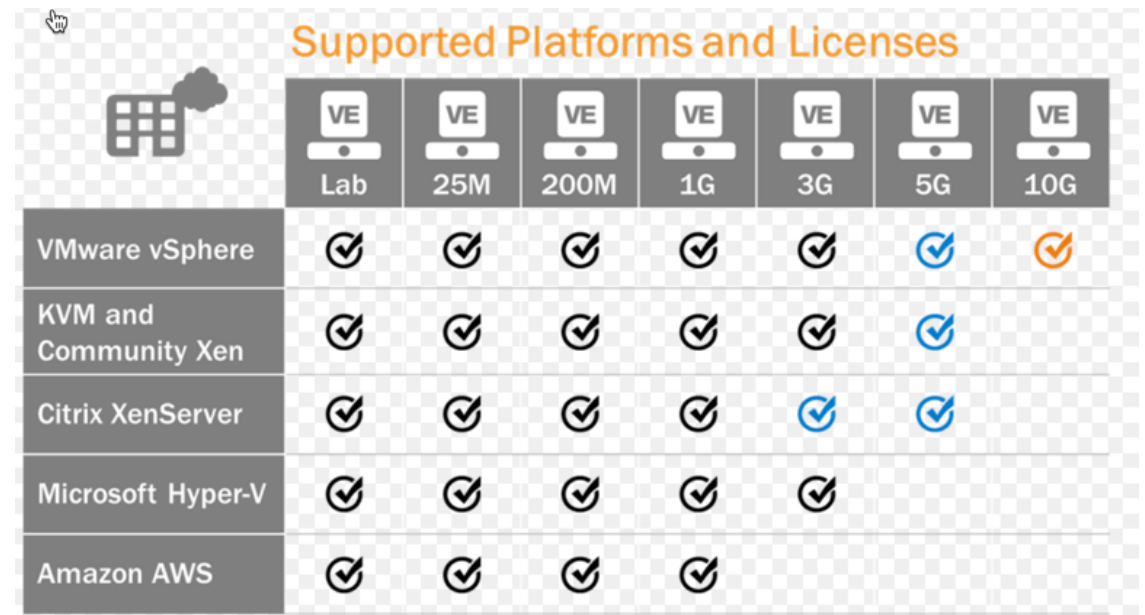
- Eliminate costly over-provisioning
- Improve resource utilization
- Consolidate with shared infrastructure

Objective 4.01: Supporting the close

Determine virtual environment details

F5 Virtual Edition Supported Platforms

- Each customer may have different virtualization environments within their data centers, private cloud or even different public clouds which each have their own hypervisors.

- F5 virtual editions can run on many different versions of hypervisors. You should be aware of our flexibility.

Supported Platforms and Licenses

	VE Lab	VE 25M	VE 200M	VE 1G	VE 3G	VE 5G	VE 10G
VMware vSphere	✓	✓	✓	✓	✓	✓	✓
KVM and Community Xen	✓	✓	✓	✓	✓	✓	
Citrix XenServer	✓	✓	✓	✓	✓	✓	
Microsoft Hyper-V	✓	✓	✓	✓	✓		
Amazon AWS	✓	✓	✓	✓			

Objective 4.01: Supporting the close

Determine virtual environment details

F5 vCMP

- Virtual Clustered Multiprocessing (vCMP) allows a BIG-IP system to run multiple instances of BIG-IP software on a single hardware platform. The vCMP host (hypervisor) can allocate a specific amount of hardware resources to each vCMP guest (instance).

- Big-IP iSeries with x800 numbering support vCMP. The F5 i5800 supports vCMP feature.

- For example no physical differences between the lower iSeries model and the higher model (i.e. i5600 and i5800).

- If a customer buys an i5600 and later wants to upgrade to an i5800, it can be done without a forklift upgrade of hardware by applying the upgrade license.

Guest 1	Guest 2	Guest 3	Guest 4
• LTM • GTM • ASM	• LTM • GTM	• LTM • GTM • AFM	• LTM
TMOS	TMOS	TMOS	TMOS
vCMP Host			
Hardware			
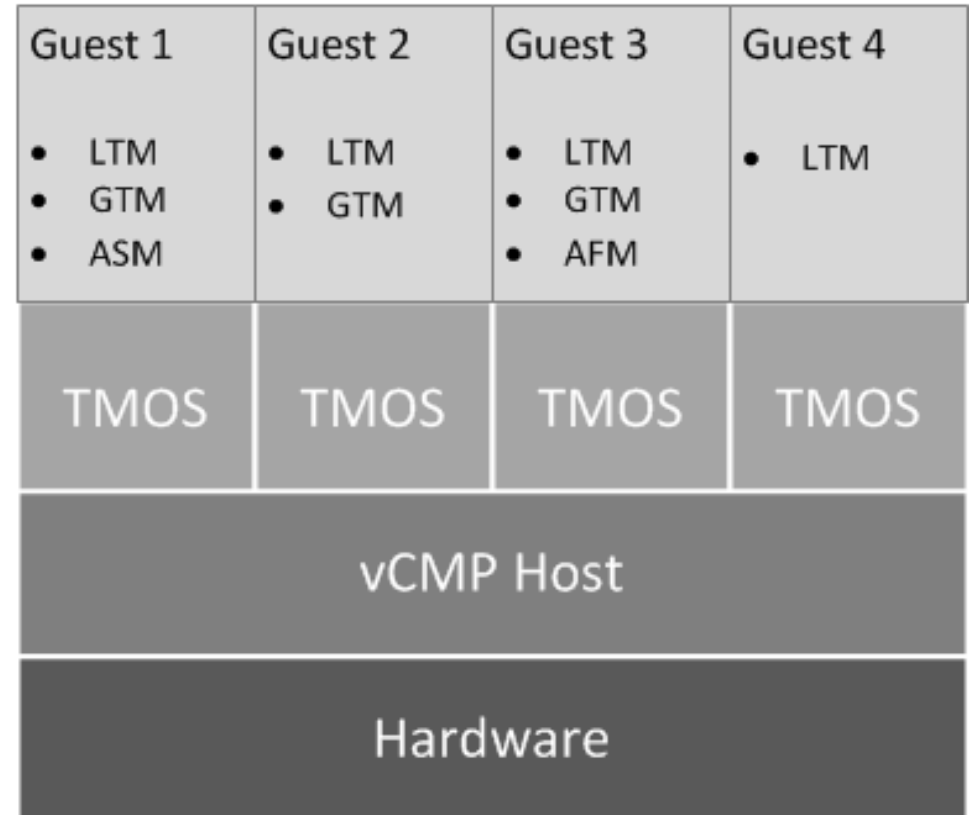
Objective 4.01: Supporting the close

Determine hardware details

BIP-IP iSeries Hardware

F5 TurboFlex optimization technology:

Field-programmable gate arrays (FPGAs), tightly integrated with CPUs, memory, TMOS, and software, provide specific packet-flow optimizations, L4 offload, support for private cloud tunneling protocols, and denial-of- service (DoS) protection. Only BIG-IP iSeries appliances feature TurboFlex performance profiles—user-selectable, pre-packaged optimizations that provide different performance characteristics depending on the business need.

Objective 4.01: Supporting the close

Determine hardware details

FIPS Compliance:

- The Federal Information Processing Standards (FIPS) specify requirements for cryptographic modules. FIPS compliance is required for many government agencies and industries such as financial services and healthcare that demand the highest standards in information, application, and data security.

- F5 offers a broad range of FIPS-certified hardware appliances that support a FIPS 140-2 Level 2 implementation for RSA cryptographic key generation, use, and protection (when running validated versions of TMOS).

BIG-IP 10350v-F/i7820-DF/i5820-DF supports a FIPS 140-2 Level 3 implementation of the Internal HSM (PCI card).

Objective 4.02

Determine licensing solution (Perpetual, Utility, ELA, Subscription, BYOL)

Licensing: Flexible Virtual Edition Deployment Options

BYOL	PAYG	Subscription	Enterprise Licensing Agreement (ELA)
• Perpetual VE License • Deployed in any supported environments • Includes upgrades to next 3 major BIG-IP versions • F5 Support not included • Purchased through F5 or channel Partner, for use in all cloud environments	• Hourly, monthly or annual payments with no up-front capital cost. • Any-time upgrade to latest version of BIG-IP • F5 Premium Support included • Purchased through cloud marketplaces; currently available for AWS, Azure, Google and IBM Cloud for VMWare Solutions • Optimal for Dev/Test, or short term projects	• 1-, 2- or 3-year annual licenses, paid up front at the beginning of the contract period • Any-time upgrade to latest version of BIG-IP • F5 Premium Support included • Annual VE Subscription licenses purchased through F5 or channel partners, for use in all cloud environments • Requires use of BIG-IQ License Manager or BIG-IQ Central Management 5.2+ • Annual Subscriptions also available directly through select marketplaces (AWS and Azure)	• 3 year subscription with flexible consumption. • Any-time upgrade to latest Version of BIG-IP • F5 Premium Support included • Purchased through F5 or channel partners, for use in all cloud environments • Instant instantiation of new VE instances via self service • Requires use of BIG-IQ License Manager or BIG-IQ Central Management 5.2+

Objective 4.03: Gather necessary information

(support options, interfaces, power supplies, product SKUs, Professional Services)

Bill of Materials (BoM).

- Understand the F5 price sheet for the SKU numbers to build the BoM.

- Understand hardware and software platforms

- Understand required hardware options such as SFPs, QSFP+ (40Gbps), and/or redundant power supplies.

- Understand power requirements and cords

- Understand support levels Standard and Premium.

https://www.f5.com/pdf/products/big-ip-platforms-datasheet.pdf

https://www.f5.com/pdf/products/viprion-overview-ds.pdf

https://support.f5.com/csp/article/K15045 - QSFP+ Breakout Cable Options

https://support.f5.com/csp/article/K13435 - BIG-IP Power Cabling

Section 5: Ongoing support/maintenance

Objective 5.01: Understand Company Personas

Determine buying powers, influencers, and purchasing cycles

Understanding the business stake holders

- Chief Executive Officer (CEO)
- Chief Information Officer (CIO)
- Chief Technology Officer (CTO)
- Chief Financial Office (CFO)
- Chief Information Security Officer (CISO)
- Chief Compliance Officer (CCO)
- IT Director
- IT Managers
- IT Staff (i.e. Developers, engineers, admins, etc.)

https://www.investopedia.com/terms/c/c-suite.asp (many resources on the web)

Objective 5.01: Distinguish needs of buyers & influencers

How they affect the buying cycle

You cannot expect that you are the only one that has influence on the buyer in your prospective customer. There are many different influencers:

- Executives

- BU (may include cross-functional teams)

- Business Development

- Finance

- Engineering

- Operations

- IT

This article from LinkedIn has a great perspective of how influencers can impact your sales opportunities."

https://business.linkedin.com/sales-solutions/blog/sales-trends/2018/08/what-are-influencers--and-how-do-they-affect-the-b2b-buyer-s-jou
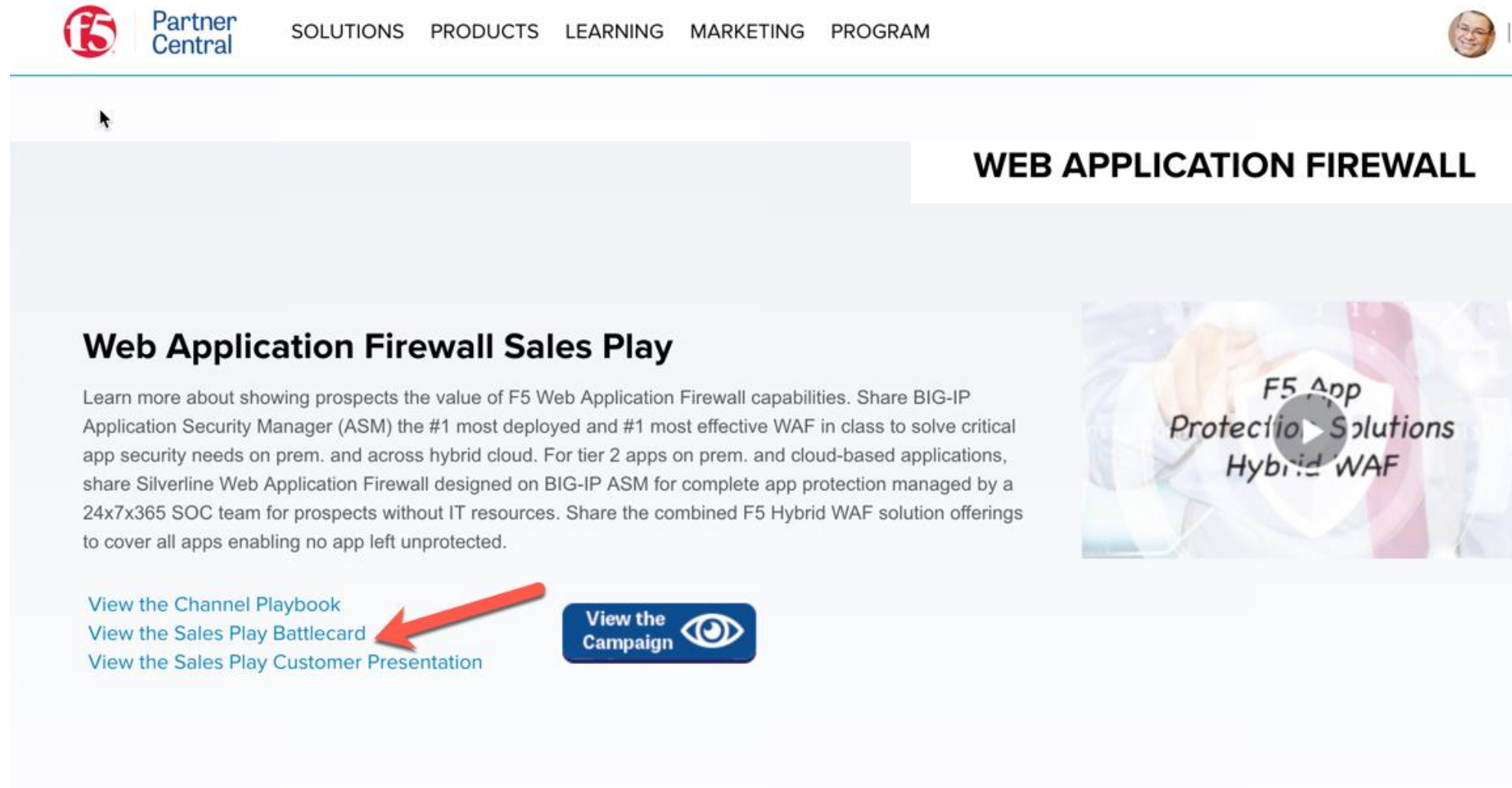
Objective 5.01: Distinguish needs of buyers & influencers

Influencer Impact at Each Stage of the Deal

- **Early-Stage: Become familiar with respected authorities (external)**
  - Stay focused on company content or social media updates to understand their viewpoints

- **Middle-Stage: Customer testimonials and peer review's (POC's)**
  - Understand when buyers begin to narrow their choices (IT Staff and Engineers)

- **Late-Stage: Expanding your own influence across the buying committee**
  - Leverage your relationships to help solidify consensus

- **Closing the deal**
  - Identify hidden influencers that can impact the purchase decision

Recommend training/enablement based on needs

Resources for Information: https://partners.f5.com

Objective 5.01: Partners, F5 Product Sales Play Site

Understand how to position F5 solutions

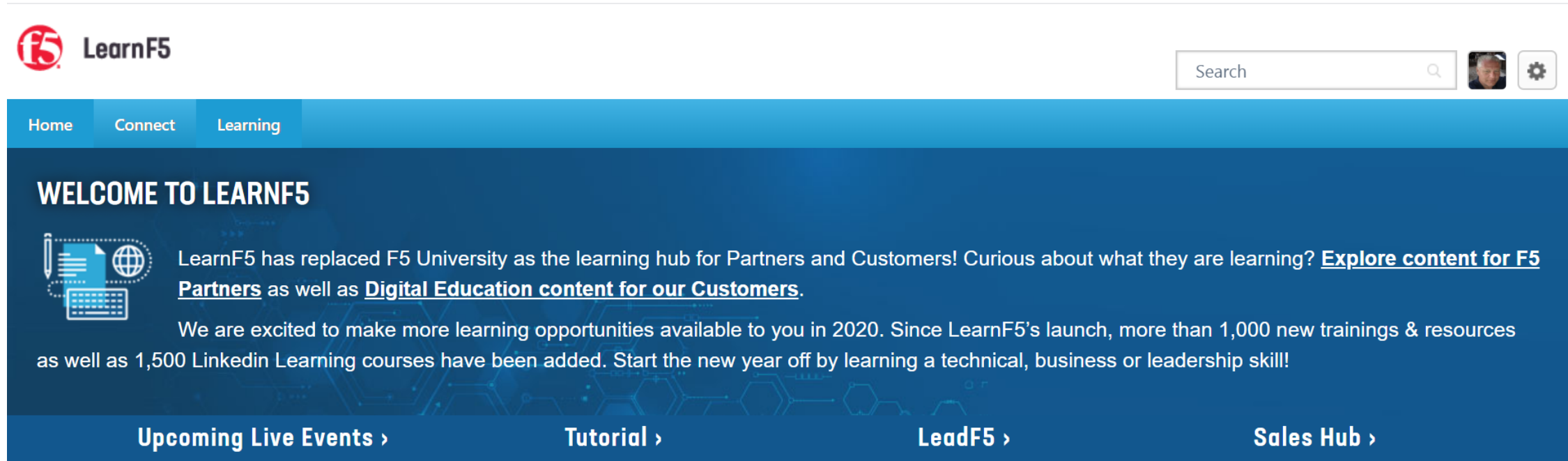**② Identify the offering that meets customer's needs**

First Question To ASK:

Does your customer have resources dedicated to managing security policy with each application?

Other Questions and Considerations When Talking With Your Target Customers	IF YES: BIG-IP ASM	IF NO: Silverline WAF	
Have resources to manage WAF	✓		Hybrid WAF Deployment
Need to maintain app blocking control	✓		
Willing to use professional services	✓		
PCI compliance challenges	✓	✓	
VA/DAST part of app development/protection	✓	✓	
Must protect cloud-based apps	✓	✓	
Must protect tier 2 apps		✓	Silverline WAF Deployment
Prefer outsourcing app security		✓	
Require 3rd party policy creation with 24x7x365 support		✓	

Objective 5.01: Recommend F5 Training

LearnF5.com

Curriculum: Getting Started Series!

Objective 5.02: Determine when to engage F5

Utilize Subject Matter Experts during technical activities

- **F5 SME has deep understanding of F5 products**

  - NGINX; Automation; SP; Security; ADC Software; BIG-IP Platform (VE/Hardware); Silverline/Cloud

- **F5 Account team and Local Field Sales Engineers**

  - Proof of Concept (POC); Product sizing; Network placement

- **F5 Channel Sales Engineers**

  - F5 product information and technology enablement

Objective 5.02: Determine when customer engages F5 support

Maintenance agreements – F5 products: 1-year MFG, 90-day S/W

- **Contract support levels:** Standard: 10x5; Premium 24x7

- **Expedited RMA Services:** Maintenance add-on packages are available

- **Installation:** On-site installation services available through F5 PS or local authorized F5 reseller

- **Professional Services offerings:** planning, design, deployments, upgrades, migrations, optimization, etc.

- **Network Support Centers:** APAC, Japan, Europe, Middle East, Africa and the Americas

- **OnDemand Consulting:** iRules and iApp service (SLA: within 1-2 business days)

How to open a support case with F5: https://support.f5.com/csp/article/K2633

Objective 5.02: Ongoing support/maintenance

Case Severity Definitions and Response Times

Case Severity	Condition	Support Response time	Description	Notes
Severity 1	Site Down	1 Hour	All network traffic has ceased, causing a critical impact to your business	Software or hardware conditions on your F5 device are preventing the execution of critical business activities. The device will not power up or is not passing traffic.
Severity 2	Site at Risk	4 Business Hours	Primary unit has failed resulting; Site is at risk of going down	Software or hardware conditions on your F5 device are preventing or significantly impairing high-level commerce or business activities.
Severity 3	Performance Impaired Perfomance Degragded	8 Business Hours	Network traffic is extremely slow; significant impact to your business. Network traffic is partially functional; some applications to be unreachable.	Software or hardware conditions on your F5 device are creating degradation of service or functionality in normal business or commerce activities.
Severity 4	General Assistance	Next Business Day	General information requested.	Questions regarding configurations ("how to"), troubleshooting non-critical issues, or requests for product functionality that is not part of the current product feature set.

F5 support guidelines and policies: https://www.f5.com/pdf/customer-support/guidelines-and-policies-ds.pdf

Objective 5.02: Determine when to engage appropriate F5 employees

Locate and determine appropriate resource for account/customer escalations

- **Network Support Engineer-** first level of technical support.

- **Technical Support Manager-** If at any time you believe that a case is not being handled in accordance with the service levels in your support contract. Have support representative escalate to the support manager.

- **F5 four escalation situations**

  - The first is a situation where an NSE intuitively knows that the issue could become troublesome
  - The second is a time-based escalation. We preset alerts and reports in our call management system to use as a safety valve
  - The third is a technical escalation where due to the urgent nature of the issue events are time triggered
  - The fourth is a management escalation where it is in the best interest of the customer and the F5 team to communicate concerns to senior management.

Objective 5.02: Determine when to engage appropriate F5 employees

Locate and determine appropriate resource for account/customer escalations

Support Managers <mark>technical escalation</mark> steps outlined for Level 1 and 2 Case

Time	Technical Team	Action Taken
Immediate	NSE	Support Manager ensures resources are assigned
Hourly	NSE to Support Manager	Status provided
4 Hours	NSE to ENE	NSE/Manager develop technical action plan - Escalate to ENE
8 Hours	ENE to Product Development	Escalate to Product Development

Objective 5.02: Determine when to engage appropriate F5 employees

Locate and determine appropriate resource for account/customer escalations

The fourth is a **management** escalation where it is in the best interest of the customer and the F5 team to communicate concerns to senior management.

Time	Management Team	Action Taken
4 Hours	Network Support Manager	Works with Technical to develop action plan
4.5 Hours	Support Manager to NS Director and ENE Manager	Notification and review of plan
8 Hours	NS Director to VP Global Services ENE Manager to CTO	Escalate to Product Development

Objective 5.03: Identify F5 enablement resources and tools

Define evaluation hardware and software tools and processes

Strongbox Demo Appliance

- The F5 StrongBox program provides F5 UNITY Partners with an easy, cost-effective way to allow their customers to test drive F5 technology.

Good, Better, Best Platforms

VE 25/200M | VE 1/3/5Gbps | 2000/4000 series | 11000 Series | VIPRION 2400

i5000 Series | i7000 Series | i10000 Series | VIPRION 4480 | VIPRION 4800

Objective 5.03: Identify F5 enablement resources and tools

Define evaluation hardware and software tools and processes

Strongbox License Site

https://strongbox.f5.com/strongbox/eval.jsp

Objective 5.03: Identify F5 enablement resources and tools

Define evaluation hardware and software tools and processes

Partner vLabs

downloads.f5.com

Presales engineers have access to Partner vLabs that provide them with manuals to build F5 product demo labs

|	
Certificate-Authority-Bundle	Certificate Authority Bundle
EnterpriseManager	Enterprise Manager v3.x / Virtual Edition
Hardware-Specific	Platform / EUD
iWorkflow	iWorkflow 2.x
MobileSafe	MobileSafe SDK
Non-US-Patches	Non-US Patches for BIG-IP
Portable-Diagnostics-Tool	Diagnostics
Security	Security_v15.x / Virtual Edition
	Security_v14.x / Virtual Edition
	Security_v13.x / Virtual Edition
	Security_v12.x / Virtual Edition
	DDoS Hybrid Defender
	SSL Orchestrator
Utility-Software	Enterprise Manager LogIQ Collector
vLab	Virtual Lab Environment (vLab)

Objective 5.03: Identify F5 enablement resources and tools

Define evaluation hardware and software tools and processes

iRules Editor

You can now develop iRules with full syntax highlighting, colorization, textual auto-complete, integrated help, etc.

https://devcentral.f5.com
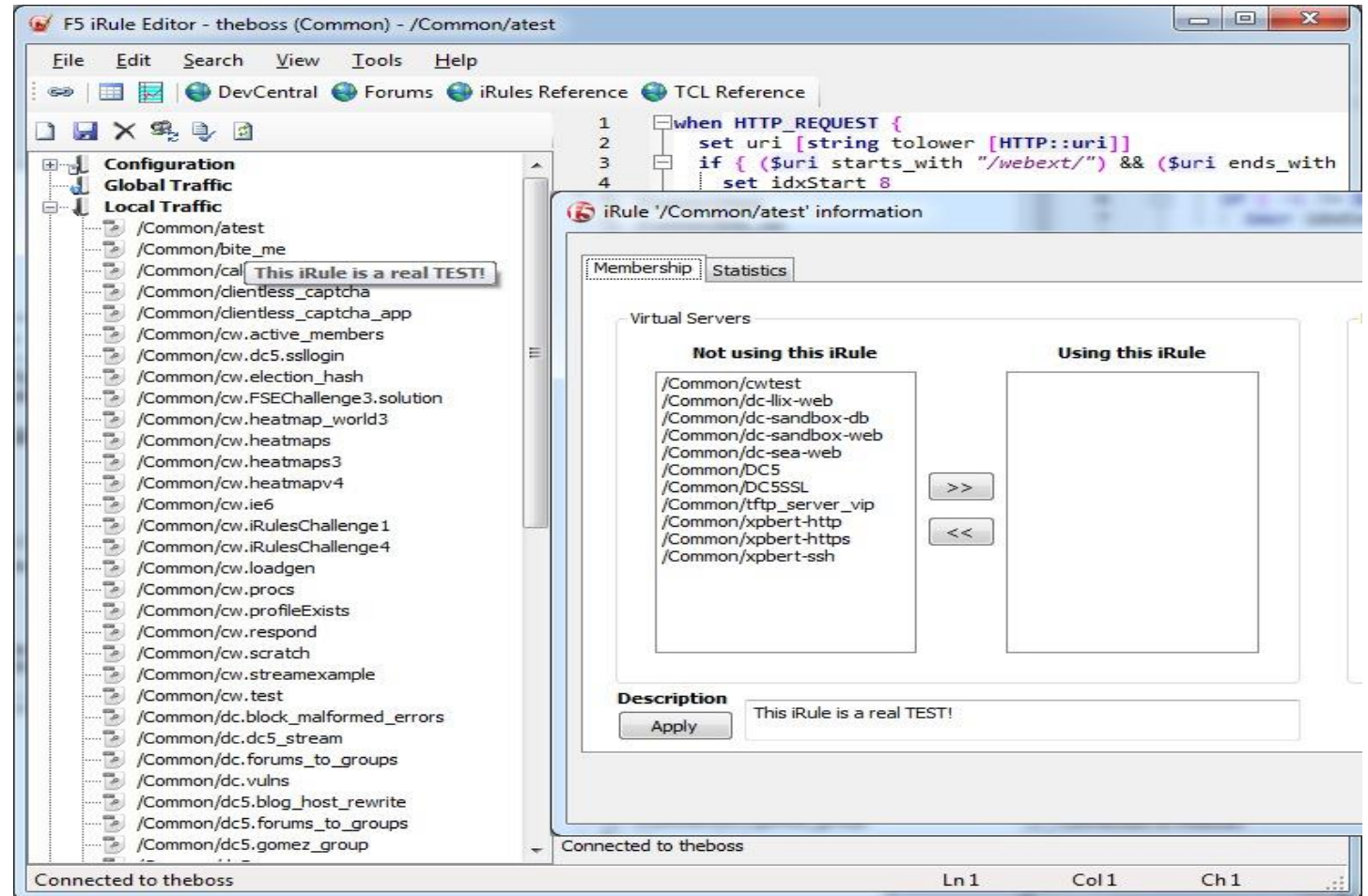
Objective 5.03: Identify F5 enablement resources and tools

Identify technical enablement content

F5 Sales Accreditations

- The Presales engineer can leverage F5 Technical Sales Accreditation course

- Learnf5.com

LearnF5

Home Connect Learning

CURRICULUM

F5 Sales Accreditation - Technical Roles

Last Updated 04/21/2020   Duration 4 hours, 3 minutes

Details

The F5 Sales Accreditation for Technical Roles is the first step to maximizing your F5 partnership. Leverage these on-demand modules to prepare to demo F5 solutions and facilitate technical discussions.

Show More

Contents   7 Trainings

ONLINE CLASS	Get to Know F5
ONLINE CLASS	F5 Platforms and Technologies for Technical Professionals
ONLINE CLASS	F5 Application Delivery Solutions for Technical Professionals
ONLINE CLASS	F5 Security Solutions for Technical Professionals

Objective 5.03: Identify F5 enablement resources and tools

Describe the sales operations tools and processes

Understand the F5 Sales Cycle

- Prospecting and Pipeline
- Lead Qualification
- Partner Deal Registration
- Customer Engagement
- Solution Recommendation
- Production Evaluation
- Quoting
- Competitive Positioning
- Technical and Business Value Proposals
- Connecting with Buying Influencers
- Forecasting
- Closing

Secret Sauce!

- Know thyself! Morning person or afternoon person? Schedule exams accordingly
- Prometric has been added as an authorized testing facility (after a several year hiatus)
- 2 forms of photo ID required (license or company badge, and passport for example)
- Dedicate enough time for exam preparation
- Answer all questions the first time through – no exceptions!
- Mark 10 questions for review at most
- Do NOT change an answer unless you are 100% sure you have initially answered wrong. Your first, best guess is usually correct (you don't want changing a correctly answered question!)
- Use the F5 exam "Blueprint" to understand what topics you will be tested on
- A minute to win it! 67.5 seconds per question (80 questions, 90 minutes – do the math..)
- F5 is VERY good at presenting "distractors" to students
- When trying to fill knowledge gaps, map the testing topic section to a Knowledge (K) document
- Fight for every question
- Taking a practice exam is strongly recommended ($25 for each, $40 for two) – no more than 2 attempts

The great Vince Lombardi told his new team in 1959 that they were going to relentlessly chase perfection. We will never get there, but in the process, we will catch excellence!

What's Next 201 – TMOS Administration

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F5 Certification Exams

CERTIFIED CSE f5
Solutions Expert

| Security Solutions 401 | Future Cloud | Future Enterprise | Future Exams |

CERTIFIED CTS f5
Technology Specialist

| LTM Specialist (b) 301b / LTM Specialist (a) 301a | DNS Specialist 302 | ASM Specialist 303 | APM Specialist 304 | Future Exams |

CERTIFIED CA f5
Administrator

| TMOS Administration 201 | Future Exams | Pre-Sales Fundamentals 202 |

Application Delivery Fundamentals 101

CERTIFIED SP f5
Sales Professional

Next Steps Toward F5-CA

- Log onto certification.f5.com
- Click on "View your exam histor
- If you are qua site to set a de
- Download the
- Attend the 201

View your exam history and other certification requirements.

Exams

Exams are imported during regular business hours. After completing an exam, al

Code	Exam
301b	LTM Specialist: Maintain and Troubleshoot
302	GTM Specialist
301b	LTM Specialist: Maintain and Troubleshoot
301a	LTM Specialist: Architect, Setup, and Deploy
302	GTM Specialist
301a	LTM Specialist: Architect, Setup, and Deploy
201	TMOS Administration
101	Application Delivery Fundamentals

Pearson | VUE

f5 CERTIFIED

Home   My Profile   My Order   Sign Out

Home

Signed In as: William Mitchell
F5 Candidate ID: F50000

F5 Professional Certification Program Exams

Pre-approved Exams

- **302Beta: BIG-IP DNS Specialist Beta**
- **303: ASM Specialist**
- **303Beta: ASM Specialist Beta**
- **304: APM Specialist**
- **304Beta: APM Specialist**

My Account

> **My Profile**
> **Account Sign In**
> **Preferences**
> **Exam History**
> **My Receipts**

Upcoming Appointments

You do not have any appointments scheduled.

WE MAKE APPS

GO→

FASTER. SMARTER. SAFER.