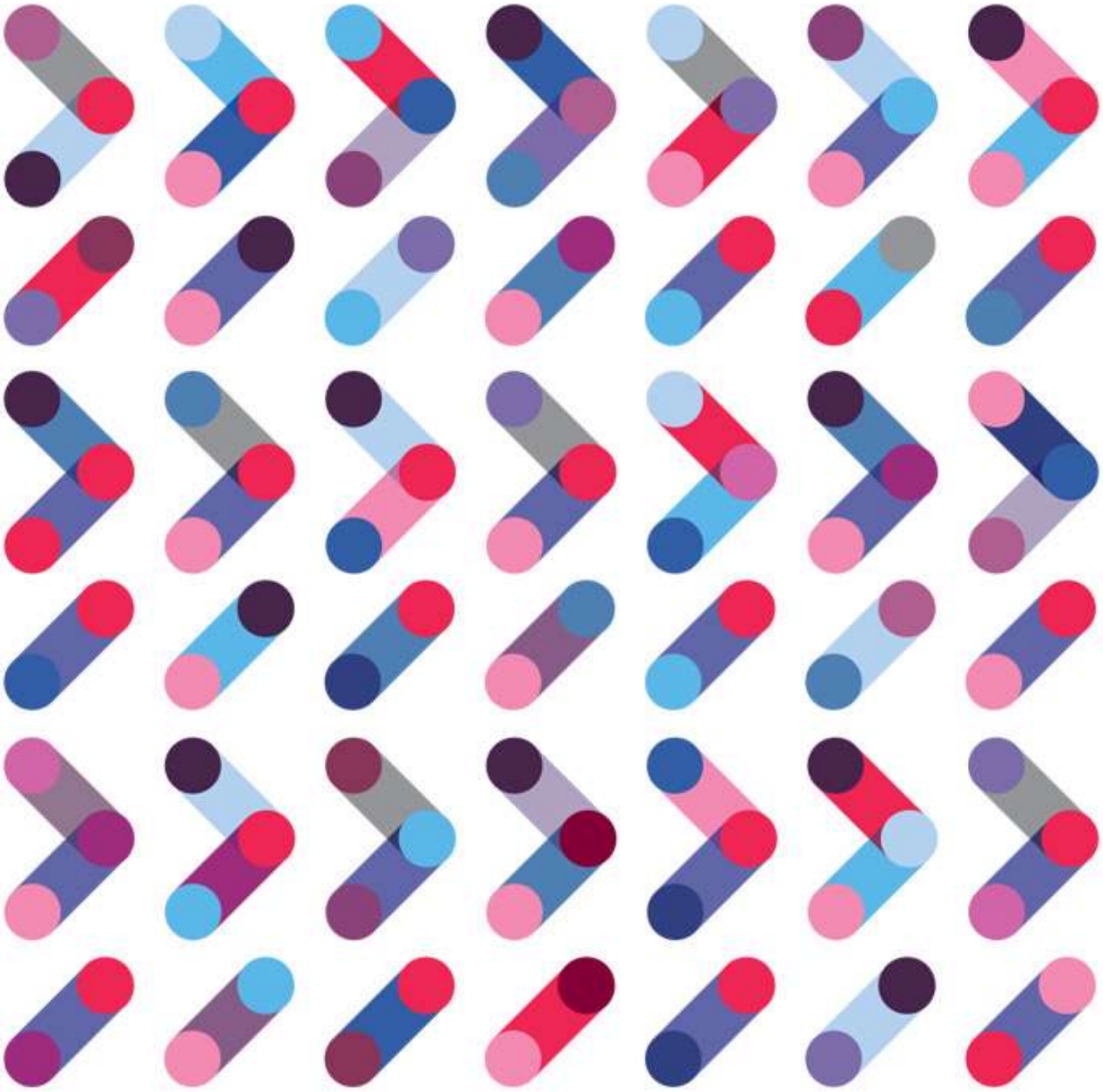

Pitchflow – Infrastructure Setup

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EVALUESERVE
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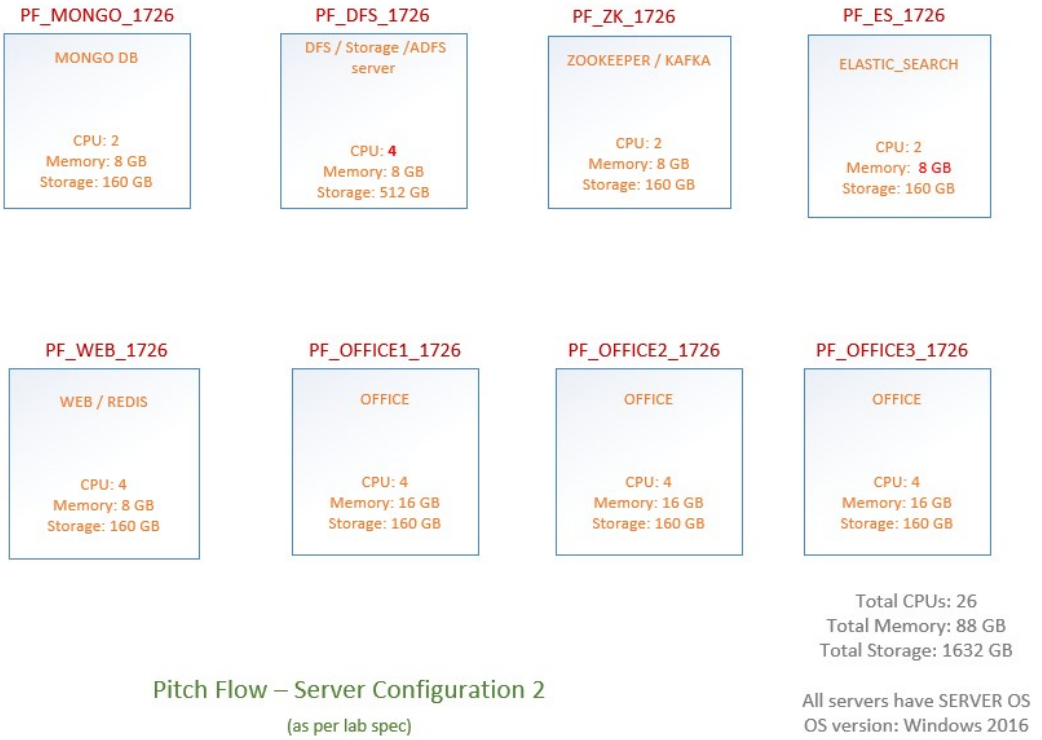
Contents

Infrastructure Overview

Topology / Infrastructure diagram



Pitch Flow – Server Configuration 2

(as per lab spec)

Network

Pitchflow system must be installed in local network limited by firewall.

Inbound rules:

- Port TCP(80) and TCP(443) to server with installed Web (Internet Information Services) role.

Outbound rules:

- Port used by ADFS, to server with Web role

Domain names and certificates

Pitchflow require following FQDNs for Web server, in any domain which will be resolvable by internal Pitchflow system and client computer used to access Pitchflow. Examples bellow are made for contoso.com domain.

- www.contoso.com
- *api.contoso.com*
- *content.contoso.com*

SSL certificates should cover web server FQDNs and should be trusted on web server, ADFS and client computers used to access Pitchflow.

Recommended

All internal relations between Pitchflow systems will use a FQDNs for internal configuration and connection strings. List bellow contain complete listing with all internal Pitchflow roles (based on contoso.com domain)

- storage.contoso.com
- kafka.contoso.com
- elastic.contoso.com
- mongo.contoso.com
- redis.contoso.com
- worker.contoso.com

example names are provided for one server per role installation without redundancy. If redundancy is required, trailing host name can be followed by numbers.

User account prerequisite

Server/Role	Permissions
Web	To run IIS application pools with file system access to sites root folder. This user need an access to storage server with read/write access to share
Worker	To run as a service and file system - to worker binaries location. This user need an access to storage server with read/write access to share
Kafka	To run as a service and file system permissions to installation folder This user need a full permission to root of a drive where Java Runtime is installed.
Elastic	To run as a service and file system permissions to installation folder This user need a full permission to root of a drive where Java Runtime is installed.
Mongo	To run as a service and file system permissions to installation folder
Redis Cache	To run as a service and file system permissions to installation folder

Service details

1. Storage

   Windows Share with read/write permissions for users running IIS applications pools and Worker server Pitchflow Services.

2. Kafka
   - Files
     - Java SE Runtime Environment 8
       http://www.oracle.com/technetwork/java/javase/downloads/jre8-downloads-2133155.html
     - Apache Kafka 0.10.1.1
       https://kafka.apache.org/downloads

- Apache Zookeeper 3.4.11
  https://www.apache.org/dyn/closer.cgi/zookeeper/

- Prerequisite:
  - System variables:
    - 'JAVA_HOME' – should point to Java SE Runtime installation folder
    - 'ZOOKEEPER_HOME' – should point to Zookeeper installation folder
  - File System (Optional)
    - Add additional Volume in example D:

- Installation
  - Download and Install Java SE Runtime to D:\Java\
  - Download and unzip Apache Kafka to D:\Kafka_0.10.1.1\
  - Download and unzip Apache Zookeeper to D:\zookeeper_3.4.11\
  - Create directory D:\Kafka_0.10.1.1\Data
  - Edit file D:\Kafka_0.10.1.1\Config\server.properties, replace od add parameters value listed bellow

Parameter	Value
broker.id	0
host.name	Put server host name
delete.topic.enable	true
listeners	PLAINTEXT://hostname:9092 where hostname is a server host name
log.dirs	D:/Kafka_0.10.1.1/Data
num.partitions	6
log.retention.hours	24
zookeeper.connect	Hostname:2181 replace Hostname by actual zookeeper host name

  - Create directory D:\zookeeper_3.4.11\Data
  - Create of edit D:\zookeeper_3.4.11\conf\zoo.cfg, replace od add parameters value listed bellow

Parameter	Value
tickTime	2000
initLimit	10
syncLimit	5
dataDir	D:/Zookeeper_3.4.11zData
clientPort	2181
server.1	Hostname:2888:3888 replace hostname by actual Kafka host name

  - Using any service manager tool setup Kafka service by running 'D:\Kafka_0.10.1.1\bin\windows\kafka-server-start.bat' with 'D:\ Kafka_0.10.1.1config\server.properties' parameter with user designed to run Kafka service
  - Start Kafka service

- Using any service manager tool setup Zookeeper service by running 'D:\zookeeper_3.4.11\bin\zkServer.cmd' with user designed to run Zookeeper service
- Start Zookeeper service

- Firewall
  - Open following ports for inbound traffic for local network
    - TCP (2181), TCP (9092)

3. Elastic Search
   - Files
     - Java SE Runtime Environment 8 http://www.oracle.com/technetwork/java/javase/downloads/jre8-downloads-2133155.html
     - Elasticsearch 5.6.6 https://www.elastic.co/downloads/past-releases/elasticsearch-5-6-6
   - Prerequisite:
     - System variables:
       - 'JAVA_HOME' – should point to Java SE Runtime installation folder
     - File System (Optional)
       - Add additional Volume in example D:
   - Installation:
     - Download and unzip Elasticsearch into D:\
     - Create directories: Data, Log In Elasticsearch installation folder (D:\ elasticsearch-5.6.6)
     - Edit file D:\elasticsearch-5.6.6\Config\ elasticsearch.yml, replace od add parameters value listed bellow

Parameter	Value
cluster.name	pitchflow-es-cluster
node.name	Use server hostname
path.data	D:\ elasticsearch-5.6.6\Data
path.logs	D:\ elasticsearch-5.6.6\Log
network.host	Use server hostname
transport.tcp.port	9300

     - Go to D:\ elasticsearch-5.6.6\bin and run commands:
       - elasticsearch-service.bat install Elasticsearch_5.6.6
     - Change credential used to run Elasticsearch
     - Go to D:\ elasticsearch-5.6.6\bin and run commands:
       - elasticsearch-service.bat start Elasticsearch_5.6.6
   - Firewall
     - Open following ports for inbound traffic for local network
       - TCP (9200), TCP (9300)

4. Mongo
   - Files

- MongoDB Community 3.6.4
  https://www.mongodb.com/download-center?jmp=nav#community

- Prerequisite:
  - File System (Optional)
    - Add additional Volume in example D:
- Installation:
  - Create directory D:\MongoDB, D:\MongoDB\Logs, D:\MongoDB\Data, D:\MongoDB\Config
  - Download and Install MongoDB into D:\MongoDB directory
  - Create file D:\MongoDB\Config\mongo.conf with following content:

    dbpath=C:\MongoDB\Data

    logpath=C:\MongoDB\Log\mongod.log

    bind_ip=0.0.0.0

  - Setup new user with read/write permission on Data Database
  - Create mongo service and enable authentication by running: D:\MongoDB\bin\Mongod.exe --config D:\MongoDB\Config\mongo.conf --auth –install
  - Change credential used to run Mongo DB
  - Run Mongo service
- Firewall
  - Open following ports for inbound traffic for local network
    - TCP (27017)

5. Web
   - File System (Optional)
     - Add additional Volume in example D:
   - Installation
     - Install Internet Information Services using PowerShell command :
       - Install-WindowsFeature -Name Web-Server,Web-WebServer,Web-Common-Http,Web-Default-Doc,Web-Dir-Browsing,Web-Http-Errors,Web-Static-Content,Web-Health,Web-Http-Logging ,Web-Performance,Web-Stat-Compression,Web-Security,Web-Filtering,Web-Basic-Auth,Web-Windows-Auth,Web-App-Dev,Web-Net-Ext,Web-Net-Ext45,Web-AppInit,Web-ASP,Web-Asp-Net,Web-Asp-Net45,Web-ISAPI-Ext,Web-ISAPI-Filter,Web-Includes,Web-WebSockets,Web-Mgmt-Tools,Web-Mgmt-Console,NET-Framework-Features,NET-Framework-Core,NET-Framework-45-Features,NET-Framework-45-Core,NET-Framework-45-ASPNET,NET-WCF-Services45,NET-WCF-TCP-PortSharing45
   - Firewall
     - Open following ports for inbound traffic for local network and client network
       - TCP (80), TCP (443)
6. Redis Cache
   - Files
     - Redis Cache for Windows 3.2.100
       https://github.com/MicrosoftArchive/redis/releases:
   - File System (Optional)

- Add additional Volume in example D:

- Installation:
  - Download and install Redis Cache
  - Update ‘redis.windows-service.conf’ file form Redis Cache installation directory

Parameter	Value
protected-mode	no
port	6379
syslog-enabled	yes
syslog-ident	redis
maxmemory	1000mb

  - Change credential used to run Redis Service
  - Run Redis service
- Firewall
  - Open following ports for inbound traffic for local network
    - TCP (6379)

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