

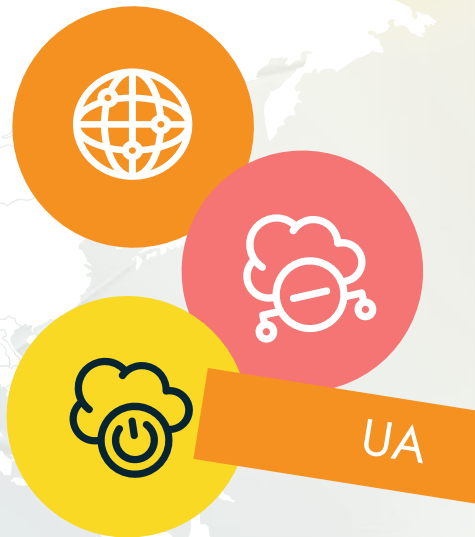
UASG

UA Readiness Guidelines



Compliance with IDN and EAI

Connect The Un-Connected



Verbs of UA Readiness



Accept



Validate



Process



Store



Display

1. Domain Names (including Internationalized Domain Names):

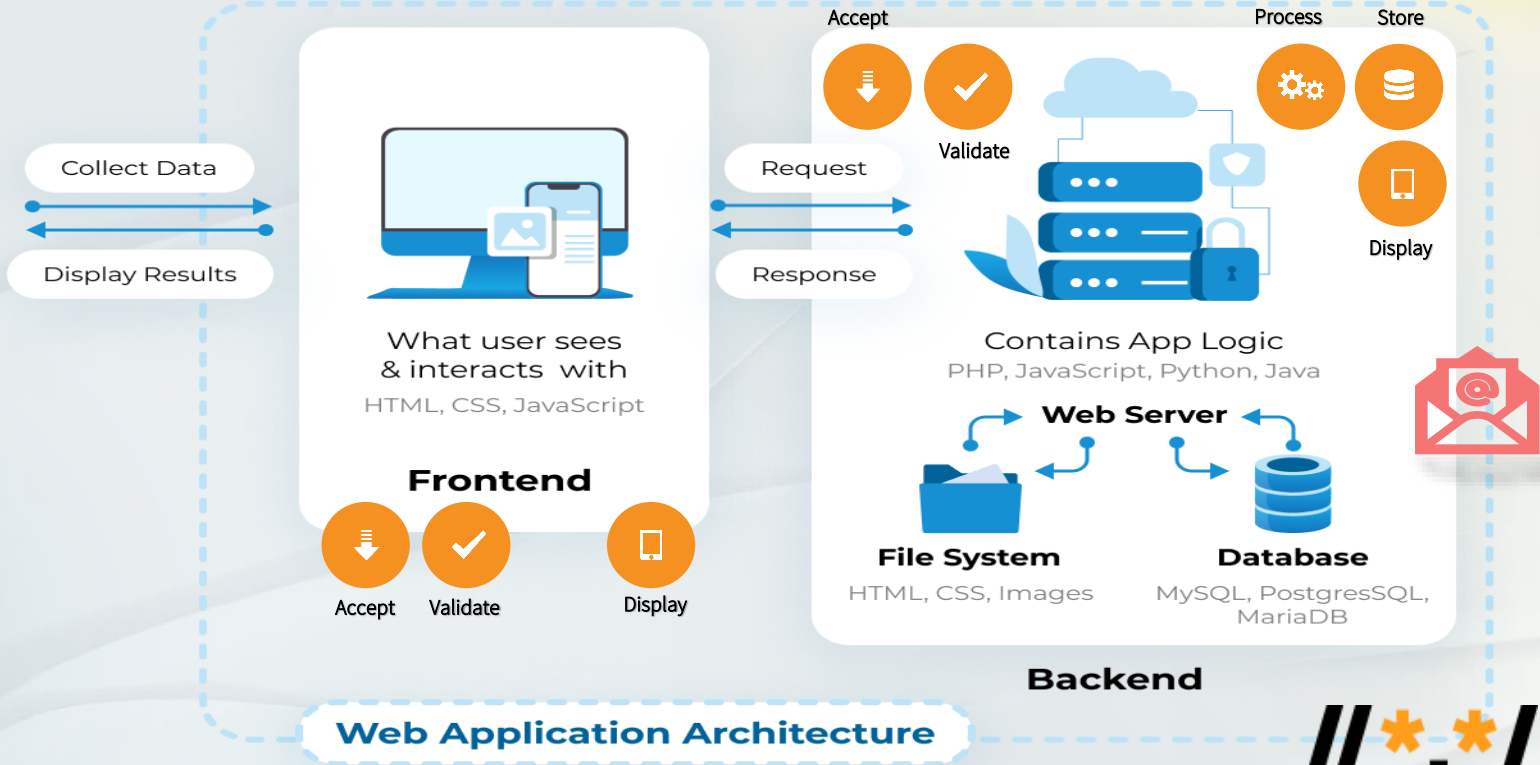
- New short top-level ASCII domain names: example.sky
- New long top-level ASCII domain names: example.engineering
- Internationalized Domain Names (IDNs): คน.ไทย

2. Email Addresses (including internationalized email):

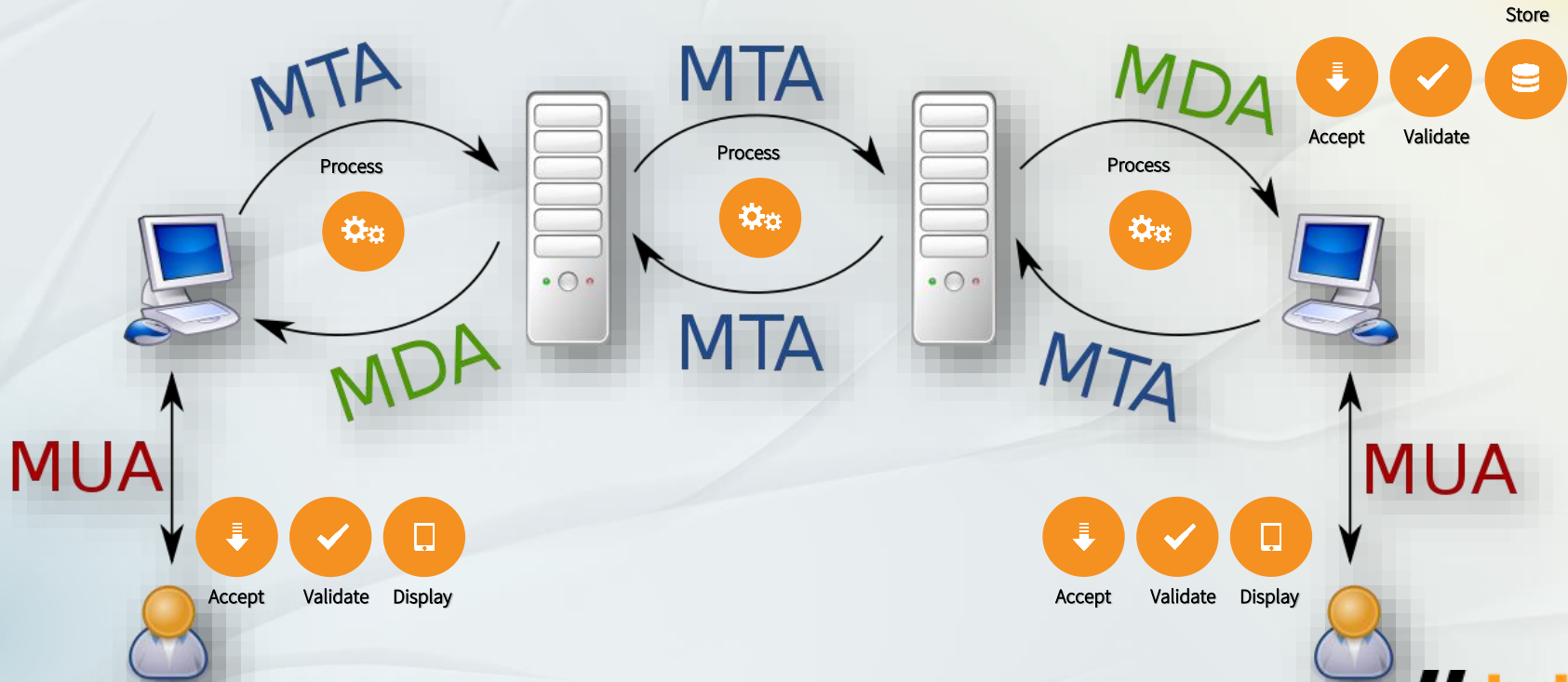
- ASCII@ASCII (new and long TLD): ekrem@misal.istanbul
- ASCII@IDN: marc@société.org
- Unicode@ASCII: 测试@example.com
- Unicode@IDN: अजय@डाटा.भारत
- Unicode@IDN; right-to-left scripts: ای-میل@مثال.موقع

01

Standard Web Application Architecture



Standard Mail Environment Architecture



WEB

UA Readiness

IDN & EAI

Verbs of UA Readiness



Accept

Accept 01

Accepting occurs whenever an email address or a domain name is received as a string of characters from a user interface, from a file, or from an API used by a software application or online service.

Users should be allowed, but not required, to enter domain names as A-labels rather than U-labels. However, U-labels should be shown by default, with A-labels shown to the user only when it provides a benefit.

Verbs of UA Readiness

Accept 01



Accept

UA Sample Form

Enter your domain name and email address to be evaluated:

Save & Validate

email address to be

Save & Validate

UA Sample Form

Enter your domain name and email address to be evaluated:

Save & Validate

UA Sample Form

Enter your domain name and email address to be evaluated:

Save & Validate

Verbs of UA Readiness



Validate

Validate 02

Validation may occur in many places whenever an email address or a domain name is either received or emitted as a string of characters by an application or online service.

Validate only if it is required for the operation of the application or service. This is the most reliable way to ensure that all valid domain names are accepted into your systems.

Verbs of UA Readiness



Validate

Validate 02

```
^[\p{L}\p{N}\p{M} .%+-]+@[\p{L}\p{N}\p{M} .-]+\.[\p{L}\p{N}\p{M}]{2,}$
```

Your test string:

xn---wgbhlc@yahoo.com
ayhoo@yahoo.com
مشرف@سجل.مصر
يا هو@يا هو.مصر
你好好@你好好.你好好
नमस्ते.नमस्ते@नमस्ते.नमस्ते
天主教@天主教.天主教
クラウド@クラウド.クラウド
agalila@クラウド.クラウド
مشرف@クラウド.クラウド

Match result:

xn---wgbhlc@yahoo.com
ayhoo@yahoo.com
مشرف@سجل.مصر
يا هو@يا هو.مصر
你好好@你好好.你好好
नमस्ते.नमस्ते@नमस्ते.नमस्ते
天主教@天主教.天主教
クラウド@クラウド.クラウド
agalila@クラウド.クラウド
مشرف@クラウド.クラウド

Verbs of UA Readiness

Validate 02



Validate

```
public static boolean isValidTLD(String tld) throws MalformedURLException, IOException {
    File file = new File("C:\\root.zone");
    URL oracle = new URL("http://www.internic.net/domain/root.zone");
    BufferedReader in = new BufferedReader(new FileReader(file));
    //BufferedReader in = new BufferedReader(
    //    new InputStreamReader(oracle.openStream()));
    boolean exists = false;
    tld = StringAccept.getACELabel(tld);
    String inputLine;
    while ((inputLine = in.readLine()) != null) {
        System.out.println(inputLine);
        if (inputLine.equals(tld)) {
            exists = true;
        }
    }
    in.close();
    return exists;
}
```

```
public static boolean checkMXExistence(String hostName) {
    boolean exists = false;
    try {
        Record[] records = new Lookup(hostName, Type.MX).run();
        for (int i = 0; i < records.length; i++) {
            MXRecord mx = (MXRecord) records[i];
            exists = true;
            System.out.println("Host " + mx.getTarget() + " has preference " + mx.getPriority());
        }
    } catch (Exception ex) {
    }
    System.out.println(exists);
    return exists;
}
```

Verbs of UA Readiness

Validate 02



Validate

```
if (StringAccept.isWordInMixedScript(domainName) != 0 || StringAccept.isWordInMixedScript(emailAddressParts[0])  
|| StringAccept.isWordInMixedScript(emailAddressParts[1]) != 0 ) {  
    stopValidation = true;  
    redirectPage(request, Y  
}  
  
public static int isWordInMixedScript(String text) {  
    int mixCounter = 0;  
    String textWithoutSpace = text.trim().replaceAll(" ", ""); //to ignore whitespace  
    if (!isACELabel(text) && !isASCIIDomain(text)) {  
        for (int i = 0; i < textWithoutSpace.length(); ) {  
            int c = textWithoutSpace.codePointAt(i);  
            //range of arabic chars/symbols is from 0x0600 to 0x06ff  
            //the arabic letter 'y' is special case having the range from 0xFE70 to 0xFEFF  
            if ((c >= 0x0621 && c <= 0x064A || (c >= 0x0660 && c <= 0x0669) || (c >= 0x0030 && c <= 0x0039) || (c ==  
                i += Character.charCount(c);  
            } else {  
                mixCounter++;  
            }  
        }  
    }  
}
```

Verbs of UA Readiness

Validate 02



Validate

```
if (validDomainName && validEmailAddress) {  
    if (new QueryManager().checkDetailsExistence(domainName, emailAddress)) {  
        redirectPage(request, response, "./Index.jsp", "Domain Name & Email Address Is Already Exists");  
    } else {  
        domainName = StringValidate.escapeOpenDot(domainName);  
        emailAddress = StringValidate.escapeOpenDot(emailAddress);  
        new QueryManager().insertDetails(StringValidate.getLabelsTexts(domainLabels), StringValidate.getEmailLabelsTexts(emailLabels));  
        redirectPage(request, response, "./Index.jsp", "Domain Name & Email Address Added Successfully");  
    }  
}
```

```
public static int getCharactersCount(String text) {  
    int numberOfCharacters = 0;  
    char chArray[] = text.toCharArray();  
    numberOfCharacters = chArray.length;  
    return numberOfCharacters;  
}
```

Verbs of UA Readiness



Process

Process 03

Processing occurs when an email address or a domain name is used by an application or service to perform an activity such as searching or sorting a list, or is transformed into an alternative format (such as turning U-labels into A-labels).

Ensure all web server and MIME mail responses have UTF-8 specified in the content type.

Verbs of UA Readiness



Store

Store 04

Storage occurs when an email address or a domain name is stored as a string of characters in a database or file used by a software application or online service and later retrieved by the same or other software applications.

Applications and services should support the most current Unicode standards

Verbs of UA Readiness

Store 04



Store

	domainName character(64)	emailAddress character(256)	ID [PK] integer
1	ntra.gov.eg	atharwat@tra.gov.eg	37
2	تنرا,مصر	atharwat@tra.gov.eg	38
3	وزارة-الاتصالات,مصر	البريد@وزارة-الاتصالات,مصر	39
4	تنرا,مصر	البريد@وزارة-الاتصالات,مصر	40
5	baher.icann	baher@icann.org	41
6	بشار,مصر	بشار@بشار,مصر	42

The screenshot shows a PostgreSQL database management interface. On the left, a tree view displays the database structure: Databases (2) including UASG-DB and postgres; Tablespace (2); Group Roles (0); and Login Roles (1). On the right, a properties panel for the selected database (UASG-DB) shows the following details:

Property	Value
Name	UASG-DB
OID	16395
Owner	postgres
ACL	
Tablespace	pg_default
Default tablespace	pg_default
Encoding	UTF8

Verbs of UA Readiness



Display

Display 05

The Display action occurs when an email address or a domain name is rendered within a user interface.

Display all Unicode code points that are supported by the underlying operating system.



UA Readiness

IDN & EAI

UA Goals for Email Systems



Շնորհակալություն Спасибо

Thanks

