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# **San Bernardino County on behalf of Arrowhead Regional Medical Center**

## Citrix Netscaler Configuration for Azure AD Multi-Factor Authentication and SAML with Federated Authentication Services



Scope Document

September 18, 2020 | Version 2.3



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# 1. Project Scope

County of San Bernardino on behalf of Arrowhead Regional Medical Center (“ARROWHEAD”) is looking for the ability to leverage Azure AD and SAML authentication architecture from Citrix ADC, to the StoreFront Server, to the Virtual App servers as well as O365. This architecture has been proposed to provide an optimally secure, single-sign0on experience for the ARROWHEAD end users when accessing O365 as well as remote access of virtualization resources. ARROWHEAD would like to leverage Citrix Federated Authentication Services (FAS) in conjunction with multi-factor authentication (MFA) with Azure AD as the identity provider. This configuration will provide universal SSO while leveraging Azure AD for MFA. The Citrix ADC SDX appliances are running on code version 11.1 that need to be upgraded per below:

- **SDX Firmware and Config:** The ARROWHEAD SDX appliances need to be upgraded to the 12.x version firmware and considerations will be made to ensure the appropriate CPU and SSL resources are assigned to the ADC instances
- **ADC Firmware and Config:** The ARROWHEAD VPXs, living on the SDXs need to be upgraded to the 12.x version firmware

The approach for this engagement will follow the Citrix Consulting Methodology. The engagement will consist of the described activities. Activities not listed are considered out of scope.

Project Phase	Activities in Scope
<b>Design</b>	
Federated Authentication Access Infrastructure Design	<p>Citrix will work with ARROWHEAD to provide a design for utilizing federated authentication into the Citrix environment. The design process will include the following tasks and components:</p> <ul style="list-style-type: none"> <li>• Gather business and technical requirements and identify key prerequisites for integrating the desired Azure AD authentication solution for MFA with the existing ARROWHEAD Citrix environment</li> <li>• Define key Design decisions for the SAML FAS and MFA SSO solution within the NetScaler Gateway, Storefront, and Citrix 7.15 environment</li> <li>• Components required for FAS</li> <li>• Sizing Considerations</li> <li>• ADC Integration</li> <li>• High Availability</li> </ul>
<b>Deploy</b>	
Federated Authentication Product Deployment	<p>Citrix will work with ARROWHEAD to integrate FAS into the test Citrix environment by performing the following:</p> <ul style="list-style-type: none"> <li>• Install and configure StoreFront with FAS integration</li> <li>• Configure a new NetScaler Gateway vServer for Remote Access leveraging Azure AD for MFA                             <ul style="list-style-type: none"> <li>○ The NetScaler Gateway will be an SP for Azure IDP</li> <li>○ Azure will provide AD Authentication and provide UPN for use with FAS</li> </ul> </li> </ul>

Project Phase	Activities in Scope
	<ul style="list-style-type: none"> <li>• Integrate Citrix FAS with supporting components within the ARROWHEAD 7.15 Citrix environment for somponents such as 7.15 Delivery Controllers and StoreFront Servers. Tasks include:                             <ul style="list-style-type: none"> <li>○ Work with ARROWHEAD security team to configure/validate a Certificate Authority (CA) to use with FAS</li> <li>○ Install and configure FAS on Windows server</li> <li>○ Set required Group Policy Object (GPO) settings for proper integration of FAS servers within ARROWHEAD domain</li> <li>○ Configure existing StoreFront and 7.15 Delivery Controllers to accept FAS-based authentication</li> <li>○ Conduct baseline functionality testing of solution with MFA mechanism including end-to-end SSO functionality to backend Citrix 7.15 resources</li> </ul> </li> <li>• Upgrade the Citrix ADC code on the following:                             <ul style="list-style-type: none"> <li>○ <u>SDX Firmware and Config</u>: ARROWHEAD SDX appliances need to be upgraded to the 12.x version firmware and assigned appropriate CPU and SSL resources</li> <li>○ <u>ADC Firmware and Config</u>: ARROWHEAD virtual Citrix ADCs need to be upgraded to the 12.x version firmware</li> </ul> </li> <li>• Configure NetScaler as the SP</li> <li>• Integrate Azure AD with ADC as IDP</li> <li>• Provide assistance with testing the authentication and authorization scenarios and troubleshooting issues as necessary.</li> </ul> <p>Note: Citrix assumed the following pre-requisite components have been successfully deployed within ARROWHEAD's environment:</p> <ul style="list-style-type: none"> <li>- Active Directory Somain Controllers to integrate with FAS servers</li> <li>- Azure AD servers t be configures as primary IDP on NetScaler for SAML authentication</li> <li>- Citrix can work with the appropriate teams to assist with either of these</li> </ul>

## 2. Deliverables

Citrix will provide the following documentation for activities within the scope of this engagement. This documentation is included in the overall work effort and fees for this engagement.

All documentation is thoroughly reviewed during the Citrix Quality Assurance process prior to delivery to review for technical accuracy, risk mitigation and alignment with Citrix Consulting's leading practices.

### 2.1. Design Phase

#### 2.1.1. Conceptual Design Summary Document

Citrix will document the following in a Conceptual Design Summary Document:

- a) A configuration summary for the components of the proposed solution.
- b) A Visio diagram of the components in the proposed solution.

### 2.2. Deploy Phase

#### 2.2.1. Environment Summary Document

Citrix will document the following in an Environment Summary Document:

- c) A configuration summary for the components of the as-built environment.
- d) A summary of key issues encountered and next steps.

## 3. Project Leadership

### 3.1. Project Lead

The role of the Project Lead is to plan and lead day-to-day project activities, making adjustments as needed per project progress, unexpected challenges, etc. and is the primary contact for the project. For example, common Project Lead tasks include (but are not limited to):

- a. Managing daily activities against the work plan.
- b. Coordinating meetings necessary for project deliverables (e.g. requirements and design review sessions).
- c. Reviewing progress with ARROWHEAD team.
- d. Communicating weekly status.

### 3.2. Service Delivery Manager

A Citrix Service Delivery Manager (SDM) will be assigned to the project to provide project management oversight, focusing on holistic project elements (as opposed to day-to-day project management) to facilitate ARROWHEAD satisfaction via project success. The SDM will typically work with the Project Lead to define a plan/structure for addressing critical project elements that will thereafter be implemented by the Project Lead. For example, common SDM tasks include (but are not limited to):

- a. Working with ARROWHEAD to define/perform pre-project setup/preparatory tasks.
- b. Working with the project lead to create an initial project schedule/work plan to align with the agreed upon delivery model, then help manage it accordingly.
- c. Helping to manage overall project scope, budget/cost, and timelines.
- d. Managing project scope/change requests and/or addendums, as needed.
- e. Helping to identify, track, and mitigate project risks.
- f. Monitoring overall project pulse/health and making as-needed adjustments to maintain success.
- g. Interactive review of project deliverables for accuracy

Note: SDM activities will primarily be conducted in a remote capacity with onsite engagement on an as needed basis

### 3.3. Enterprise Architect

The role of the Citrix Enterprise Architect (EA) will be to assist with the technical accuracy of project deliverables. The Enterprise Architect will conduct a Quality Assurance (QA) process to validate technical concepts, recommendations, procedures, and leading practices included in all project deliverables.

Note: EA activities will primarily be conducted in a remote capacity with onsite engagement on an as needed basis

### 3.4. Status Reporting

For engagements that are two weeks in duration or greater, Citrix will deliver weekly status reports that will provide visibility into status of deliverables, highlight issues for management attention and provide visibility into activities to come.

## 4. Change Management

Citrix follows a structured methodology with respect to managing unexpected scope changes or ARROWHEAD failure to meet assumptions. Such changes may be encountered in projects such as this one. If items requiring change are identified, the following are high-level steps that Citrix will follow:

- a. Discuss and confirm need for additional work with the customer.
- b. Identify additional tasks and deliverables associated with the scope change.
- c. Estimate the work effort associated with the additional tasks and deliverables.
- d. Based on the work effort estimate, determine the impact on schedule and budget, including contingency.
- e. If the scope change does not require additional project budget, then Citrix will document any changes to project scope and/or deliverables in the form of a Scope Change Addendum. This Addendum will need to be approved in writing by ARROWHEAD (email is sufficient) prior to Citrix proceeding with the engagement under the new or modified Project Scope.
- f. If the change requires additional project budget, an agreement Addendum or new agreement will need to be executed.

## 5. Engagement Assumptions

### 5.1. General Assumptions

The following are general assumptions for the engagement. Should ARROWHEAD not be able to meet these assumptions, Citrix may not be able to complete some or all of the activities defined within the 'Project Scope' (Section 2) and 'Project Document Deliverables' (Section 3) within the current project budget. ARROWHEAD would need to purchase additional hours in order to complete the project. Citrix will notify ARROWHEAD of any potential risks to project completion and/or project budget in the form of a Project Risk Memorandum, which will detail the risks, recommendations for mitigation and next steps:

- a. ARROWHEAD will confirm that the appropriate functional and technical resource(s) will be available throughout the engagement for technical discussions, build/ configuration assistance, knowledge transfer, status meetings, questions and requests.
- b. The appropriate ARROWHEAD resources will be available to cover the topics detailed in the 'Project Scope' section (Section 2) of this document.
- c. ARROWHEAD resources will be part of the project team and will be available throughout the project.
- d. All required hardware, software and necessary licenses will be set up, configured and operational in the target environment.
- e. A weekly status report will be provided and communicated to ARROWHEAD.
- f. Upon the conclusion of the engagement ARROWHEAD will be responsible to resolve any ongoing technical issues. Citrix Technical Support and Citrix Remote Services for Citrix products are available for purchase at an additional charge.
- g. Upon conclusion of the engagement, the Citrix project team will formally transition any processes and responsibilities back to ARROWHEAD.

### 5.2. Logistics Assumptions

During the pre-project/preparatory stage, it will be the responsibility of the Service Delivery Manager (SDM) assigned to the engagement to work with ARROWHEAD and determine the best approach to deliver the services for the engagement.

Depending on the SDM's assessment of ARROWHEAD's readiness, resource availability and taking into consideration a number of other factors, the engagement will be executed by leveraging on of the following models:

- a. **Full Time Virtual Engagement.** Citrix will assign a team of offsite (remote) consultants to complete the engagement on a full-time schedule.

The following are the logistics assumptions for the engagement:

- a. ARROWHEAD will provide Citrix with the name of a primary and backup project contact prior the official kickoff meeting.
- b. ARROWHEAD will provide workspace and meeting rooms for the Citrix project team throughout the duration of the project for any onsite portions of the engagement. For virtual engagements (or phases) ARROWHEAD must be able to connect to GoToMeeting sessions or provide access to an alternative screen sharing and collaboration tool.
- c. The Citrix project team should have access to the following for any onsite portions of the engagement:
  - Workspace (desk, chair, etc.) and access to offices during normal work hours as well as after hours



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- Network connections
  - Internet access
  - Telephone access
- d. A PO must be received from ARROWHEAD for Citrix to be able to set the project start date. Citrix Consulting start date approval will be based on team and skills availability, as well as ARROWHEAD readiness.
- e. If any critical assumptions are not met within a reasonable amount of time prior to the project start the start date may be delayed. This delay may result in project timelines being extended and additional effort from Citrix Consulting. This additional effort will trigger the Change Management process as previously outlined. Any changes in the start date initiated by ARROWHEAD may result in a significant delay to the project start.

## 6. Estimated Work Effort

### 6.1. Work Effort

The following is a high-level work effort for the engagement. This work effort is intended to provide general guidelines for the structure of the engagement. Additionally, this engagement is not a fixed fee engagement. Citrix will work up the time allocated below, however, if additional time is required to complete the work effort, additional time would need to be purchased.

Phase		Week				
Deliverable	Hours	1	2	3	4	5
<b>Design</b>						
FAS Integration Design	40	40				
<b>Deploy</b>						
Install and configure StoreFront with FAS	40		40			
NetScaler remote access configuration	40			40		
NetScaler code upgrade and Knowledge Transfer	40				40	
Testing and Validation	40					40
<b>Project Leadership</b>						
Project Delivery manager	20	4	4	4	4	4
Enterprise Architect	20	4	4	4	4	4
<b>Total</b>	<b>240</b>	<b>48</b>	<b>48</b>	<b>48</b>	<b>48</b>	<b>48</b>

### 6.2. Work Effort and Staffing

Based on the assumptions and requirements gathered thus far, the following is the estimated work effort for the engagement.

Phase	Staffing	Work Effort (Hours)
<b>Design</b>	Senior Virtualization Consultant Senior Networking Consultant	40
<b>Deploy</b>	Senior Virtualization Consultant Senior Networking Consultant	160
<b>Leadership</b>	Service Delivery Manager Enterprise Architect	40
<b>Total Work Effort</b>		<b>240</b>

## 7. Quote

Bill To	<b>San Bernardino County on behalf of Arrowhead Regional Medical Center</b> Adam McCartney <a href="mailto:McCartneyA@armc.sbcounty.gov">McCartneyA@armc.sbcounty.gov</a>
Quote Number	CTX05072010
Quote Expiration	<b>11/15/2020</b>
Billing Cycle	Upfront
Payment Terms	NET 30

Qty	SKU	Description	SRP	Total
5	4063690	Up to 48 hours of Citrix Consulting Services to be applied towards future work within 1 year, for avoidance of doubt, all hours not consumed within 1 year of the invoice date will be forfeit unless otherwise agreed. Not Subject to acceptance. Includes one consultant, QA reviews, and/ or project oversight. The attached Scope Document will be prepared and approved by both parties, which will define the number of credits to be redeemed for the effort, scope of work, and deliverable. Prior to engaging in project-related work, the scope of the effort will be discussed and agreed to between Citrix and the Customer. Does not include Citrix technical incident support, product enhancements, or product licenses of any kind. In order to facilitate scheduling, Citrix may begin Project Leadership work on administration and logistics (up to six hours) for the project prior to receipt of the Purchase Order. Both parties agree that this agreement applies retroactively to govern such work.	\$17,040.00 (Discounted by 5% each)	\$80,940.00
1	4070491	eLearning All-Access Subscription (Individual) (\$/Å£/â?-/Å¥)	\$7,000 (Discounted at 5% each)	\$6,650.00
<b>TOTAL (USD)</b>				<b>\$87,950.00</b>

### Notes

#### Consulting

- Prices quoted are exclusive of taxes.
- Some services may not be available in all regions.
- Contact your local office for availability.
- Consulting services terms for products which you have not yet licensed and/or installed are contained in the license program terms under which you have registered.
- The Citrix SKU determines Customer’s offering entitlement. [This Scope Document is subject to the Enterprise License Agreement Number 192619 between the parties, dated March 30, 2012.](#) For the convenience of the reader, the then-applicable consulting terms of [Enterprise License Agreement Number 192619 as of the effective date of this Scope Document are attached as Exhibit A \(Enterprise License](#)

[Program Terms](#)), [Exhibit B \(Citrix End User Services Agreement\)](#), and [Exhibit C \(Citrix License Agreement\)](#), respectively, hereto.

- Nothing contained in any purchase order or any other document submitted shall in any way modify or add to these terms and conditions.
- All purchases are final with no right of return, refund or acceptance.
- Citrix Consulting, jointly with the Customer, will evaluate the best way to provide the services, including the use of virtual delivery.
  - For virtual engagements (or phases), customer resources must be able to connect to GoToMeeting sessions or the customer must provide access to an alternative screen sharing and collaboration tool.
- This is not a fixed-fee contract and additional hours may be required if project scope changes.

## To make a payment:

Please send original PO referencing Quote # to Citrix via Email: joseph.corder@citrix.com.

**Remit Payment to:**  
 Citrix Systems, Inc.  
 P.O. Box 931686  
 Atlanta, GA 31193-1686

**CITRIX CONSULTING**  
 Joseph Corder  
 Phone: 7202016078  
 Email: joseph.corder@citrix.com

COUNTY OF SAN BERNARDINO

CITRIX SYSTEMS, INC.

\_\_\_\_\_  
Curt Hagman, Chairman, Board of Supervisors

By  \_\_\_\_\_  
(Authorized signature - sign in blue ink)

Dated: \_\_\_\_\_

Name Edgar Mansilla  
(Print or type name of person signing contract)

SIGNED AND CERTIFIED THAT A COPY OF THIS DOCUMENT HAS BEEN DELIVERED TO THE CHAIRMAN OF THE BOARD

Title Senior Manager, WW RevOps  
(Print or Type)

Lynna Monell  
Clerk of the Board of Supervisors  
of the County of San Bernardino

By \_\_\_\_\_  
Deputy

Dated: September 18, 2020