Application Delivery Resiliency Forum

January 31, 2024

Agenda

- Overview
- Status & Timeline
- Actions Required
- Support
- User Interface
- Application Programming Interface
- Global Rate Limiting & Acceptable Use Policy
- Next Steps
- References

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Overview

- Dedicated forum with increased focus on ADR to continue to engage with and support customers thru the Production Transition to new User Interface (UI) and Application Programming Interface (API) URLs, IP addresses, and infrastructure, including associated Acceptable Use Policy (AUP) updates

- Weekly on Wednesdays 1400-1500 PT starting, January 24, 2024
  - https://caiso.webex.com/caiso/j.php?MTID=ma49ce28a3ddca64e2d501f899778f620
  - Presentations & Recordings: https://www.caiso.com/informed/Pages/ReleasePlanning/Default.aspx#Independent2024

- Increase awareness of ADR implementation/cutover status and timelines
- Provide guidance for users on their transitions to the new URLs
- Communicate known issues as applicable
- Review user feedback

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Status & Timeline

- UI:
  - All new URLs (except TR) available now
  - Old URLs to be decommissioned 2/6/24
- API:
  - All new URLs available now
  - Old URLs to be cutover TBD (was 2/19/24 tentatively)

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Status & Timeline

System	UI - New	UI - Old	API - New	API - Old
BAAOP	https://baaop.caiso.com		https://ws.prod.caiso.com/sst/baaop	https://ws.caiso.com/sst/baaop
BSAP	https://bsap.caiso.com		https://ws.prod.caiso.com/sst/bsap	https://ws.caiso.com/sst/bsap
CIRA	https://cira.caiso.com	NA - Cutover	https://ws.prod.caiso.com/sst/cira	https://ws.caiso.com/sst/cira
CMRI	https://cmri.caiso.com		https://ws.prod.caiso.com/sst/cmri	https://ws.caiso.com/sst/cmri
DRRS	https://drrs.caiso.com	NA - Cutover	https://ws.prod.caiso.com/sst/drrs	https://ws.caiso.com/sst/drrs
EIDE	NA	NA	https://ws.prod.caiso.com/sst/eide	https://ws.caiso.com/sst/eide
ALFS (& FDR)	NA	NA	https://ws.prod.caiso.com/sst/runtime.asvc	https://ws.caiso.com/sst/runtime.asvc
MF	https://mf.caiso.com		https://ws.prod.caiso.com/sst/runtime.asvc	https://ws.caiso.com/sst/runtime.asvc
PISOA	NA	NA	https://ws.prod.caiso.com/sst/runtime.asvc	https://ws.caiso.com/sst/runtime.asvc
RCBSAP	https://rcbsap.caiso.com		https://ws.prod.caiso.com/sst/rcbsap	https://ws.caiso.com/sst/rcbsap
RCSERVICES (RCEIDE)	NA	NA	https://ws.prod.caiso.com/sst/rcservices	https://ws.caiso.com/sst/rcservices
SIBR	https://sibr.caiso.com		https://ws.prod.caiso.com/sst/sibr	https://ws.caiso.com/sst/sibr
STLMT	https://stlmt.caiso.com	NA - Cutover	https://ws.prod.caiso.com/sst/stlmt	https://ws.caiso.com/sst/stlmt
OMS	https://weboms.caiso.com	NA - Cutover	https://ws.prod.caiso.com/sst/weboms	https://ws.caiso.com/sst/weboms
ECIC	NA	NA	https://ws.prod.caiso.com/sst/ecic	https://ws.caiso.com/sst/ecic
CRR	https://crr.caiso.com		NA	NA
PLC	https://plc.caiso.com/		NA	NA
TR	https://tr.caiso.com	https://portal.caiso.com/tr	NA	NA
ADS	https://ads.caiso.com	NA - Cutover	https://adsws.prod.caiso.com/	NA - Cutover
OASIS	http://oasis.caiso.com	NA - Cutover	http://oasis.caiso.com	NA - Cutover
Key				
NA - Interface doesn't exist or already cutover				
Available for Transition - Users should be using now, cut over to these now				
Will be cutover - Users should move off these right away				
To be made available at a future date				
Cuotover complete				

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Actions Required

- Customers should be using new UI & API URLs now
  - Ensure pre-requisites are configured
    - Whitelist ISO IPs
    - For API, install Entrust Certificates to application server trust stores
- Please ensure you are no longer using the old UI & API URLs as soon as possible to minimize access impacts when the final cutovers occur
- Report issues to CAISO via CIDI (guidance on next slide)

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Support: Information to Provide to ISO to Streamline Troubleshooting of Access Errors

- UI or API
- URL
- Certificate
- Source IP
- Observing lack of success accessing or intermittent errors/failures
- Observing issue on new URL only, old URL only, or both new and old URLs
- Have you experienced the issue in the MAPSTAGE environment? Are you able to reproduce the issue in the MAPSTAGE environment?
- For UIs
  - Browser(s)
- For APIs
  - Request
  - Response – *Full response file*
  - Have Entrust Certificates been added to your trust stores on your application servers
  - Are you using 3rd party software
  - Who is your vendor if applicable

User Interfaces

System	UI - New	UI - Old
BAAOP	https://baaop.caiso.com	
BSAP	https://bsap.caiso.com	
CIRA	https://cira.caiso.com	NA - Cutover
CMRI	https://cmri.caiso.com	
DRRS	https://drrs.caiso.com	NA - Cutover
EIDE	NA	NA
ALFS (& FDR)	NA	NA
MF	https://mf.caiso.com	
PISOA	NA	NA
RCBSAP	https://rcbsap.caiso.com	
RCSERVICES (RCEIDE)	NA	NA
SIBR	https://sibr.caiso.com	
STLMT	https://stlmt.caiso.com	NA - Cutover
OMS	https://weboms.caiso.com	NA - Cutover
ECIC	NA	NA
CRR	https://crr.caiso.com	
PLC	https://plc.caiso.com/	
TR	https://tr.caiso.com	https://portal.caiso.com/tr
ADS	https://ads.caiso.com	NA - Cutover
OASIS	http://oasis.caiso.com	NA - Cutover
Key		
NA - Interface doesn't exist or already cutover		
Available for Transition - Users should be using now, cut over to these now		
Will be cutover - Users should move off these right away		
To be made available at a future date		
Cuotover complete		

- ➤ Cutover target for Feb 6, 2024
- ➤ No known issues to report
- ➤ ISO will continue to review CIDI cases and work with customers on isolated issues if any

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User Interfaces

- CIDIs – none to report at this time

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Application Programming Interface

System	API - New	API - Old
BAAOP	https://ws.prod.caiso.com/sst/baaop	https://ws.caiso.com/sst/baaop
BSAP	https://ws.prod.caiso.com/sst/bsap	https://ws.caiso.com/sst/bsap
CIRA	https://ws.prod.caiso.com/sst/cira	https://ws.caiso.com/sst/cira
CMRI	https://ws.prod.caiso.com/sst/cmri	https://ws.caiso.com/sst/cmri
DRRS	https://ws.prod.caiso.com/sst/drrs	https://ws.caiso.com/sst/drrs
EIDE	https://ws.prod.caiso.com/sst/eide	https://ws.caiso.com/sst/eide
ALFS (& FDR)	https://ws.prod.caiso.com/sst/runtime.asvc	https://ws.caiso.com/sst/runtime.asvc
MF	https://ws.prod.caiso.com/sst/runtime.asvc	https://ws.caiso.com/sst/runtime.asvc
PISOA	https://ws.prod.caiso.com/sst/runtime.asvc	https://ws.caiso.com/sst/runtime.asvc
RCBSAP	https://ws.prod.caiso.com/sst/rcbsap	https://ws.caiso.com/sst/rcbsap
RCSERVICES (RCEIDE)	https://ws.prod.caiso.com/sst/rcservices	https://ws.caiso.com/sst/rcservices
SIBR	https://ws.prod.caiso.com/sst/sibr	https://ws.caiso.com/sst/sibr
STLMT	https://ws.prod.caiso.com/sst/stlmt	https://ws.caiso.com/sst/stlmt
OMS	https://ws.prod.caiso.com/sst/weboms	https://ws.caiso.com/sst/weboms
ECIC	https://ws.prod.caiso.com/sst/ecic	https://ws.caiso.com/sst/ecic
CRR	NA	NA
PLC	NA	NA
TR	NA	NA
ADS	https://adsws.prod.caiso.com/	NA - Cutover
OASIS	http://oasis.caiso.com	NA - Cutover
Key		
NA - Interface doesn't exist or already cutover		
Available for Transition - Users should be using now, cut over to these now		
Will be cutover - Users should move off these right away		
To be made available at a future date		
Cuotover complete		

- ➢ Cutover TBD (target was for Feb 19, 2024)
- ➢ ISO will continue to review CIDI cases and work with customers on isolated issues if any

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Application Programming Interface

- ## CIDIs

Summary	Status	CIDI
Intermittent Connection Resets (Submits & Retrieves on SIBR, BAAOP, BSAP, CMRI, DRRS, OMS)	ISO working with customers to explore/test potential causes: - File size (larger ones failing) - Number of characters (similar to above) - Chunked versus streamed data (shift away from chunked) ISO will schedule additional working sessions with customers as appropriate	269278 26941827 0168 270431 271384
Intermittent HTML Response "BIG-IP logout page" (Submits & Retrieves on ADS, BSAP, SIBR, CMRI, ALFS)	ISO requesting customers to provide the full response files for further review ISO will schedule additional working sessions with customers as appropriate	269464 269347 269793 270088

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Global Rate Limiting & Acceptable Use Policy

- **Global Rate Limit:**
  - *https://developer.caiso.com/Documents/Technical-Specification-Rate-Limits-and-AUP-Implementation-v3.0.pdf*
  - 30 per second across all the WS below combined per TCP source supported on the WS endpoint (1800 connections per minute); this includes submits and retrieves for **ws.prod.caiso APIs**:
    - BAAOP/BSAP/CIRA/CMRI/DRRS/EIDE/ALFS (& FDR)/MF/PISOA/RCBSAP/RCSERVICES (RCEIDE)/SIBR/STLMT/OMS/ECIC
  - The Global Rate Limit is enforced by namespace: WS (above), OASIS, and ADS
- **Service-Level Acceptable Use Policy (AUP) for CMRI, DRRS, and MRI-S**
  - In addition to the Global Rate Limit above, these systems will have an additional layer of protection
  - CMRI
    - Tech Spec
    - retrieves will leverage a 5-second period for enforcement for all CMRI services
    - there are no CMRI submits
  - DRRS Tech Spec
    - Both submits and retrieves will leverage a 30-second period for enforcement for all DRRS services
  - MRI-S (STLMT) Tech Spec
    - Retrieves of **METER DATA** will leverage a 30-second period for enforcement
    - submits will not have any additional layer of protection other than the Global Rate Limit above

Global Rate Limiting & Acceptable Use Policy

- CIDIs

Summary	Status	CIDI
Clarification on Global Rate Limit on WS	Addressed on 1/24 call and presentation	270195
Enhancement Request: Application AUP – Consider including SCID in the key	Under ISO review	271088

Next steps

- Presentations and recordings will be published on www.caiso.com > Stay Informed > Release Planning > 2024 Releases > Independent 2024 > Application Delivery Resiliency

- Next occurrence Wednesday, February 7, 2024

References

- https://developer.caiso.com

- Application Delivery Resiliency Forum Presentations

- Technical User Group Presentations

- Release User Group Presentations

- Contact:
  - CIDI
  - Trang Vo, Release Manager
    - tvo@caiso.com
    - release@caiso.com
  - Hugo Frech, Executive Director, IT Infrastructure, Architecture & Information Security
    - hfrech@caiso.com

- The following slides are for reference

UI & API URL & IP Changes (Application Delivery Resiliency)

- Areas
  - Access Policy Manager - Application Authentication
  - Local Traffic Manager - Load Balancing
  - Application Security Manager - Web Application Firewall

- User Impacts & Actions
  - New IP ranges requiring firewall changes
    - Please open the entire 45.42.16.0/21 network on ports 80 & 443 for our new IP space
  - New URLs for UIs and APIs requiring cutover
  - No application functionality changes expected
  - No provisioning changes expected

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UI & API URL & IP Changes (Application Delivery Resiliency)

<u>Current API Notice</u>: The California ISO implementation of the first phase of the Production Application Programming Interface (API) Web Service (WS) Uniform Resource Locator (URL) cutovers is now completed as of for Nov. 15, 2023 and has made the new Production API WS URLs available. The next and final phase of the Production API WS URL cutovers is now scheduled for TBD (was Feb. 19, 2024) and will move the existing Production API WS URLs to new infrastructure.

Phase 1 – Nov. 15, 2023 COMPLETE
- No changes to existing API WS URLs: https://ws.caiso.com/sst/<SYSTEM>/<SERVICE>
- New API WS URLs are available: https://ws.**prod**.caiso.com/sst/<SYSTEM>/<SERVICE>
- Access to the new API WS URLs consist of the following that will require users to be configured per below:
    - **New IPs: Please open the entire 45.42.16.0/21 network on ports 80 & 443 for the new CAISO IP space**
    - **New Certificate Authority (was Verizon and is now Entrust): Please add the two Entrust certificates to your application trust stores on your servers**
    - **Global Rate Limit**
        - 30 per second across all the WS below combined per TCP source supported on the WS endpoint (1800 connections per minute); this includes submits and retrieves:
            - BAAOP/BSAP/CIRA/CMRI/DRRS/EIDE/ALFS (& FDR)/MF/PISOA/RCBSAP/RCSERVICES (RCEIDE)/SIBR/STLMT/OMS/ECIC
    - **Service-Level Acceptable Use Policy (AUP) for CMRI, DRRS, and MRI-S**
        - In addition to the Global Rate Limit above, these systems will have an additional layer of protection
        - CMRI
            - retrieves will leverage a 5-second period for enforcement
            - there are no CMRI submits
        - DRRS
            - Both submits and retrieves will leverage a 30-second period for enforcement
        - MRI-S (STLMT)
            - Retrieves of METER DATA will leverage a 30-second period for enforcement
            - submits will not have any additional layer of protection other than the Global Rate Limit above

Phase 2 – TBD (was Feb. 19, 2024 tentatively)
- No additional changes to the new API WS URLs made available in Phase 1: https://ws.**prod**.caiso.com/sst/<SYSTEM>/<SERVICE>
- The existing API WS URLs: https://ws.caiso.com/sst/<SYSTEM>/<SERVICE> will be cutover to new underlying infrastructure
- Access to the existing API WS URLs will now also require users to be configured per below (same as above):
    - New IPs
    - New Certificate Authority (was Verizon and is now Entrust)
    - Global Rate Limit
    - Service-Level Acceptable Use Policy (AUP) for CMRI, DRRS, and MRI-S

Customers are encouraged to contact Trang Vo at tvo@caiso.com or release@caiso.com and/or submit a CIDI case for any questions.

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UI & API URL & IP Changes (Application Delivery Resiliency)

Production API Transition Plan – **Actions Necessary for API Users**

- SOFT CUTOVER: Production new API URLs (ws.prod.caiso) *as of Nov 15, 2023* to transition
    - **Customers strongly encouraged to cut over to these permanent new API URLs as soon as possible to minimize impacts for the final hard cutover Feb 19, 2024. Please let the ISO know if you need assistance transitioning to the new URLs.**
- **HARD CUTOVER: Production current/existing (ws.caiso) API URLs cutover TBD (target was *Feb 19, 2024*)**
    - **New infrastructure**
    - **New IPs**
    - **New Certificate Authority (Entrust)**
    - **Service-Level AUP for CMRI/DRRS/MRI-S**
- **Production new API URLs (ws.prod.caiso) will remain available indefinitely; users can continue using the new URLs**
- Please open the entire 45.42.16.0/21 network on ports 80 & 443 for our new IP space to access new API URLs

- The Production transition and cut-over will be different than how MAP-STAGE occurred. The new APIs are available as of 11/15/23.

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UI & API URL & IP Changes (Application Delivery Resiliency)

Customers should cut over to the new URLs ws.prod.caiso.com starting 11/15/23 and as soon as possible before 2/19/24.

New URLs: ws.prod.caiso.com
Existing URLs: ws.caiso.com
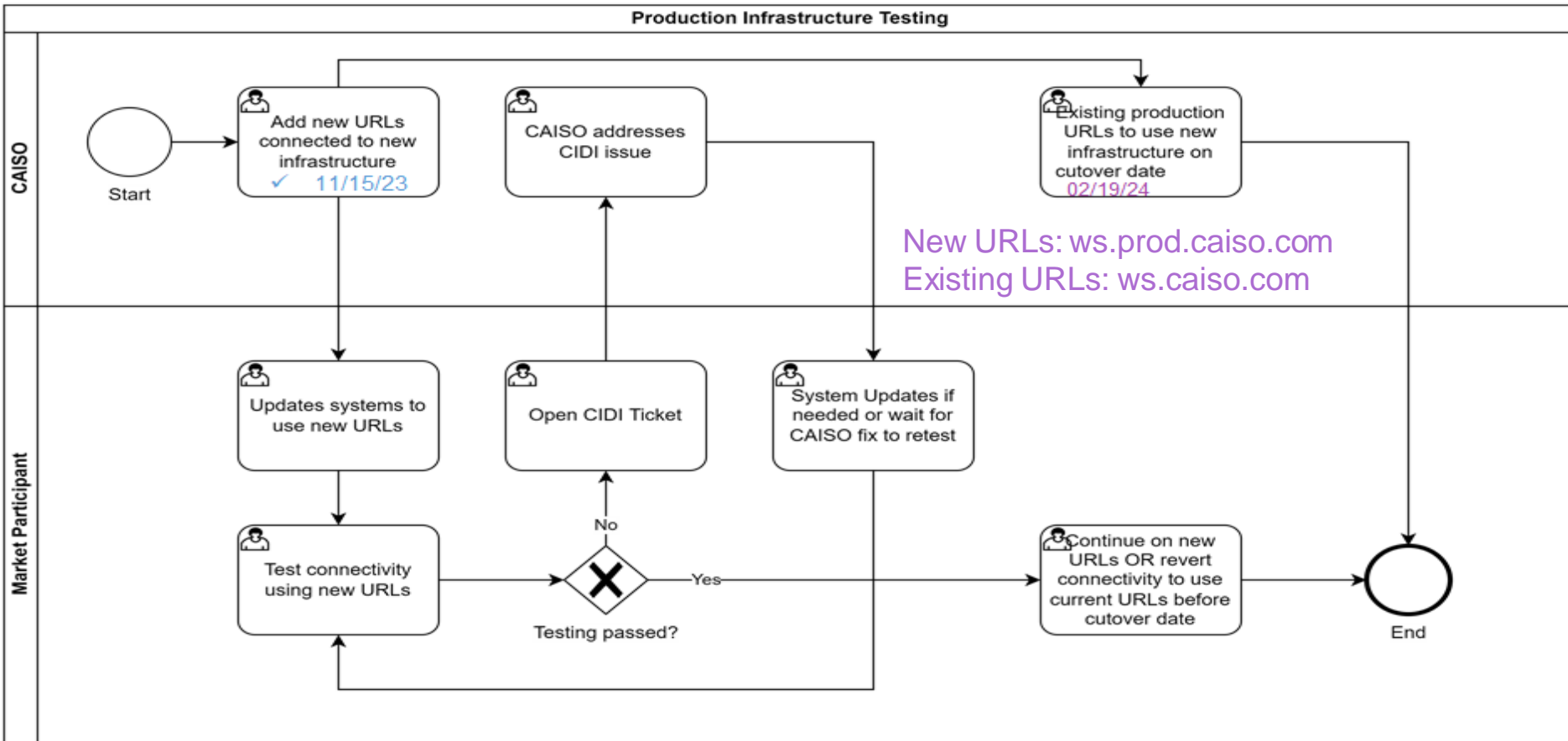
UI & API URL & IP Changes (Application Delivery Resiliency)

1. 1) Here are the API URL formats for non-Production & Production; note what is available/permanent

	Old	New URL & Infrastructure	New
MAPSTAGE	Deprecated & no longer available as of 9/21/23 • https://wsmap.caiso.com/sst/<SYSTEM>/<SERVICE> • https://wsmap.caiso.com/sst/<SYSTEM>/<SERVICE>_DocAttach	NA	Available permanently since 5/18/23 • https://mapstage-ws.caiso.com/sst/<SYSTEM>/<SERVICE> • https://mapstage-ws.caiso.com/sst/<SYSTEM>/<SERVICE>_DocAttach
PRODUCTION	Available now on existing infrastructure • https://ws.caiso.com/sst/<SYSTEM>/<SERVICE> • https://ws.caiso.com/sst/<SYSTEM>/<SERVICE>_DocAttach	Available now as of 11/15/23 on new infrastructure ready for customers to transition to • https://ws.prod.caiso.com/sst/<SYSTEM>/<SERVICE> • https://ws.prod.caiso.com/sst/<SYSTEM>/<SERVICE>_DocAttach	Original URLs to be cut-over to new infrastructure at a future date target 2/19/24 • https://ws.caiso.com/sst/<SYSTEM>/<SERVICE> • https://ws.caiso.com/sst/<SYSTEM>/<SERVICE>_DocAttach

2. As mentioned on the call and shown above, there are URL/IP changes in flight now for the APIs
    1. Please open the entire 45.42.16.0/21 network on ports 80 & 443 for our new IP space
    2. There is a new Certificate Authority for the new APIs (changed from Verizon to Entrust)
    3. API Acceptable Use Policy: In addition the existing global rate limit of 30 per second across all the apps combined supported on the WS endpoint (1800 connections per minute), here are additional protections within these apps on the new URLs
        1. These will return a SOAP fault with AUP fails:
        2. <SOAP-ENV:Fault>
            <faultcode>SOAP-ENV:Server</faultcode>
            <faultstring xml:lang="en">429: CAISO Acceptable Use Policy Violation. Please retry your request after <n> seconds.</faultstring>
            <detail>
        3. Apps
            1. CMRI
            2. DRRS
            3. STLMT
    4. Impacted APIs on next slide

	Old	New URL & Infrastructure	New
MAPSTAGE	Deprecated & no longer available as of 9/21/23 • https://wsmap.caiso.com/sst/<SYSTEM>/<SERVICE> • https://wsmap.caiso.com/sst/<SYSTEM>/<SERVICE>_DocAttach	NA	Available permanently since 5/18/23 • https://mapstage-ws.caiso.com/sst/<SYSTEM>/<SERVICE> • https://mapstage-ws.caiso.com/sst/<SYSTEM>/<SERVICE>_DocAttach
PRODUCTION	Available now on existing infrastructure • https://ws.caiso.com/sst/<SYSTEM>/<SERVICE> • https://ws.caiso.com/sst/<SYSTEM>/<SERVICE>_DocAttach	Available now as of 11/15/23 on new infrastructure ready for customers to transition to • https://ws.prod.caiso.com/sst/<SYSTEM>/<SERVICE> • https://ws.prod.caiso.com/sst/<SYSTEM>/<SERVICE>_DocAttach	Original URLs to be cut-over to new infrastructure at a future date target 2/19/24 • https://ws.caiso.com/sst/<SYSTEM>/<SERVICE> • https://ws.caiso.com/sst/<SYSTEM>/<SERVICE>_DocAttach

Production	Existing Production API	New URL for Transition of Production API	Existing/Original Production API URLs to be cut over to new infrastructure and IPs
BAAOP	https://ws.caiso.com/sst/baaop	https://ws.prod.caiso.com/sst/baaop	https://ws.caiso.com/sst/baaop
BSAP	https://ws.caiso.com/sst/bsap	https://ws.prod.caiso.com/sst/bsap	https://ws.caiso.com/sst/bsap
CIRA	https://ws.caiso.com/sst/cira	https://ws.prod.caiso.com/sst/cira	https://ws.caiso.com/sst/cira
CMRI	https://ws.caiso.com/sst/cmri	https://ws.prod.caiso.com/sst/cmri	https://ws.caiso.com/sst/cmri
DRRS	https://ws.caiso.com/sst/drrs	https://ws.prod.caiso.com/sst/drrs	https://ws.caiso.com/sst/drrs
EIDE	https://ws.caiso.com/sst/eide	https://ws.prod.caiso.com/sst/eide	https://ws.caiso.com/sst/eide
ALFS (& FDR)	https://ws.caiso.com/sst/runtime.asvc	https://ws.prod.caiso.com/sst/runtime.asvc	https://ws.caiso.com/sst/runtime.asvc
MF	https://ws.caiso.com/sst/runtime.asvc	https://ws.prod.caiso.com/sst/runtime.asvc	https://ws.caiso.com/sst/runtime.asvc
PISOA	https://ws.caiso.com/sst/runtime.asvc	https://ws.prod.caiso.com/sst/runtime.asvc	https://ws.caiso.com/sst/runtime.asvc
RCBSAP	https://ws.caiso.com/sst/rcbsap	https://ws.prod.caiso.com/sst/rcbsap	https://ws.caiso.com/sst/rcbsap
RCSERVICES (RCEIDE)	https://ws.caiso.com/sst/rcservices	https://ws.prod.caiso.com/sst/rcservices	https://ws.caiso.com/sst/rcservices
SIBR	https://ws.caiso.com/sst/sibr	https://ws.prod.caiso.com/sst/sibr	https://ws.caiso.com/sst/sibr
STLMT	https://ws.caiso.com/sst/stlmt	https://ws.prod.caiso.com/sst/stlmt	https://ws.caiso.com/sst/stlmt
OMS	https://ws.caiso.com/sst/weboms	https://ws.prod.caiso.com/sst/weboms	https://ws.caiso.com/sst/weboms
ECIC	https://ws.caiso.com/sst/ecic	https://ws.prod.caiso.com/sst/ecic	https://ws.caiso.com/sst/ecic

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UI & API URL & IP Changes (Application Delivery Resiliency) – Certification Authority

- New Certificate Authority
  - There is a new certificate authority for the new API URL infrastructure: It was Verizon and is now Entrust
  - Please add the two certificates to your application trust stores on your servers to access the new API URL infrastructure
  - The new Production API URLs and existing Production API URLs after cutover have a different Root and Intermediate certificate:
    - Entrust Root Certification Authority – G2
    - Entrust Certification Authority – L1M

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UI & API URL & IP Changes (Application Delivery Resiliency) – Certification Authority

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UI & API URL & IP Changes (Application Delivery Resiliency) – Certification Authority Questions

What do API customers need to do to access new URLs and maintain access to existing URLs after the cutover?

- Add the two Entrust certificates to your application trust stores on your servers (see image on previous slide)

Will customers be able to access the current Production API URLs (pre-cutover) after adding the two Entrust certificates?

- Yes, this is an addition of the two Entrust certificates to your trust store, but the existing Verizon certificates will still be there and work for the current Production API URLs pre-cutover

When should customers add the two Entrust certificates to their Production server application trust stores?

- This can be done now without impacting Production API access (see above), and should be done prior to 11/9 to access the new Production API URLs (ws.prod.caiso, and should be done NLT 12/20 to avoid impacts to Production API access on the existing API URLs (ws.caiso)

How will user certificates be impacted?

- No changes needed to user certificates for the Production API URL cutover
- User certificates are also changing from Verizon to Entrust as they expire and are renewed, but do not need to be on Entrust prior to the Production API URL cutover
- For example, if a user has an existing Verizon user certificate that expires mid-2024, that Verizon user certificate will still be able to access the new Production API URL infrastructure (11/9/23 onwards for new URLs, and 12/21/23 onwards for existing URLs)

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UI & API URL & IP Changes (Application Delivery Resiliency) -
New Certification Authority

References

- Entrust L1M Certificate Authority: http://web.entrust.com/subca-certificates/L1M-G2-Xcert_20141215.cer?_gl=1*1pabf82*_ga*MTk2NDQzNTE0LjE2ODc0NjQ1NjA.*_ga_6QRW66BW5T*MTY4NzQ2NDU1OS4xLjEuMTY4NzQ2NDU4MS4zOC4wLjA.&_ga=2.121940939.1908197984.1687464560-196443514.1687464560

- Entrust Root Certificate Authority: https://web.entrust.com/root-certificates/entrust_g2_ca.cer?_gl=1*1t3efhy*_ga*MTk2NDQzNTE0LjE2ODc0NjQ1NjA.*_ga_6QRW66BW5T*MTY4NzQ2NDU1OS4xLjEuMTY4NzQ2NDgxMy41NS4wLjA.&_ga=2.127397581.1908197984.1687464560-196443514.1687464560

- Parent pages these came from:
    - https://www.entrust.com/knowledgebase/ssl/entrust-certificate-services-subordinate-cas
    - https://www.entrust.com/resources/certificate-solutions/tools/root-certificate-downloads

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UI & API URL & IP Changes

Phase 1: Cutover for new API URLs

- CAISO previously sent communications on the soft cutover for the new API URLs in the MAP Stage environment. Market Participants are required to validate access and transition to the new API URLs before August 15, 2023. The old API URLs in MAP Stage are no longer available as of September 1, 2023. For Production, the new permanent APIs are available as of 11/15/23 and customers strongly encouraged to cut over to these permanent new API URLs as soon as possible to minimize impacts for the final hard cutover Feb 19, 2024. Please let the ISO know if you need assistance transitioning to the new URLs.

Phase 2: Cutover for new UI URLs

- Starting on July, 27, 2023, some of the ISO applications will be available for testing starting in the MAP Stage environment and then Production. Application access is based on the user's provisioning. No application down n time is expected. We will send additional communication for the remaining UI URLs once they are ready for validation.

Action requested:

- Market Participants can begin accessing the new UI URLs in parallel with the current UI URLs for a window of time.
- The timeline to validate access and transition to the new UI URLs for each environment is shorter than the API timeline; therefore, action is needed sooner.
- Once the new UI URLs are deployed into Production, Market Participants have until Tuesday, February 6, 2024 to validate and transition to the new UI URLs.
- For the APIs, customers strongly encouraged to cut over to these permanent new API URLs as soon as possible to minimize impacts for the final hard cutover Feb 19, 2024. Please let the ISO know if you need assistance transitioning to the new URLs.

Applications & Environments	Deployment Start Dates	New User Interface (UI) URLs	Deprecation of Old URL
Balancing Area Authority Operations Portal (BAAOP)			
MAP Stage	Fri 7/28/23	https://mapstage-baaop.caiso.com	Fri 12/8/23
Production	Wed 9/20/23	https://baaop.caiso.com	Tue 2/6/24
Base Schedule Aggregation Portal (BSAP)			
MAP Stage	Fri 7/28/23	https://mapstage-bsap.caiso.com	Fri 12/8/23
Production	Mon 10/16/23	https://bsap.caiso.com	Tue 2/6/24
Reliability Coordinator Base Schedule Aggregation Portal (RCBSAP)			
MAP Stage	Fri 7/28/23	https://mapstage-rcbsap.caiso.com	Fri 12/8/23
Production	Tue 10/26/23	https://rcbsap.caiso.com	Tue 2/6/24
Schedule Infrastructure & Business Rules (SIBR)			
MAP Stage	Fri 7/28/23	https://mapstage-sibr.caiso.com	Fri 12/8/23
Production	Mon 10/16/23	https://sibr.caiso.com	Tue 2/6/24
Reporting (Includes SIBR Reports, Transmission Registry, RIMS, Master File, and FSP folder)			
MAP Stage	Mon 7/31/23	https://mapstage-reporting.caiso.com	Fri 12/8/23
Production	Tue 12/5/23	https://reporting.caiso.com	Tue 2/6/24
Market Participant Portal (MPP)			
MAP Stage	Thu 01/11/24	https://mapstage-mpp.caiso.com	Tue 1/23/24
Production	Tue 02/06/24	https://mpp.caiso.com	Tue 2/6/24
Customer Market Results Interface (CMRI)			
MAP Stage	Thu 8/3/23	https://mapstage-cmri.caiso.com	Fri 12/8/23
Production	Thu 10/19/23	https://cmri.caiso.com	Tue 2/6/24
Congestion Revenue Rights (CRR)			
MAP Stage	Mon 8/7/23	https://mapstage-crr.caiso.com	Fri 12/8/23
Production	Thu 10/19/23	https://crr.caiso.com	Tue 2/6/24
WEIM Portal			
MAP Stage	Done	https://mapstage-weim.caiso.com	Fri 12/8/23
Production	Done	https://weim.caiso.com	Tue 2/6/24
Master File (MF)			
MAP Stage	Wed 8/9/23	https://mapstage-mf.caiso.com	Fri 12/8/23
Production	Thu 10/19/23	https://mf.caiso.com	Tue 2/6/24
Transmission Registry (TR)			
MAP Stage	Tue 9/5/23	https://mapstage-tr.caiso.com/	Fri 12/8/23
Production	Tue 2/27/24	https://tr.caiso.com	TBD
Path Limit Calculator (PLC)			
Production	Thu 10/19/23	https://plc.caiso.com/	Tue 2/6/24
Hosted Advanced Network Applications (HANA) Base / HANA Study			
Production	Tue 10/26/23	https://hana.caiso.com/ https://hanastudy.caiso.com/	Tue 2/6/24

California ISO