



Call Management System (CMS)

High Availability - Admin-Sync
Dual-IP Feature - Failure Scenarios

Updated: May 24, 2023

Important Notice

Certain statements contained in this document are forward-looking statements. These statements may be identified by the use of forward-looking terminology such as "anticipate," "believe," "continue," "could," "estimate," "expect," "intend," "intent", "may," "might," "plan," "potential," "predict," "should" or "will" or other similar terminology. We have based these forward-looking statements on our current expectations, assumptions, estimates and projections. While we believe these expectations, assumptions, estimates and projections are reasonable, such forward looking statements are only predictions and involve known and unknown risks and uncertainties, many of which are beyond our control. These and other important factors may cause our actual results, performance or achievements to differ materially from any future results, performance or achievements expressed or implied by these forward-looking statements. For a list and description of such risks and uncertainties, please refer to Avaya's filings with the SEC that are available at www.sec.gov/. Avaya disclaims any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

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NOTE:

High Availability CMS is a complex subject that can have many different potential failure scenarios.

It is highly recommended to make design decisions based on the needs of your business as different architectures will not have the same results.

Surprises can be minimized by planning ahead.

The background of the slide is a repeating red geometric pattern on a white background. The pattern consists of interlocking lines that form a series of circles and chevrons. The circles are arranged in a grid, and the chevrons are formed by the lines connecting the circles. The overall effect is a complex, symmetrical, and rhythmic design.

Terminology

Communication Manager (CM) Terminology

Communication Manager (CM)

- ▶ The Main CM for call processing
- ▶ All phones and trunks terminate here during “sunny day” operation
- ▶ Administration is done here and will automatically push to survivable servers (ESS)
- ▶ Up to 4 CMS connections for Elite and 8 CMS connections for Extended Capacity

Enterprise Survivable server (ESS)

- ▶ Survivable Core
- ▶ Independent of the Main CM both functionally and geographically
- ▶ Same functionality and capacity as the Main CM
- ▶ Can handle call processing for the entire network

Local Survivable Processor (LSP)

- ▶ Survivable Remote
- ▶ Remote geographical location
- ▶ Designed for short periods of time
- ▶ Call processing for a subset of the network (not an entire large network)

CM Fragmentation

- ▶ A network or hardware failure
- ▶ The Main CM is not able to process all the calls
- ▶ The Main CM could be partially active and processing some calls
- ▶ The ESS/LSP could be partially active and processing some calls also.

Call Management System (CMS) Terminology

Main	High Availability (Primary / Secondary)	Standalone Survivable	Dual-IP	Alternate
<ul style="list-style-type: none">▶ A single CMS▶ Not High Availability▶ Up to 8 ACD connections per CMS▶ CMS's with no High Availability software installed	<ul style="list-style-type: none">▶ Redundant CMS's collecting data from the same ACD▶ ACD's connecting to the Primary must also connect to the Secondary in the same order▶ CMS Connectors are installed on these	<ul style="list-style-type: none">▶ A warm stand-by CMS usually co-located with a survivable ACD▶ Only supports a connection to an ESS or LSP▶ Collects data when the survivable ACD is active▶ Requires a separate Main CMS	<ul style="list-style-type: none">▶ Dual-IP is a CMS that is used for both "sunny day" and "rainy day" operation▶ Connections to both main ACD and ESS or LSP▶ Dual-Role is a deprecated architecture on a Secondary CMS	<ul style="list-style-type: none">▶ A CMS used for additional capacity▶ Supervisors can run reports.▶ No administration can be performed.▶ CMS Connectors are not installed.

Primary CMS

- The production CMS that is used in a “sunny day” scenario.
- Supervisors log into this CMS first.
- **All administration must be performed on this CMS.**
- CMS Connectors are installed on this CMS.
- Admin-Sync software is run from this CMS.

Dual-IP Primary CMS

- Available starting with R19.1 CMS (February 2020)
- A Primary CMS that also supports ESS or LSP.
 - ESS or LSP connection is via Processor Ethernet (PE).
 - **The same ACD number is used for data collection.**
 - Two CM IP addresses per ACD are administered in the CMS connection form (one for each CM).

Secondary CMS

- A redundant CMS that is typically located in another data center.
 - **Same release and licenses, equivalent platform, capacity, and size as the Primary CMS.**
 - There is no memory shadowing, database clustering, etc.
 - Has its own links to Communication Managers.
- Supervisors only log into this CMS if the Primary CMS is down.
- Admin data is pushed to this CMS once a day.
 - **No administrative changes should be made on this CMS as they will be overwritten nightly.**
- CMS Connectors can be installed on this CMS.
 - The HA Heartbeat software determines when to start the connectors.

Dual-IP Secondary CMS

- Available starting with R18.0.1 CMS (June 2017)
- A Secondary CMS that also supports ESS or LSP.
 - ESS or LSP connection is via Processor Ethernet (PE).
 - **The same ACD number is used for data collection.**
 - Two CM IP addresses per ACD are administered in the CMS connection form (one for each CM/ESS/LSP).

Dual-Role Secondary CMS (deprecated)

- A Secondary CMS that also supports ESS or LSP.
 - ESS or LSP connection(s) can be either CLAN or Processor Ethernet (PE).
- If ESS or LSP is connected via CLAN.
 - **The same ACD number is used for data collection.**
- If ESS or LSP is connected via PE.
 - **A different ACD number is used for data collection.**

Standalone Survivable CMS

- A warm stand-by CMS that is co-located with the ESS or LSP.
- **Only collects data when the ESS / LSP is active.**
- CMS Connectors for third-party applications are not supported.
- Can be configured as a smaller platform with fewer Agents and Supervisors if the location is supporting a sub-set of the entire enterprise.
- Supervisors can log into this CMS during a CM fragmentation scenario for reporting, but **no administration should be done.**
- Could be combined with the Dual-IP feature to cover more than one ACD.

Alternate CMS

- An additional CMS that is used in a “sunny day” scenario to allow for additional capacity.
- Supervisors may log into this CMS.
- **All administration must be performed on the Primary CMS.**
- CMS Connectors are not installed.

Additional Definitions

Admin-Sync	Add-on software that pushed administrative data nightly from the Primary CMS to other CMS's. It is also used for manually restoring/merging historical call data after failure scenarios. It cannot merge administrative data that differs between CMS's.
Business Process Contingency	Having real-time reporting functionality under various failure scenarios. This is the intention of Survivable ACD's and multiple CMS's.
Database Redundancy	Having the ability to restore historical databases to as much completeness as possible after a failure scenario is fixed. This is the intention of HA CMS, although some scenarios may result in small windows of data loss.
Interval of Fragmentation and Interval of Restore	The start and stop intervals in CMS in which the failures occurred. In some scenarios, data loss may occur during these intervals. Failover is usually automatic, but failback is manual so that data loss is minimized.

The background of the slide is a repeating geometric pattern of red and white lines. The pattern consists of interlocking, angular shapes that create a sense of depth and movement, resembling a stylized maze or a complex lattice structure. The red lines are set against a white background, and the overall effect is a vibrant, high-contrast visual.

High Availability

High Availability (HA) CMS

- Provides CMS redundancy.
 - **Each CMS has an independent connection to the same CM.**
 - Each CMS does not know about other CMS's or synchronize automatically. Admin-Sync software is required.
- **Active / Active for data collection and reporting.**
 - Real-time data will be collected by all CMS's, but the clocks can be off by a small amount.
 - Secondary and Alternate CMS's can be used for expanded reporting capabilities, but not administration.
- **Active / Stand-by for CMS Connectors.**
 - Active CMS Connectors are installed on the Primary CMS with warm-standby connectors on the Secondary CMS.
- Admin-Sync add-on software pushes administration data from Primary CMS to Secondary CMS (and others) nightly.
 - Also allows for push/pull/merge of historical table data.

Admin-Sync

- Add-on software that is required for all HA and Survivable deployments.
- **Nightly push (configurable) of administration data from the Primary CMS to the Secondary CMS, Alternates, and any Survivable(s).**
- Allows for manual push/pull (overwrite) of historical interval data (syncing between Primary and Secondary CMS).
- HA Heartbeat functionality where the Secondary CMS automatically identifies an unreachable Primary CMS and starts up the CMS Connectors.

Survivable Additions for Dual-IP or Standalone Survivable

- Additional software and configuration required for a Dual-IP or Standalone Survivable.
- **Provides the ability to aggregate (merge) historical data from a Survivable ACD to the corresponding ACD on the Primary CMS (menu-driven process).**
- CMS Connectors are not supported on Standalone Survivable CMS's.
 - This is largely due to failure scenarios that can result in multiple feeds active at the same time.
- CMS Connectors are supported on the Secondary CMS
 - The ACD number stays the same in the feeds.
- For R20 CMS and newer, this is included with the Admin-Sync package by default.

Historical Data Aggregation

- **Always run from the Admin-Sync menu on the Primary CMS.**
 - Manual execution from the terminal menu – cannot be scheduled.
- **Need to enter the exact time of fragmentation and time of restore.**
 - Use ACD link-down threshold screen or CMS elog to get this information.
 - For CLAN and Dual-IP the interval of fragmentation and interval of restore will not be aggregated.
 - For Survivable CMS the interval of fragmentation and interval of restore will be aggregated.
 - Data is summarized & merged (pulled) from the Secondary/Survivable to the Primary.
 - Data is then pushed back (overwritten) from Primary to Secondary/Survivable to keep in sync.



Dual-IP Feature

Dual-IP Feature

- Available starting with R18.0.1 CMS (June 2017) for Dual-IP Secondary
- Available starting with R19.1 CMS (February 2020) for Dual-IP Primary
- Available starting with R19.2 CMS (October 2021) for Dual-IP Survivable
- **Allows 2 CM IP addresses to be administered to the same ACD in CMS.**
- Upon CMS startup or any link outage:
 - CMS will attempt to connect to the Primary CM IP address 5 times at 30 second intervals.
 - CMS will attempt to connect to the Secondary CM IP address 2 times at 30 second intervals.
 - This 'round robin' cycle will continue until a link is established.
- **CMS will stay connected to the established link until the link drops.**
 - Recommendation is to reset manually via CMS menu at a controlled time.
 - A network or CM reset (busy mis) will also reset the link.

Dual-IP Feature (Continued)

- **A Main CM and ESS/LSP can NOT both be active and connected to the same CMS ACD at the same time**, since one ACD on a CMS can only connect to one IP Address.
 - This is the same limitation that exists with legacy CLAN configurations.
 - If customers want the main CM and ESS/LSP to be active and collecting data simultaneously, the Standalone Survivable CMS offer is the best option.
 - If there is a main CM fragmentation, the Primary CMS may continue to collect data from the main CM and the ESS/LSP may also connect to the Secondary CMS.
 - Since the Secondary CMS is usually co-located with the ESS/LSP, unless the Secondary CMS is still connected to the remote main CM, the connection would be established to the co-located ESS/LSP.
- **CMS Connectors will show the same ACD number on the Secondary CMS during WAN failover (ESS/LSP).**

Dual-IP Advantages

- **The ACD number is the same**
 - Does not require two ACD's on either CMS
 - No need for separate ACD for ESS/LSP (PE)
- ACD number in External Call History data stays the same
- ACD number in CMS Connectors stays the same
 - RTA, rt_socket, workforce management, etc.
- **Secondary and Survivable CMS's can be deployed as needed to provide coverage in different data centers.**

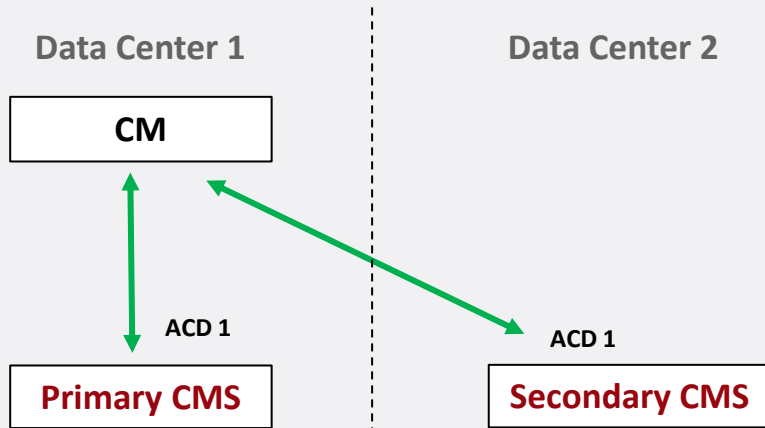
Dual-IP Impact to CMS Connectors

- The Admin-Sync software on all R18.x CMS's must be upgraded when changing to Dual-IP.
 - **The minimum version of Admin-Sync needed is 6.5.3.**
- Third-party interfaces do not have to upgrade for existing R18.X CMSs
 - **Reconfiguration may be needed (ACD 2 to ACD 1 for example)**
- For CMS's upgrading from earlier releases, all interfaces, including Admin-Sync and Survivable Additions must upgrade.
 - This is a current requirement and does not change with the introduction of Dual-IP.



High Availability (HA) Scenarios

HA CMS (only) – Normal Operation

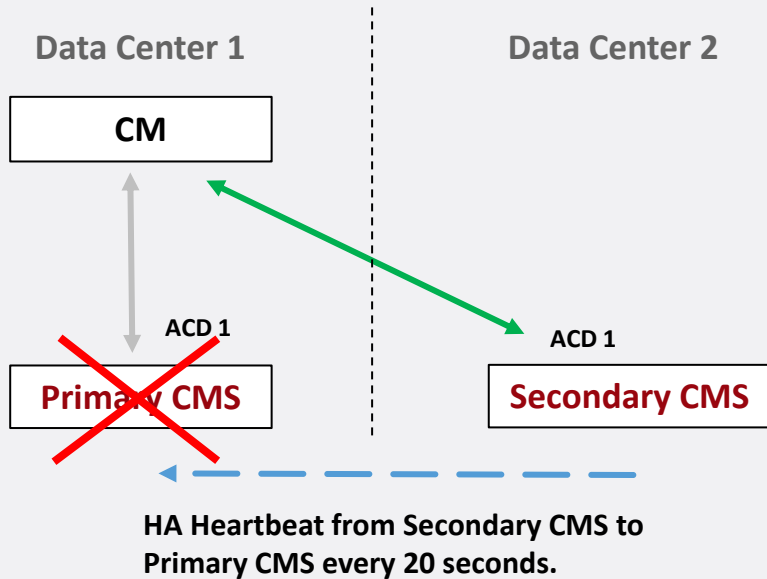


HA Heartbeat from Secondary CMS to Primary CMS every 20 seconds.

Notes

- ▶ Secondary CMS is connected to the same CM as the Primary CMS.
- ▶ Primary CMS is set as active for CMS Connectors

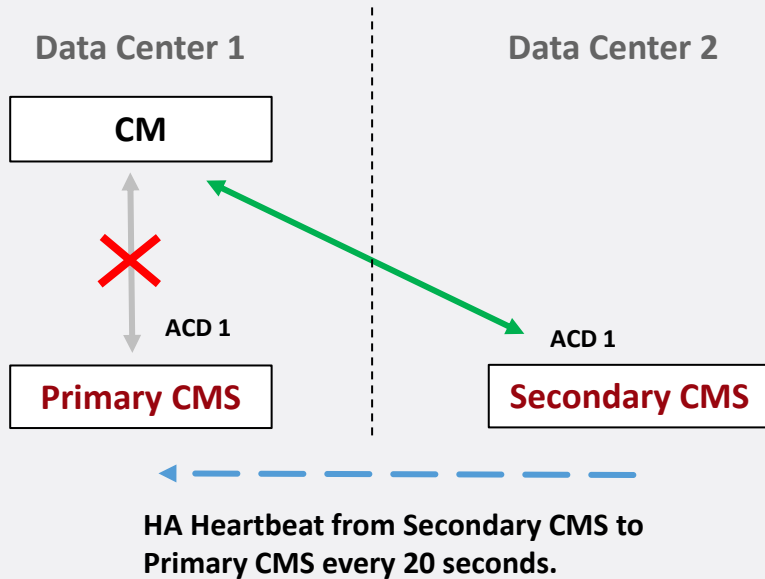
HA CMS (only) – Network (or hardware) Failure



Notes

- ▶ HA Heartbeat determines there is a Primary CMS network (or hardware) failure
- ▶ HA Heartbeat sets the Secondary CMS as active for CMS Connectors
- ▶ CMS Connectors automatically start on the Secondary CMS

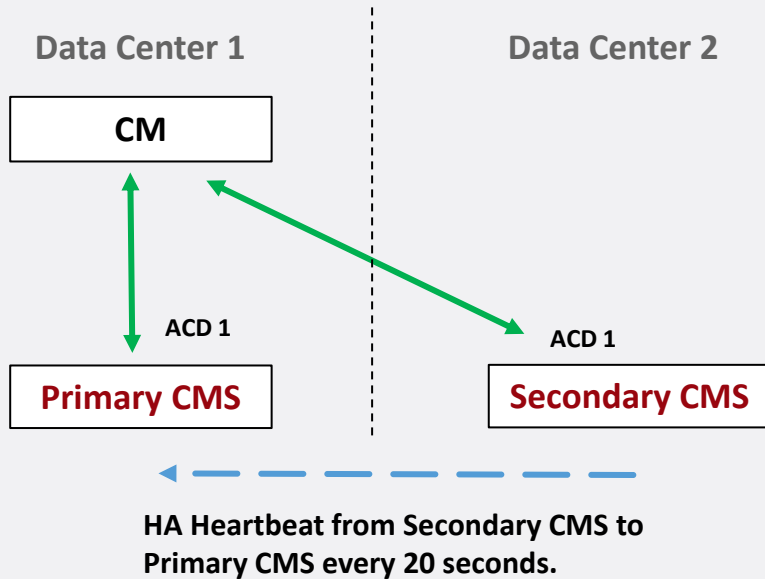
HA CMS (only) – CM Link Failure



Notes

- ▶ HA Heartbeat still working normally
- ▶ Secondary CMS does not know the link failed on the Primary CMS
- ▶ Manual intervention is required to set the Secondary CMS as active to start the CMS Connectors on the Secondary CMS

HA CMS (only) – Restoral



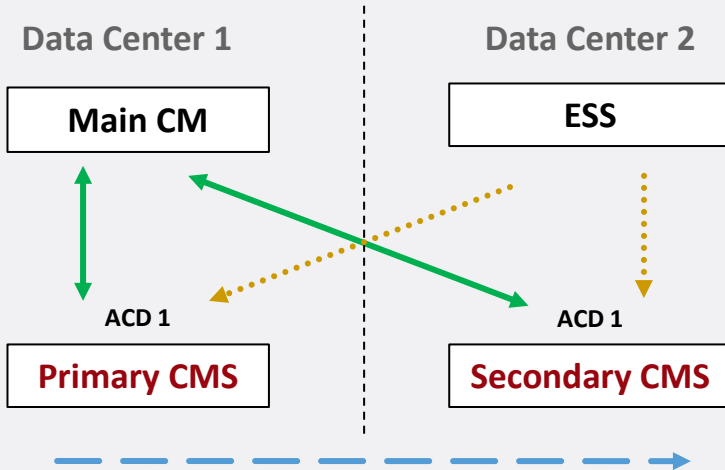
Notes

- ▶ Primary CMS is restored
- ▶ Manual intervention is required to set the Primary CMS as active to switch the CMS Connectors from the Secondary CMS back to the Primary CMS (configurable)
- ▶ Admin-Sync can be used to pull (overwrite) historical interval data from the Secondary CMS to the Primary CMS



Dual-IP Scenarios

Dual-IP CMS – Normal Operation

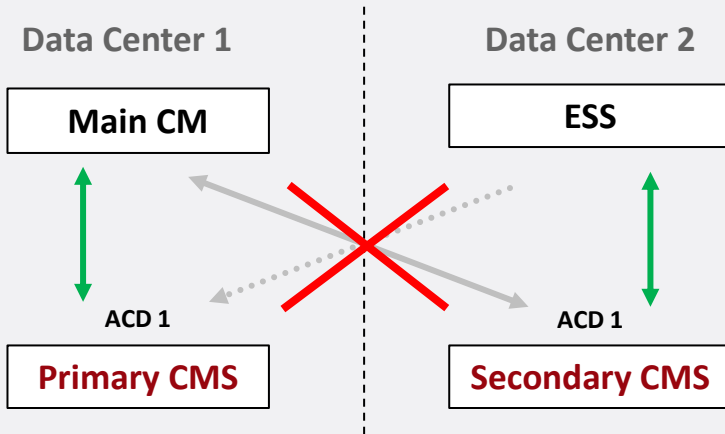


Admin-Sync pushes administrative data from Primary CMS to Secondary CMS nightly (configurable).

Notes

- ▶ Links to Main are connected and active.
- ▶ Links to ESS are not connected.

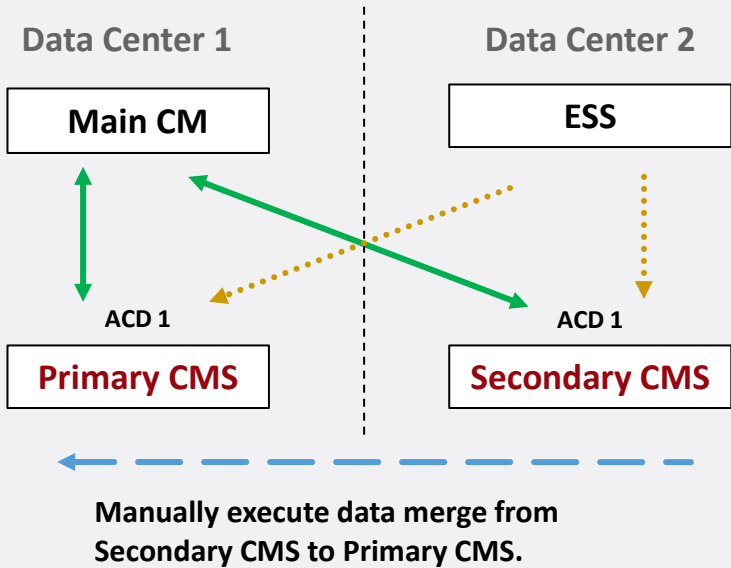
Dual-IP CMS – WAN Failure



Notes

- ▶ Secondary CMS link to the Main CM drops.
- ▶ On the Secondary CMS, the Dual-IP feature attempts a 'round robin' connection and the link to the ESS becomes active.
- ▶ If the ESS is not processing calls, there is no data being collected by the Secondary CMS.
- ▶ The Main CM continues to feed data to the Primary CMS.
- ▶ CMS Connectors attempt to start on the Secondary CMS.

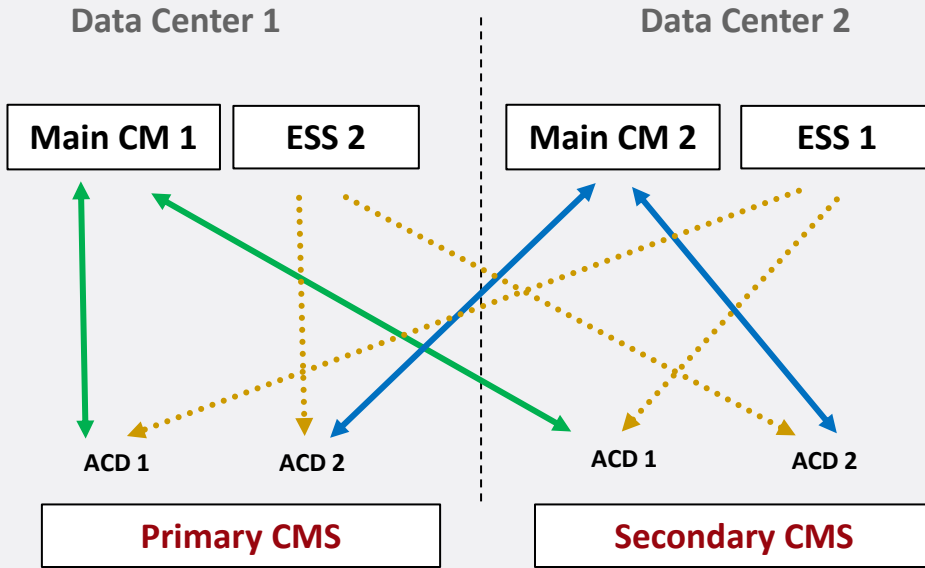
Dual-IP CMS – Restoral



Notes

- ▶ The outage is restored but the Secondary CMS link remains active to the ESS.
- ▶ Manual intervention is required to re-establish the link between the Main CM and the Secondary CMS (busy MIS or stop/start data collection).
- ▶ Decision required to manually execute historical data merge after enterprise returns to normal.

Dual-IP CMS – Two ACD's – Normal Operation

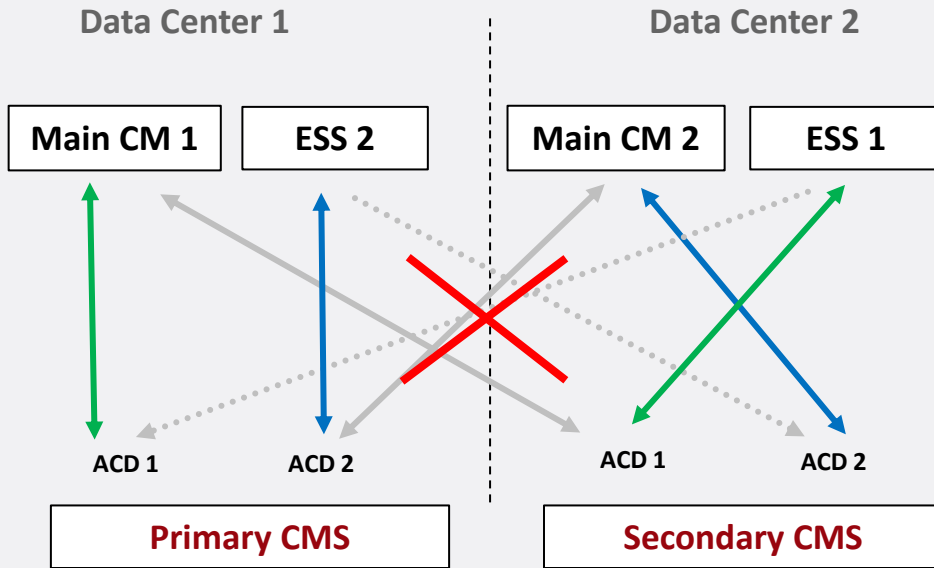


Admin-Sync pushes administrative data from Primary CMS to Secondary CMS nightly (configurable).

Notes

- ▶ A WAN failure should not result in local data collection loss.
- ▶ Be sure to think about failure scenarios when deciding on where to place the CM and CMS servers.

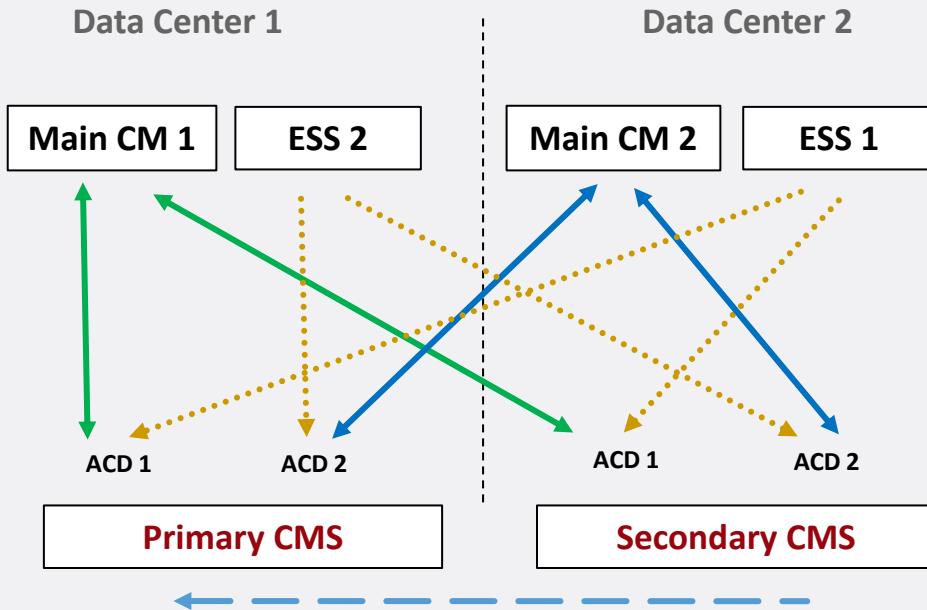
Dual-IP CMS – Two ACD’s – WAN Failure



Notes

- ▶ WAN connectivity between data centers is lost
 - ESS 1 becomes active
 - Main CM in each data center can remain active
- ▶ WAN links drop
 - Main 1 link on Primary CMS unaffected
 - Main 2 link on Secondary CMS unaffected
- ▶ Both CMS's attempt 'round robin' connection
 - Secondary CMS links to ESS 1 (for ACD 1)
 - Primary CMS links to ESS 2 (for ACD 2)

Dual-IP CMS – Two ACD's – Restoral



Manually execute data merge from
Secondary CMS to Primary CMS.

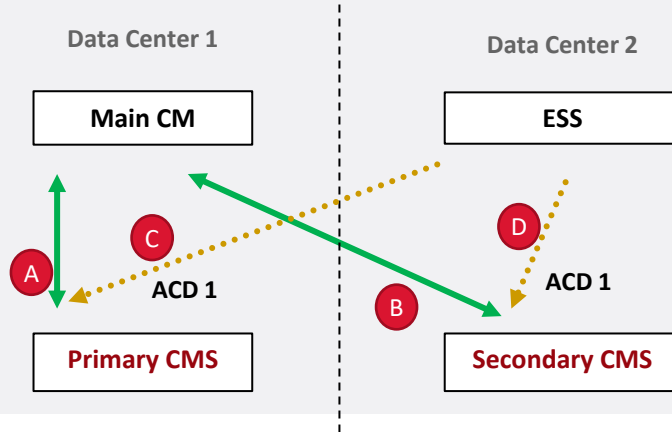
Notes

- ▶ Data Centers are reconnected
 - Manual intervention to reset ACD links on CMS.
- ▶ Each CMS attempts 'round robin' connection
 - Primary CMS links to Main CM2 (ACD 2)
 - Secondary CMS links to CM 1 (ACD 1)
- ▶ Decision required to manually execute historical data merge after enterprise returns to normal

Dual-IP Secondary – Failure Scenarios

Failure	PRI Link	SEC Link	CMS Data Collected	Data Restore Action for Admin-Sync	Comments
None	A	B	Primary	None	
Main CM	C	D	Primary	None	Have to stop / restart data collection on both CMS's to swing SPI links back to Main CM.
ESS	A	B	Primary	None	
Primary CMS	-	B	Secondary	Merge from Secondary to Primary	
Secondary CMS	A	-	Primary	Optional Merge from Primary to Secondary	
Data Center 1	-	D	Secondary	Merge from Secondary to Primary	Have to stop / restart data collection on Secondary CMS to swing SPI link back to Main CM.
Data Center 2	A	-	Primary	Optional Merge from Primary to Secondary	
WAN	A	D	Both	Merge Both	Manual decision necessary for merging data.

* Green highlighting indicates the feed/data that will be used as the source of truth.

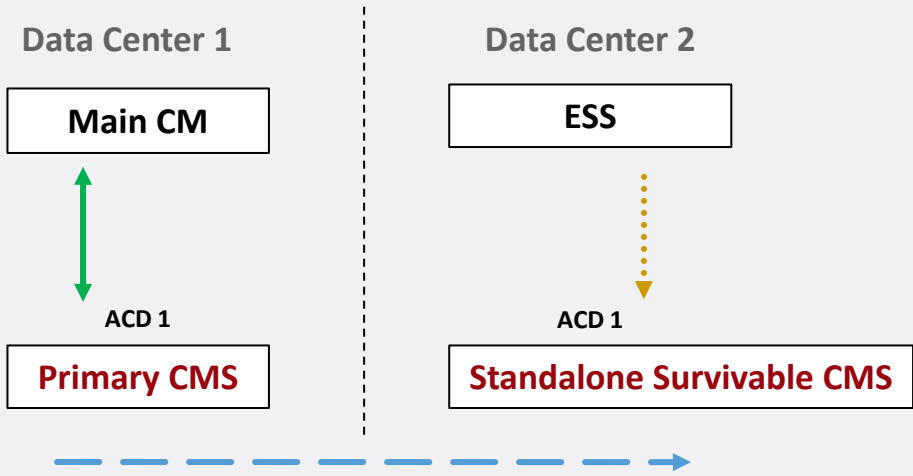




Survivable Scenarios

Standalone Survivable CMS – One ACD

Not
Recommended
Use Dual-IP
Instead



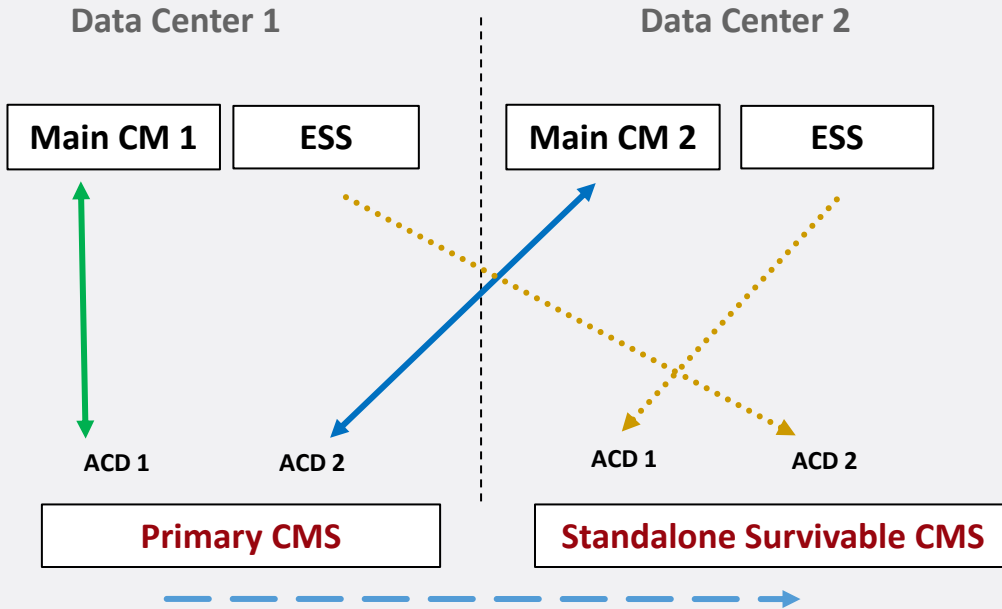
Notes

- ▶ Survivable ACD is only active when ESS is active

Admin-Sync pushes administrative data from Primary CMS to Secondary CMS nightly (configurable).

Standalone Survivable CMS – Two ACD's

Not Recommended
Use Dual-IP
Instead

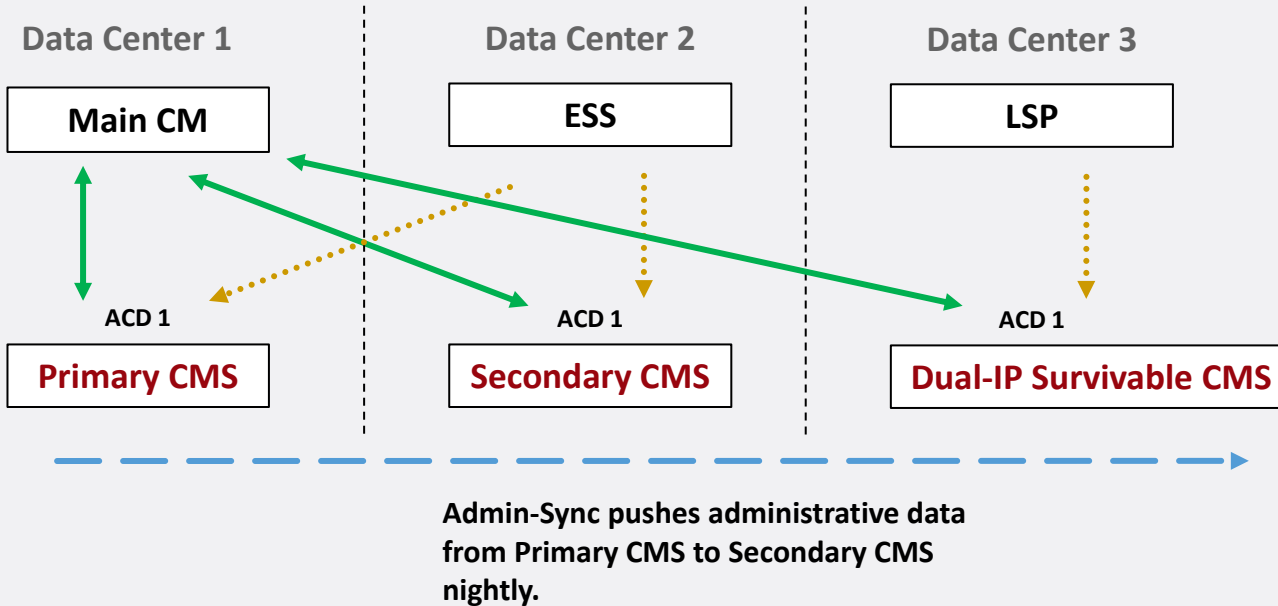


Notes

- ▶ Survivable ACD is only active when ESS is active

Admin-Sync pushes administrative data from Primary CMS to Secondary CMS nightly (configurable).

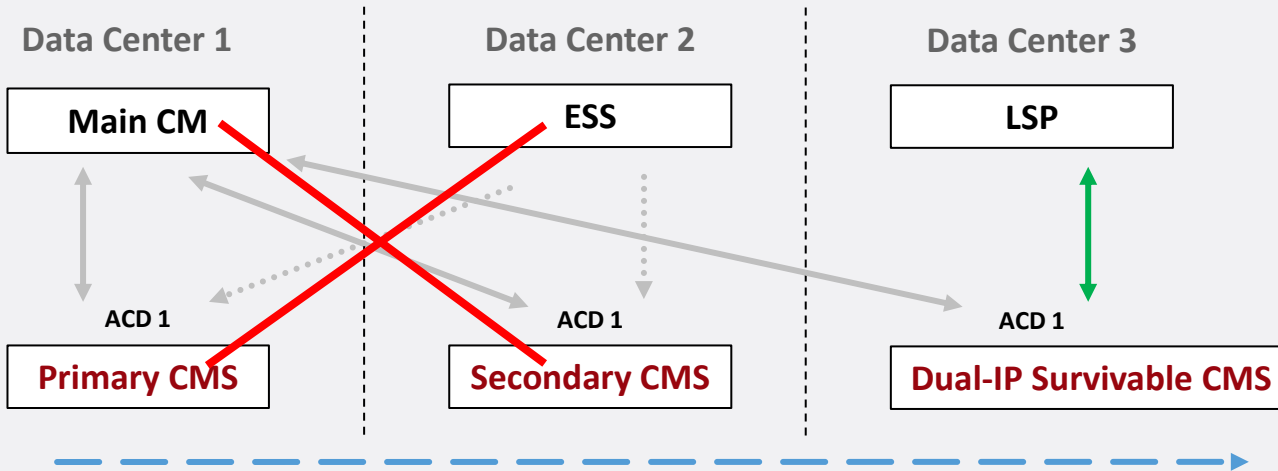
Dual-IP Survivable - Normal Operation



Notes

- ▶ Links to Main are connected and active.
- ▶ Links to ESS/LSP are not connected.
- ▶ 4 CMS links per CM are supported.
- ▶ 8 ACD's per CMS are supported

Dual-IP Survivable – DC 1&2 Failure

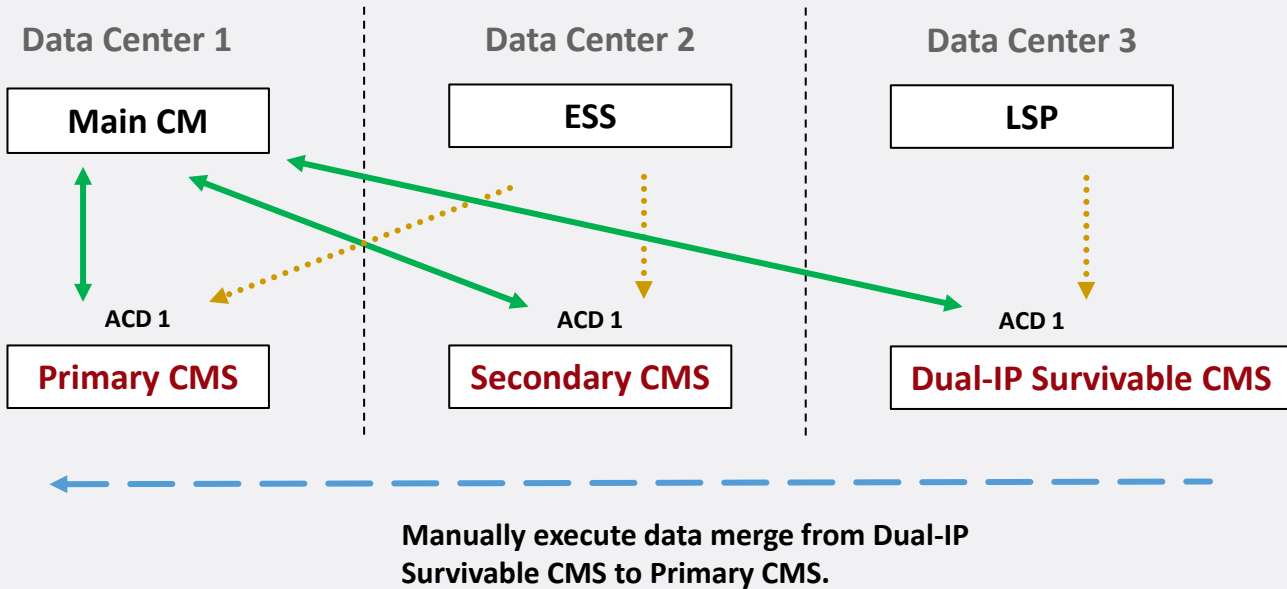


Admin-Sync pushes administrative data from Primary CMS to Secondary CMS nightly (configurable).

Notes

- ▶ On the Dual-IP Survivable CMS, the Dual-IP feature attempts a 'round robin' connection and the link to the LSP becomes active.

Dual-IP Survivable - Restoral



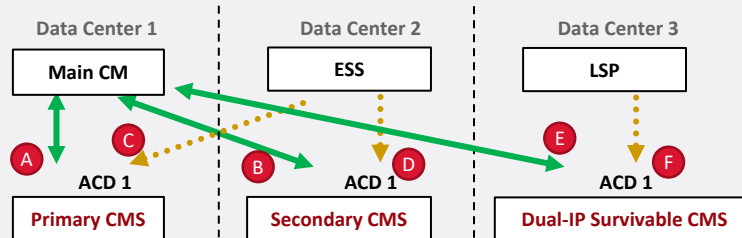
Notes

- ▶ Data Centers are reconnected
 - Manual intervention to reset ACD links on CMS.
- ▶ Each CMS attempts 'round robin' connection
 - All CMS's link to Main CM
- ▶ Decision required to manually execute historical data merge after enterprise returns to normal

Dual-IP Survivable – Failure Scenarios

Failure	PRI Link	SEC Link	SUR Link	CMS Data Collected	Data Restore Action for Admin-Sync	Comments
None	A	B	E	Primary	None	
Main CM	C	D	F	Primary	None	Have to stop / restart data collection on both CMS's to swing SPI links back to Main CM.
ESS	A	B	F	Primary	None	
Primary CMS	-	B	E	Secondary	Merge from Secondary to Primary	
Secondary CMS	A	-	E	Primary	Optional Merge from Primary to Secondary	
Primary CMS & Secondary CMS	-	-	E	Survivable	Merge from Survivable to Primary	
Data Center 1	-	D	F	Secondary	Merge from Secondary to Primary	Have to stop / restart data collection on Secondary CMS to swing SPI link back to Main CM.
Data Center 2	A	-	E	Primary	Optional Merge from Primary to Secondary	
Data Center 1 & 2 or Main CM & ESS	-	-	F	Survivable	Merge from Survivable to Primary	
WAN	A	D	F	All	Merge from all	Manual decision necessary for merging data.

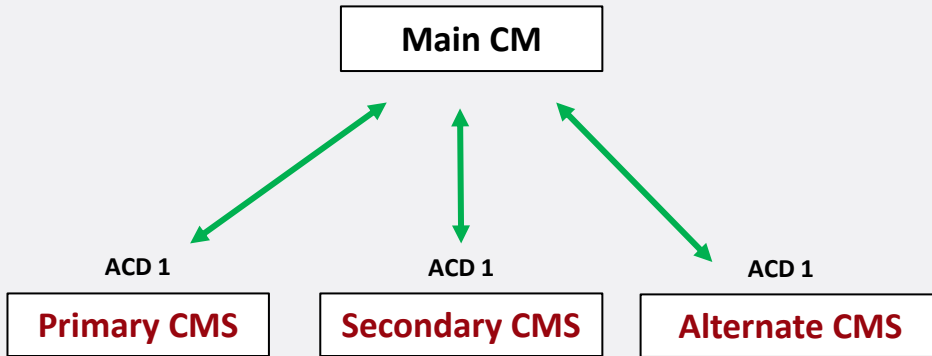
* Green highlighting indicates the feed/data that will be used as the source of truth.





Alternate Scenarios

Alternate CMS's



Admin-Sync pushes administrative data from Primary CMS to Secondary CMS and Alternate CMS nightly (configurable).

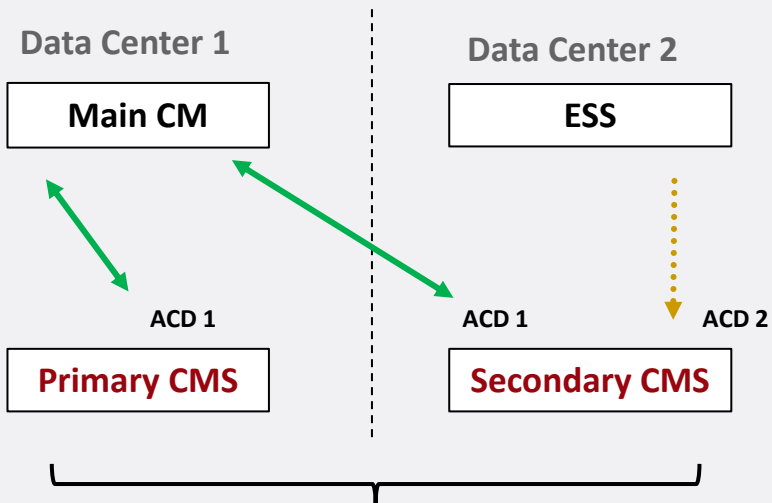
Notes

- ▶ An Alternate is another CMS that is connected to the Main CM for capacity reasons.
- ▶ Supervisors can log into an Alternate CMS but not do any administration.
- ▶ CMS Connectors are only supported on the Primary and Secondary CMS.
- ▶ A maximum of 4 CMS links are allowed per CM.

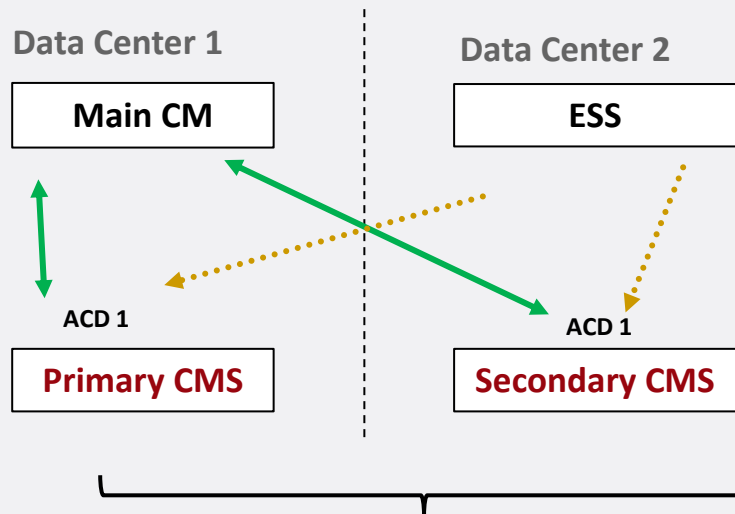
A repeating geometric pattern of red and white lines forming a complex, interlocking design. The pattern consists of various shapes, including triangles, squares, and hexagons, arranged in a way that creates a sense of depth and movement. The red lines are thick and the white spaces are also thick, creating a high-contrast, visually striking effect.

Comparisons

Dual-Role PE (deprecated) vs. Dual-IP

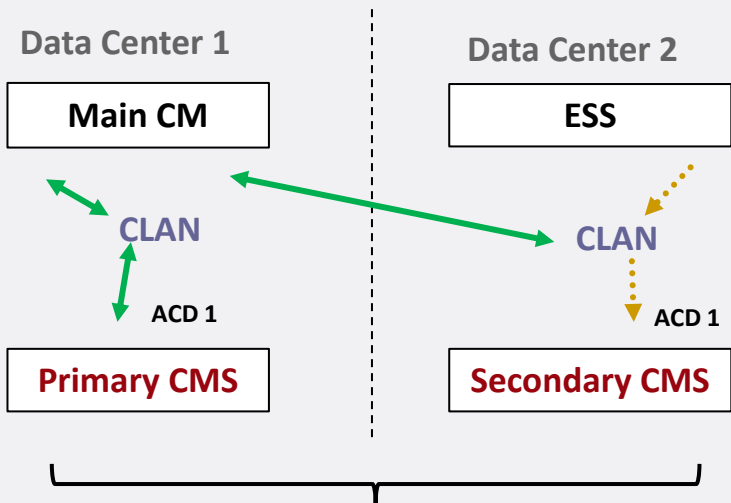


Dual-Role (PE) Configuration (deprecated).

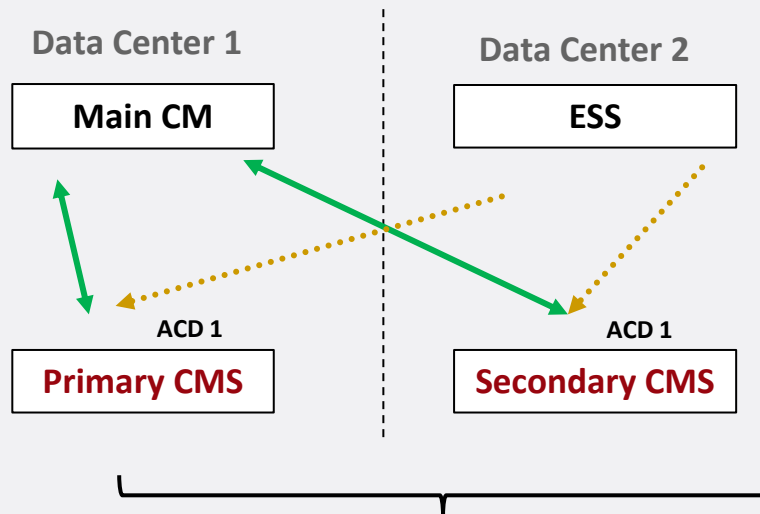


Notice that the ACD number remains the same on the Secondary CMS. This is important for third-party feeds.

Dual-Role CLAN (deprecated) vs. Dual-IP

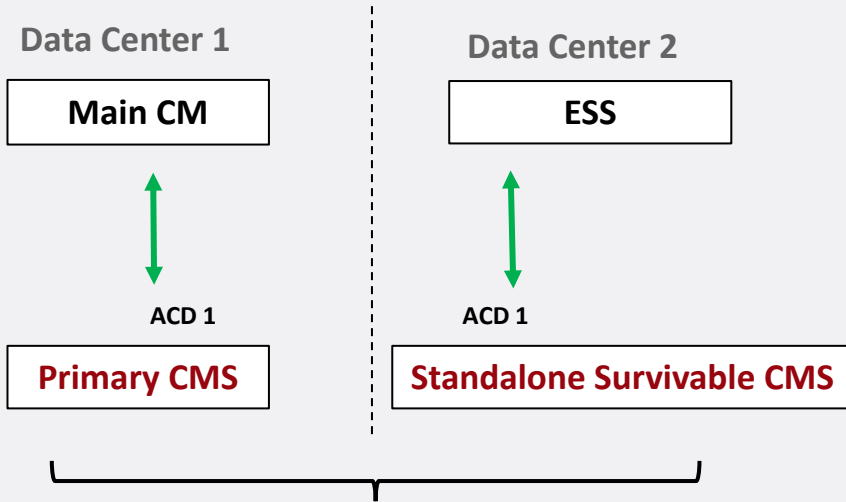


Dual-Role (CLAN) Configuration (deprecated).

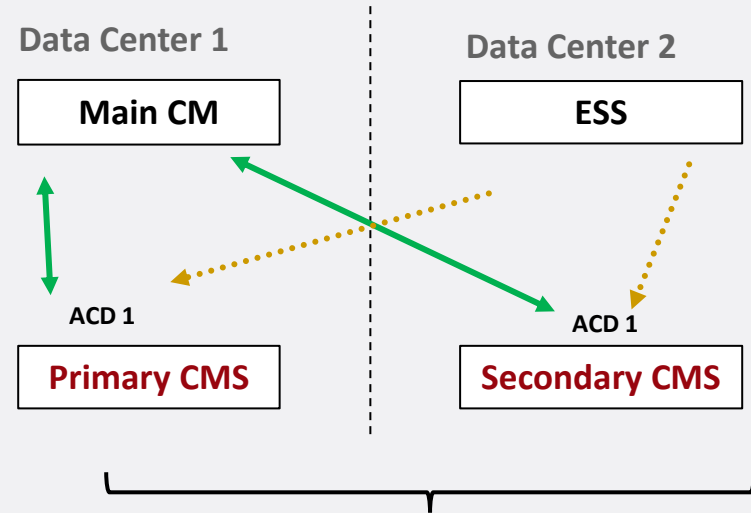


Same configuration using Dual-IP feature:
CLAN is replaced with 2 IP addresses
administered to same ACD on Secondary CMS.

Standalone Survivable vs. Dual-IP



Standalone ESS will only have data for intervals in which the ESS was active. This architecture is not recommended.



For certain types of fragmentation, the interval of failure and the interval of restoral cannot be aggregated, causing brief windows of potential data loss.



Additional Materials

Resources

- R18 CMS Software Installation, Maintenance and Troubleshooting for Linux document. Installing Dual IP starts on page 84.

<https://downloads.avaya.com/css/P8/documents/101015305>

- R19 Maintaining and Troubleshooting CMS. Starting on page 44:

<https://downloads.avaya.com/css/P8/documents/101058382>

- R20 High Availability Documents:

<https://support.avaya.com/css/public/documents/101086027>

<https://support.avaya.com/css/public/documents/101086025>

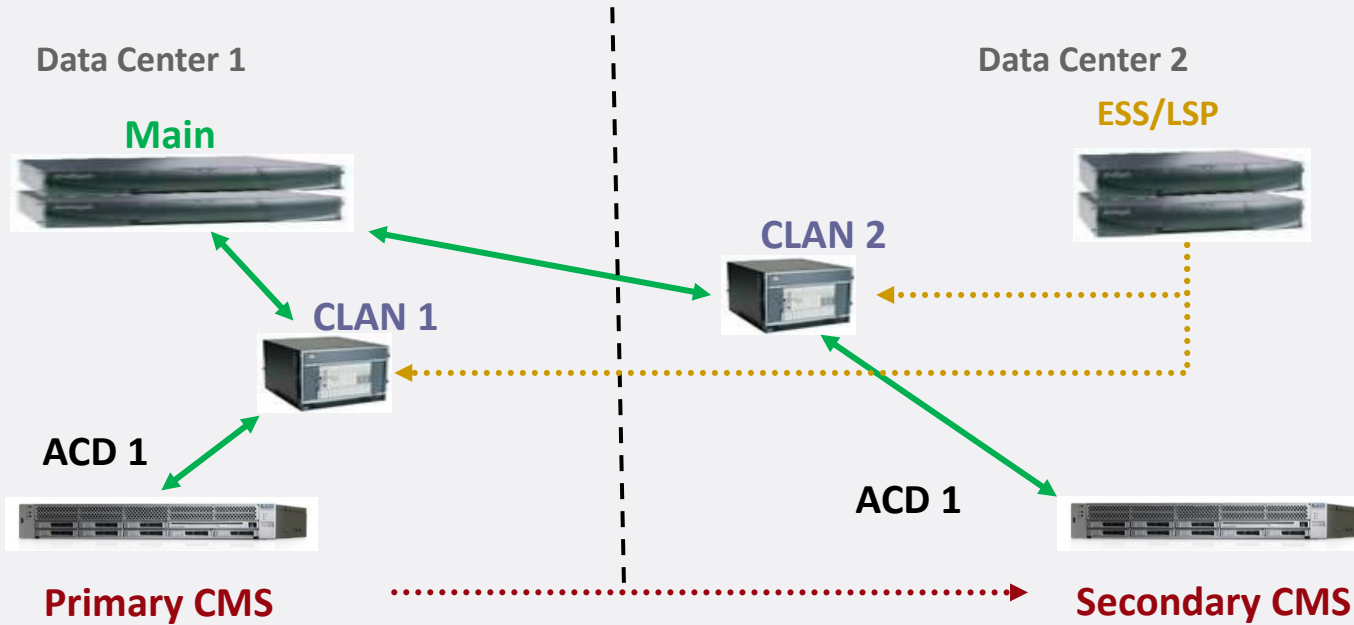
- Avaya Reporting and Analytics Connectors
(also known as CMS Connectors)

<https://support.avaya.com/products/P1647>



Backup Materials & Legacy Scenarios

Dual-Role CMS – One ACD – CLAN (deprecated)



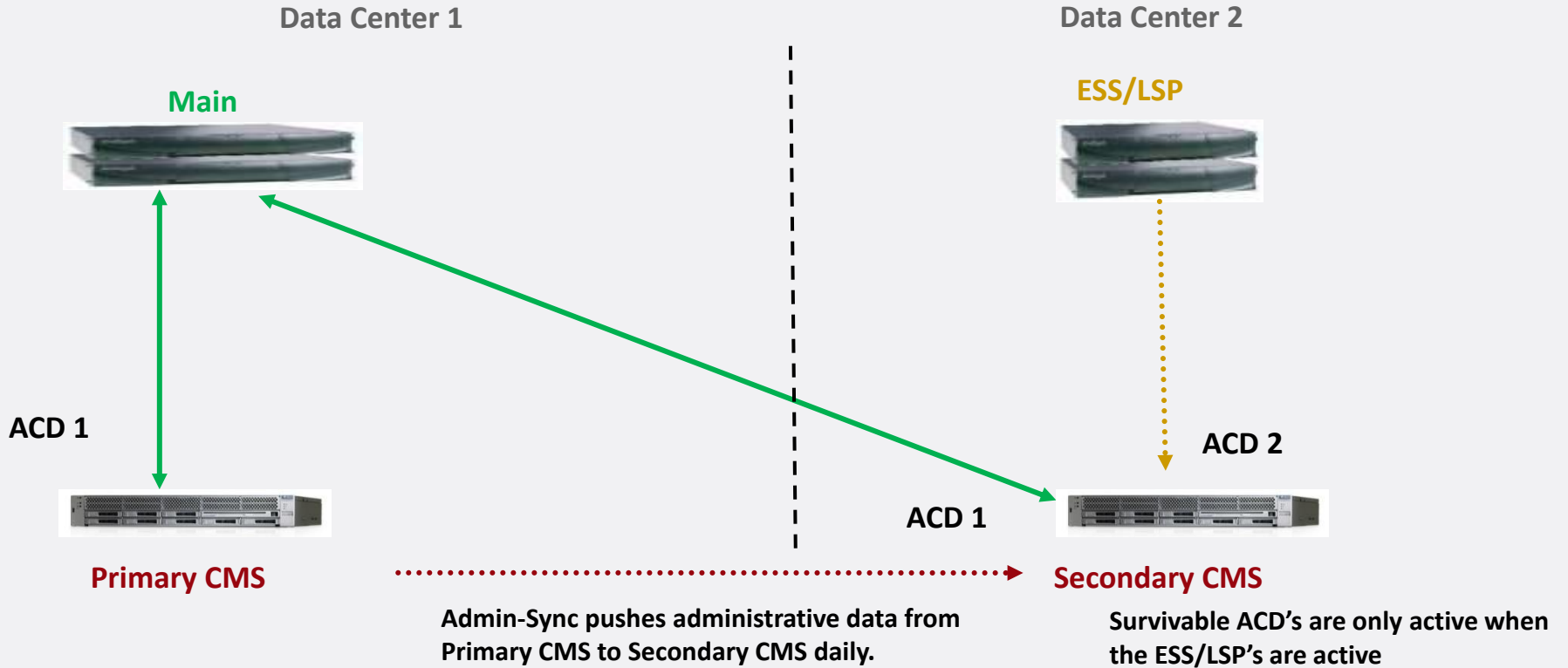
ESS/LSP can take over both CLAN gateways depending on the type of failure.

If this happens, manual aggregation steps may be necessary to prevent duplication.

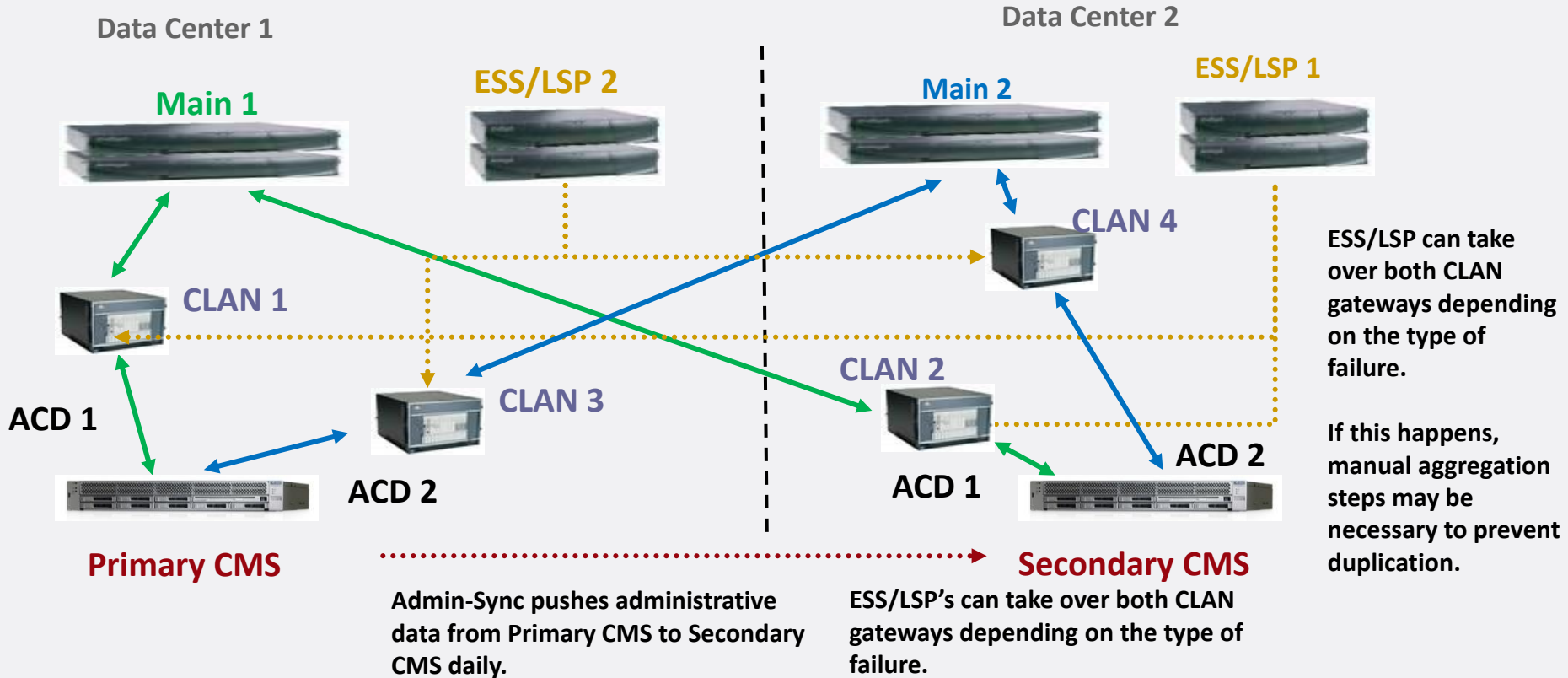
Admin-Sync pushes administrative data from Primary CMS to Secondary CMS daily.

ESS/LSP takes control of the CLAN during fragmentation.

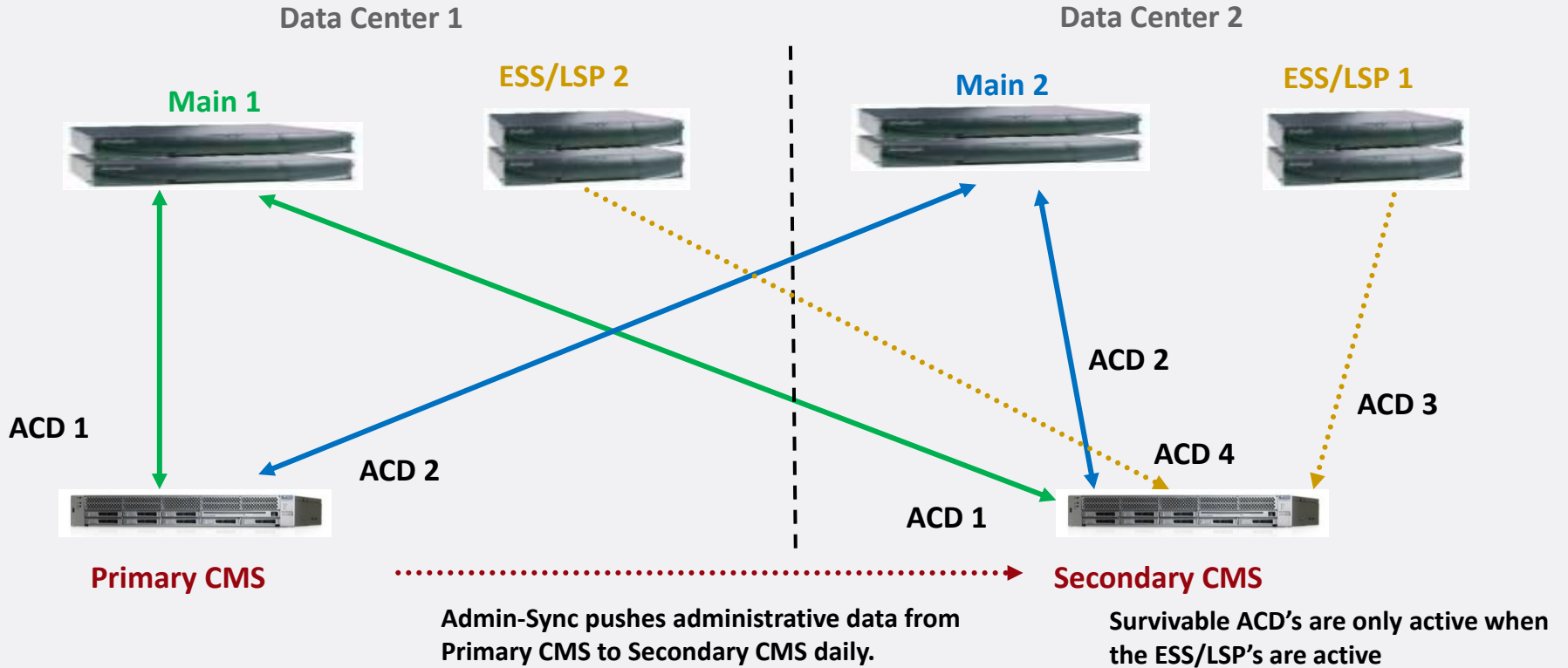
Dual-Role CMS – One ACD – PE (deprecated)



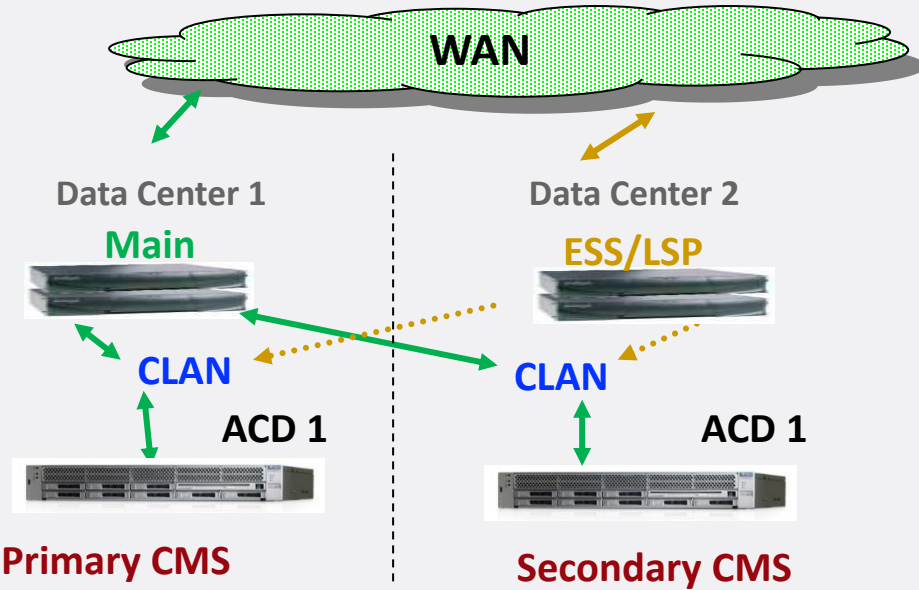
Dual-Role CMS – Two ACD’s – CLAN (deprecated)



Dual-Role CMS – Two ACD's – PE (deprecated)



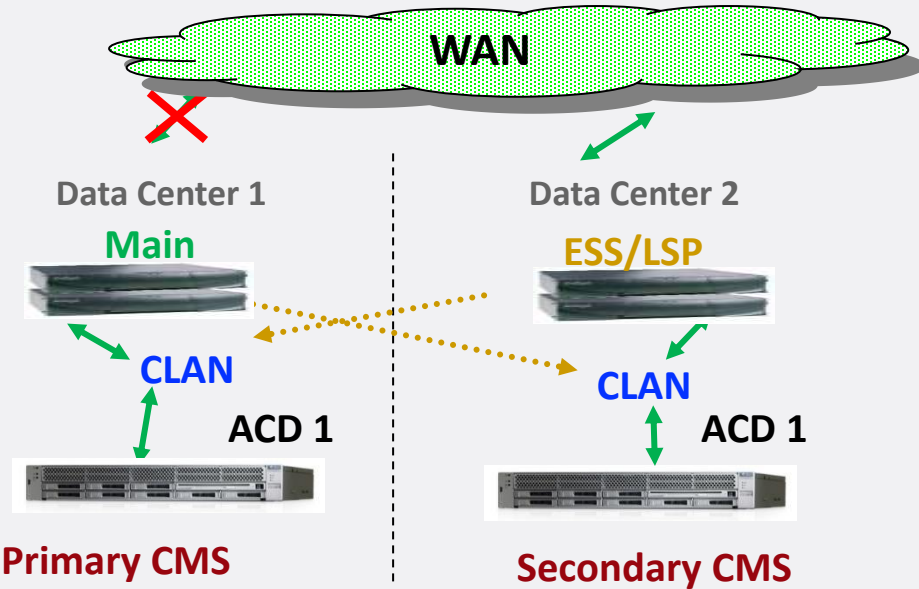
CLAN Configuration – Normal Operation



Notes

- ▶ Secondary CMS is connected to the same CM as the Primary CMS.
- ▶ ESS/LSP in warm stand-by.
- ▶ Main CM is controlling the CLAN's
- ▶ Admin-Sync pushes admin data from Primary CMS to Secondary CMS.
- ▶ CMS Connectors from Primary CMS

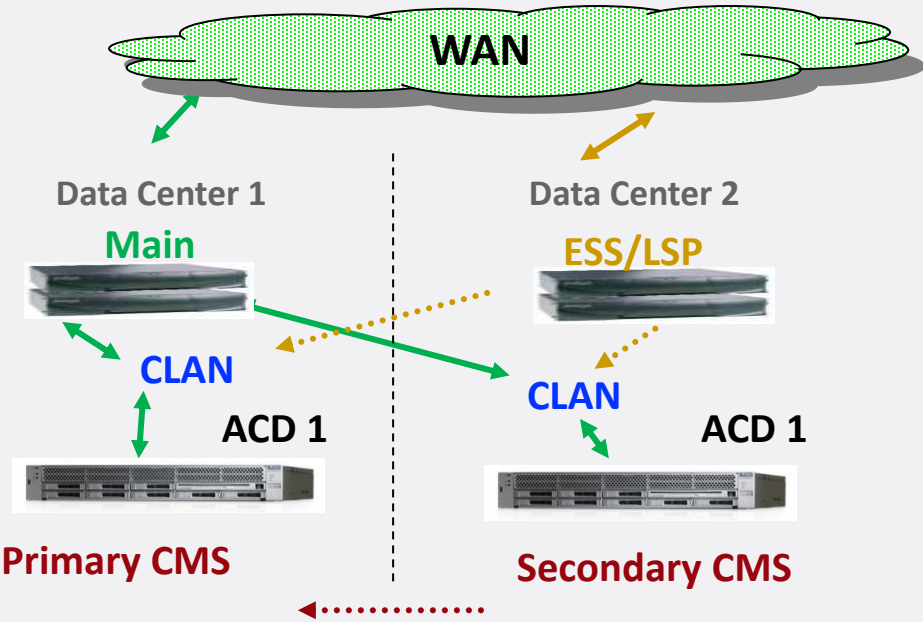
CLAN Configuration – CM Fragmentation



Notes

- ▶ ESS becomes active and takes control of the CLAN, the link between the ESS and Secondary CMS begins processing data.
- ▶ The Main CM can be supporting a portion of the Enterprise and potentially sending data to the Primary CMS also.
- ▶ The ESS can take over both CLAN gateways depending on the type of failure.
- ▶ Manual intervention required to set the Secondary as active to start CMS Connectors on the Secondary CMS.

CLAN Configuration – Restoral

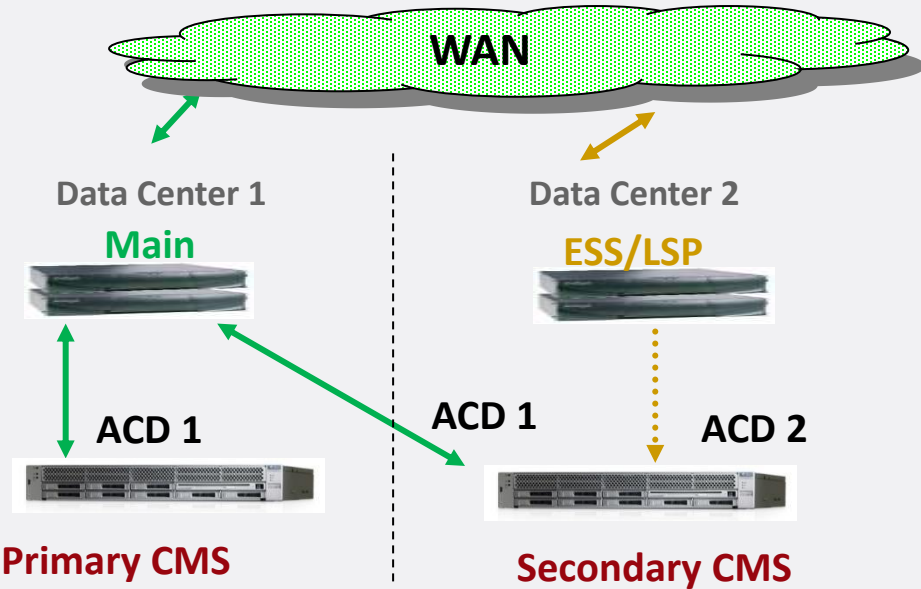


Notes

- ▶ When the outage is resolved and the ESS is put back into warm stand-by, the Interval data from the Secondary CMS can be aggregated back to the Primary CMS.
- ▶ The Admin-Sync package is used to copy/overwrite historical interval data from the Secondary CMS to the Primary CMS.
- ▶ The interval of fragmentation and the interval of restoral cannot be aggregated.

Admin-Sync used to copy/overwrite historical interval data from Secondary CMS to Primary CMS

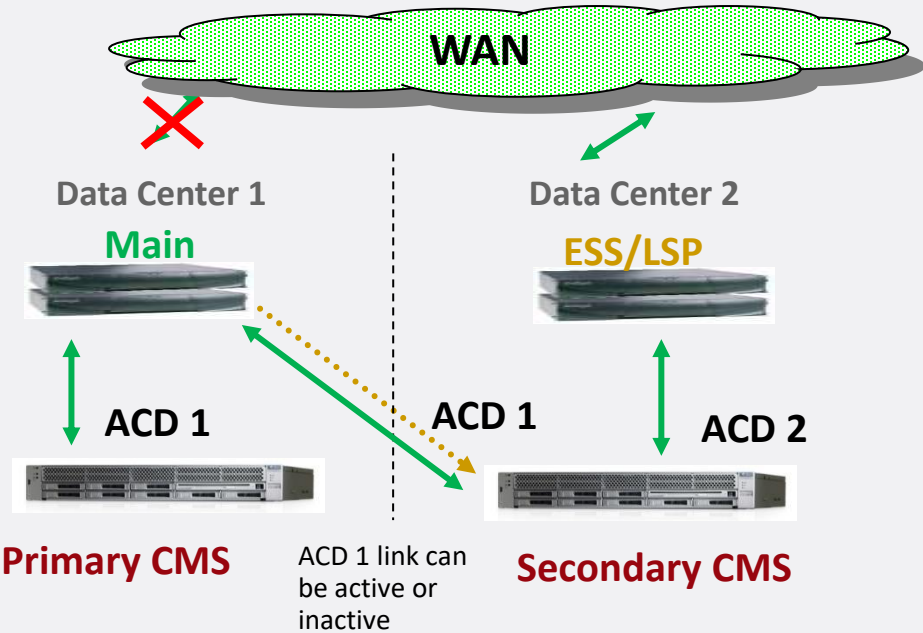
PE Configuration – Normal Operation



Notes

- ▶ Secondary CMS is connected to the same CM as the Primary CMS.
- ▶ Secondary CMS - ACD 2 is connected to ESS in warm stand-by.
- ▶ ACD 1 & 2 require the same Data Storage Allocation settings for any items that are measured on the CM (Skills, Vectors, VDNs, Trunk Groups, Trunks).
- ▶ Admin-Sync pushes admin data from Primary ACD 1 to Secondary ACD 1 and ACD 2.
- ▶ CMS Connectors from Primary CMS.

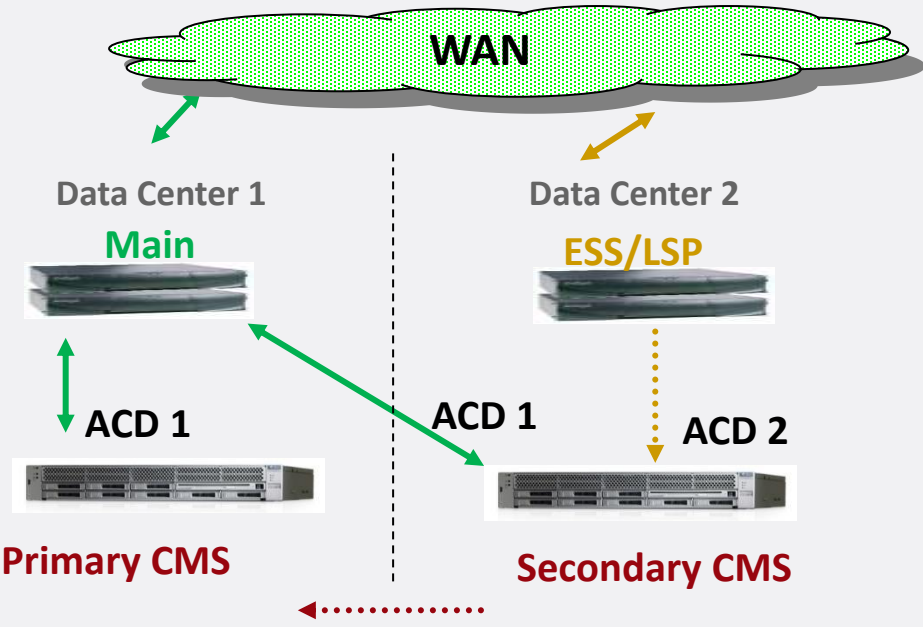
PE Configuration – CM Fragmentation



Notes

- ▶ When a WAN fragmentation occurs and the ESS becomes active, the link between the ESS and Secondary CMS begins processing data on ACD 2.
- ▶ The Main CM can be supporting a portion of the Enterprise and potentially sending data to the Primary and Secondary CMS.
- ▶ Manual intervention required to set the Secondary as active to start CMS Connectors on the Secondary CMS.
- ▶ Most vendors do not support CMS Connectors from ACD 2 on the Secondary CMS

PE Configuration – Restoral

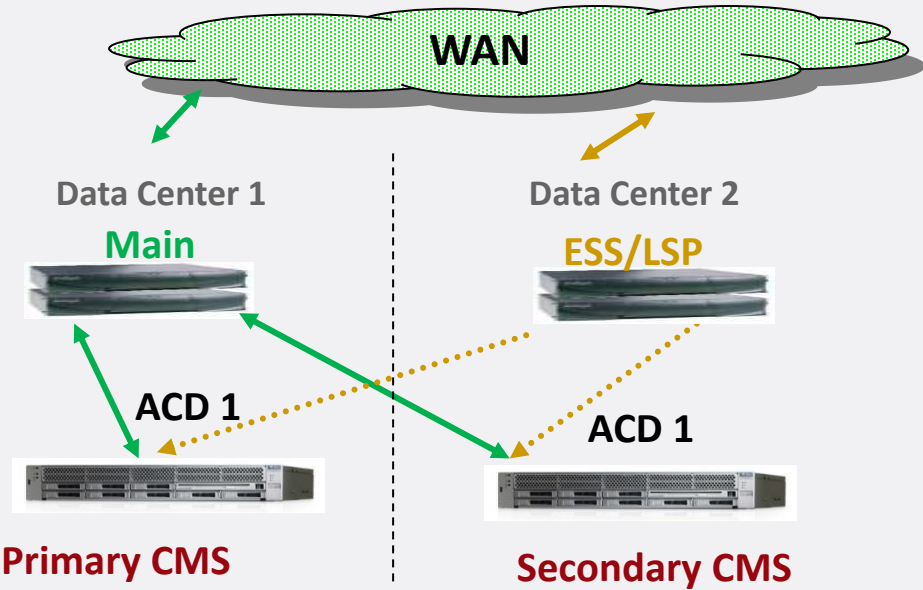


Notes

- ▶ Enterprise is restored and the ESS is in warm stand-by.
- ▶ Historical data from ACD2 can be aggregated back to ACD 1 on the Primary CMS using the Admin Sync package.
- ▶ Manual intervention required to start CMS Connectors back on the Primary CMS
- ▶ The interval of fragmentation and the interval of restoral can be aggregated.

Admin Sync used to move historical interval data from Secondary CMS ACD 2 to Primary CMS ACD 1

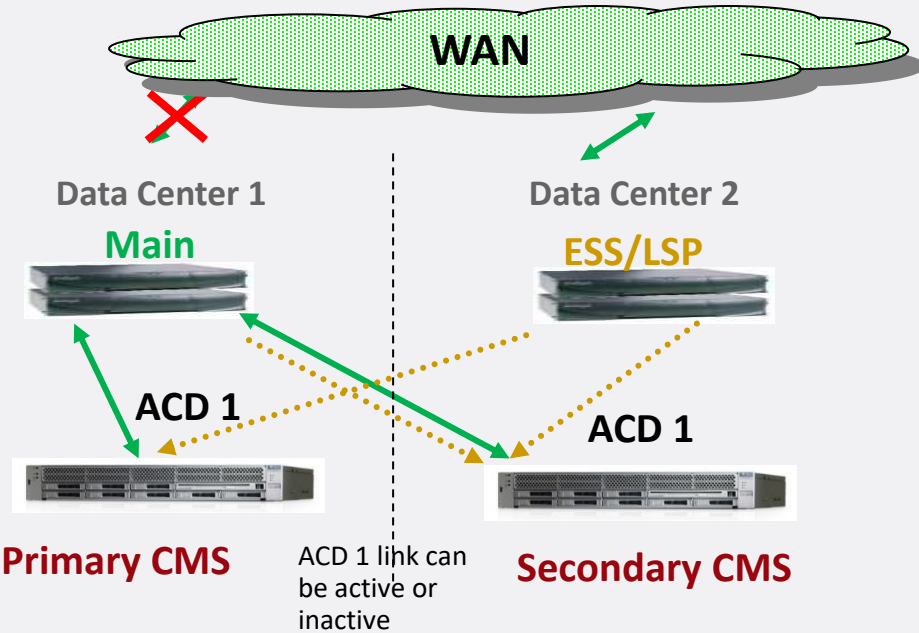
Dual-IP Configuration – Normal Operation



Notes

- ▶ Secondary CMS is connected to the same CM as the Primary CMS.
- ▶ Survivable Core in warm stand-by.
- ▶ Admin-Sync pushes admin data from Primary CMS to Secondary CMS.
- ▶ CMS Connectors from Primary CMS

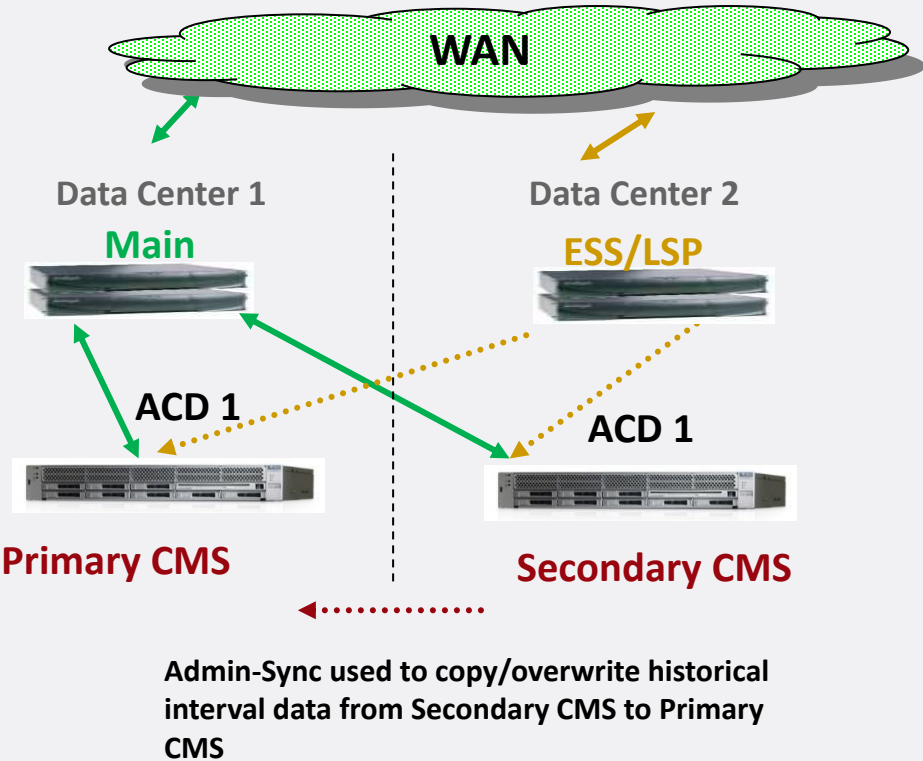
Dual-IP Configuration – CM Fragmentation



Notes

- ▶ The Secondary CMS does not know there is a CM WAN outage.
- ▶ Manual intervention on the Secondary CMS is required to change the ACD link to the ESS.
- ▶ The Main CM can be supporting a portion of the Enterprise and sending data to the Primary CMS.
- ▶ Manual intervention required to set the Secondary CMS as active to start CMS Connectors.

Dual-IP Configuration – Restoral



Notes

- ▶ The outage is resolved and the ESS is put back into warm stand-by.
- ▶ Manual intervention on the Secondary CMS is required to change the ACD link to the Main CM.
- ▶ The Admin-Sync package is used to copy/overwrite historical interval data from the Secondary CMS to the Primary CMS.
- ▶ The interval of fragmentation and the interval of restoral cannot be aggregated.



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