VOSS Insights
Assurance Example Deployments Guide

Release 24.2

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Legal Information

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Contents

1. Assurance Deployment Examples

This guide provides a collection of example deployment scenarios for Insights Assurance.

1.1. Deployment Scenarios

1.1.1. Standard Non Redundant

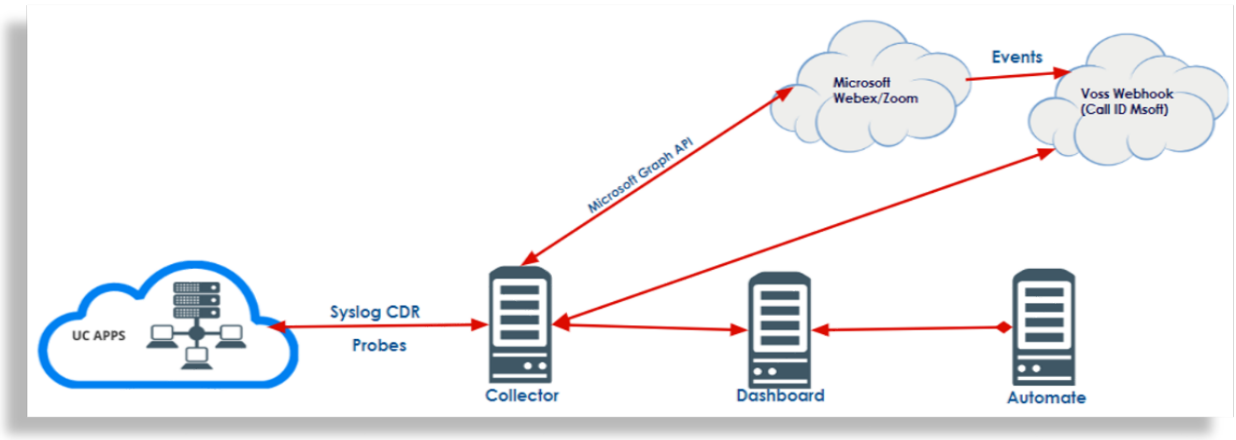
Standard Non Redundant with Automate

The table provides a solution description and considerations for the following example Assurance deployment scenario: 'Standard Non Redundant with Automate'

Solution	Considerations
• Single Collector • Single Dashboard • VOSS Automate • Collector carries out Syslog/CDR and probe functions • VOSS Automate integrated with Dashboard • Other Cloud-based services via Arbitrator	• No redundancy • All based On-Premise • Used for smaller deployments (under 5000 users) • Ability to Air Gap if required

The image provides a graphical overview of the following example Assurance deployment scenario: 'Standard Non Redundant with Automate'

Note: For port details, see *System Connectivity - Port Requirements*.



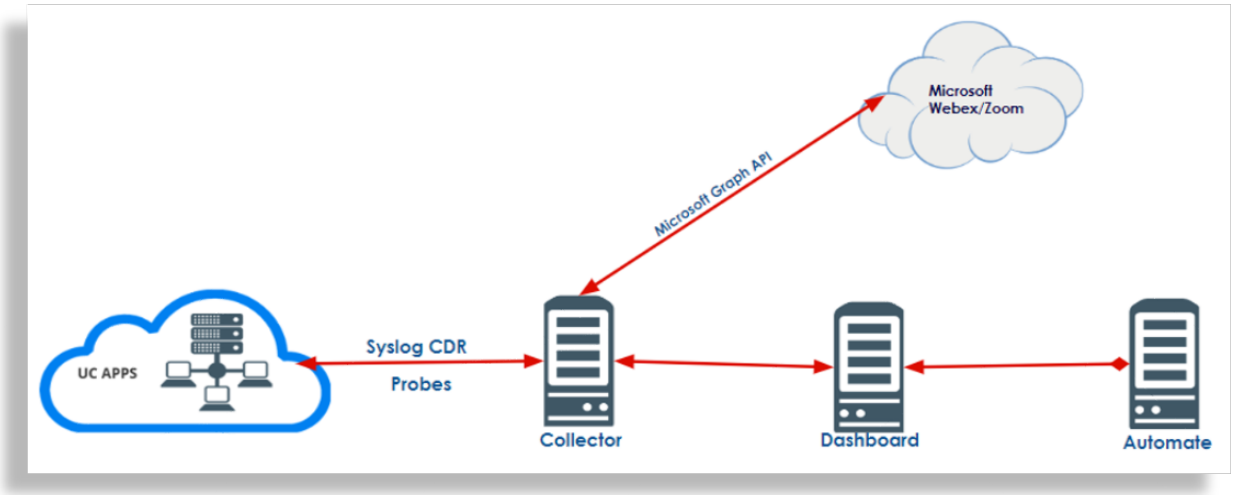
Standard Non Redundant with Automate (Webhooks Replaced with Graph API)

The table provides a solution description and considerations for the following example Assurance deployment scenario: 'Standard Non Redundant with Automate (Webhooks Replaced with Graph API)'

Solution	Considerations
• Single Collector • Single Dashboard • VOSS Automate • Collector carries out syslog/CDR and probe functions • VOSS Automate integrated with Dashboard • Other Cloud-based services via Arbitrator	• No Redundancy • All based On-Premise • Used for smaller deployments (under 500 users) • Ability to Air Gap if required • Webhooks replaced with Graph API

The image provides a graphical overview of the following example Assurance deployment scenario: 'Standard Non Redundant with Automate (Webhooks Replaced with Graph API)'

Note: For port details, see *System Connectivity - Port Requirements*.



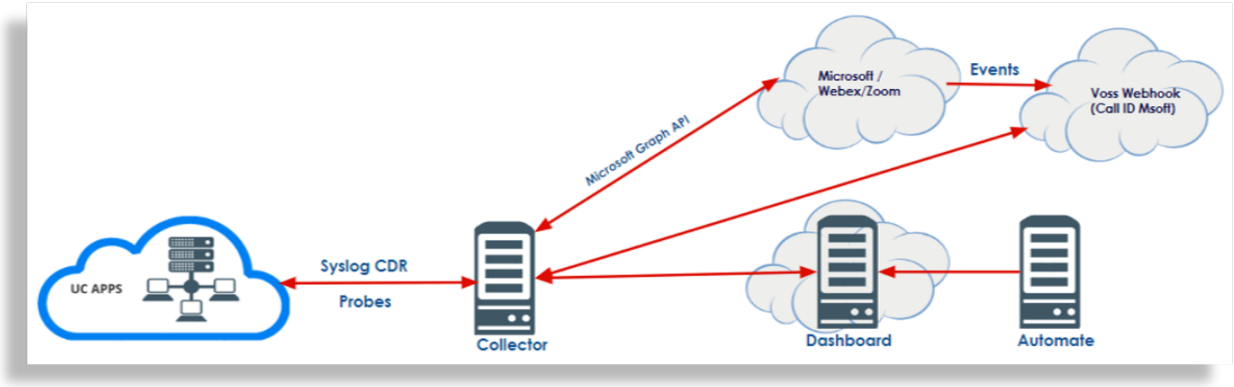
Standard Non Redundant with Automate Hybrid

The table provides a solution description and considerations for the following example Assurance deployment scenario: 'Standard Non Redundant with Automate Hybrid'

Solution	Considerations
• Single Collector On-Premise • Single Dashboard hosted in customer/VOSS Cloud • VOSS Automate • Collector carries out syslog/CDR and probe functions • VOSS Automate integrated with Dashboard • Other Cloud-based services via Collector	• No data redundancy • Smaller user and device sized deployment < 5000 users • Network

The image provides a graphical overview of the following example Assurance deployment scenario: 'Standard Non Redundant with Automate Hybrid'

Note: For port details, see *System Connectivity - Port Requirements*.



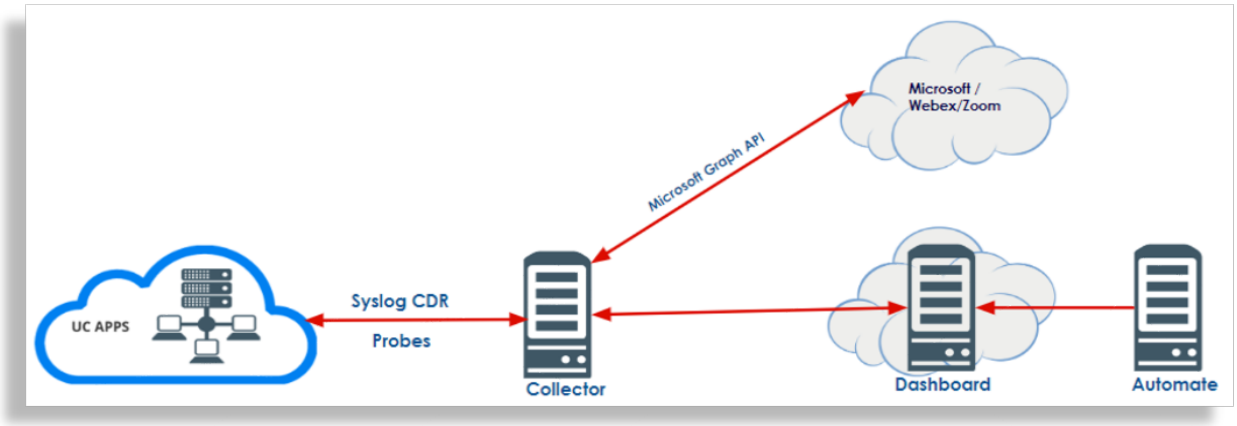
Standard Non Redundant with Automate Hybrid (Webhooks Replaced with Graph API)

The table provides a solution description and considerations for the following example Assurance deployment scenario: 'Standard Non Redundant with Automate Hybrid (Webhooks Replaced with Graph API)'

Solution	Considerations
• Single Collector On Premise • Single Dashboard hosted in Customer / VOSS Cloud • VOSS Automate • Collector carries out syslog/CDR and probe functions • VOSS Automate integrated with Dashboard • Other Cloud-based services via Collector	• No data redundancy • Smaller user and device sized deployment < 5000 users • Network • Webhook replaced by Graph API

The image provides a graphical overview of the following example Assurance deployment scenario: 'Standard Non Redundant with Automate Hybrid (Webhooks Replaced with Graph API)'

Note: For port details, see *System Connectivity - Port Requirements*.



1.1.2. Standard Small Full

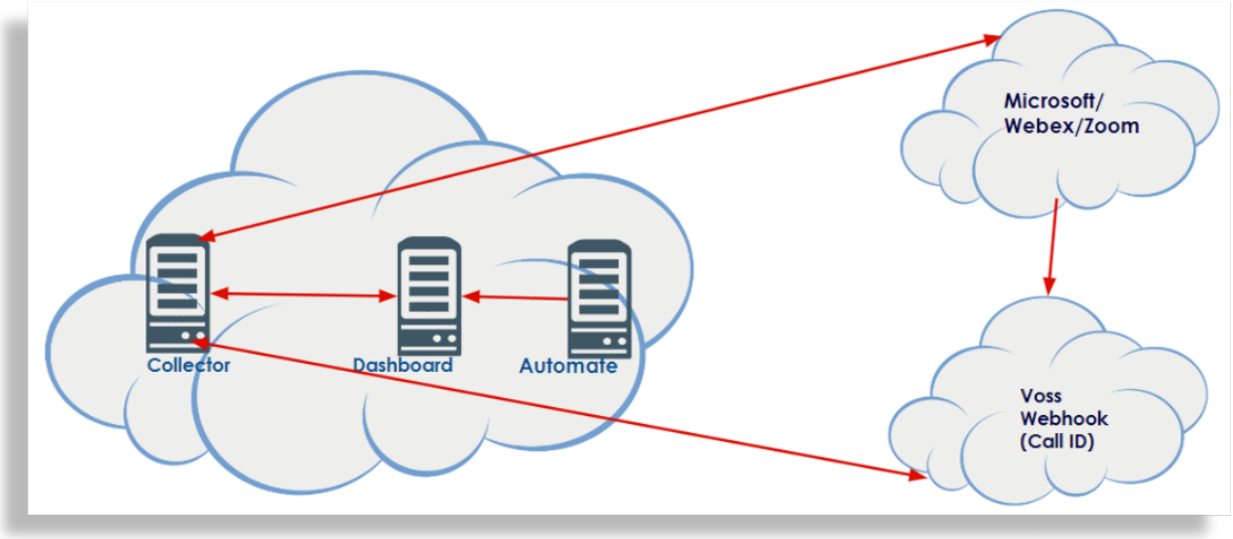
Standard Small Full Customer Cloud Deployment

The table provides a solution description and considerations for the following example Assurance deployment scenario: 'Standard Small Full Customer Cloud Deployment'

Solution	Considerations
• Single Collector hosted in Customer cloud • Single Dashboard hosted in Customer Cloud • VOSS Automate in Customer Cloud • No On Premise apps to monitor • VOSS Automate integrated with Dashboard • Other Cloud-based services via Arbitrator	• All monitoring /call records within Cloud • No On Premise • Cloud Provider • Size of use base / call records

The image provides a graphical overview of the following example Assurance deployment scenario: 'Standard Small Full Customer Cloud Deployment'

Note: For port details, see *System Connectivity - Port Requirements*.



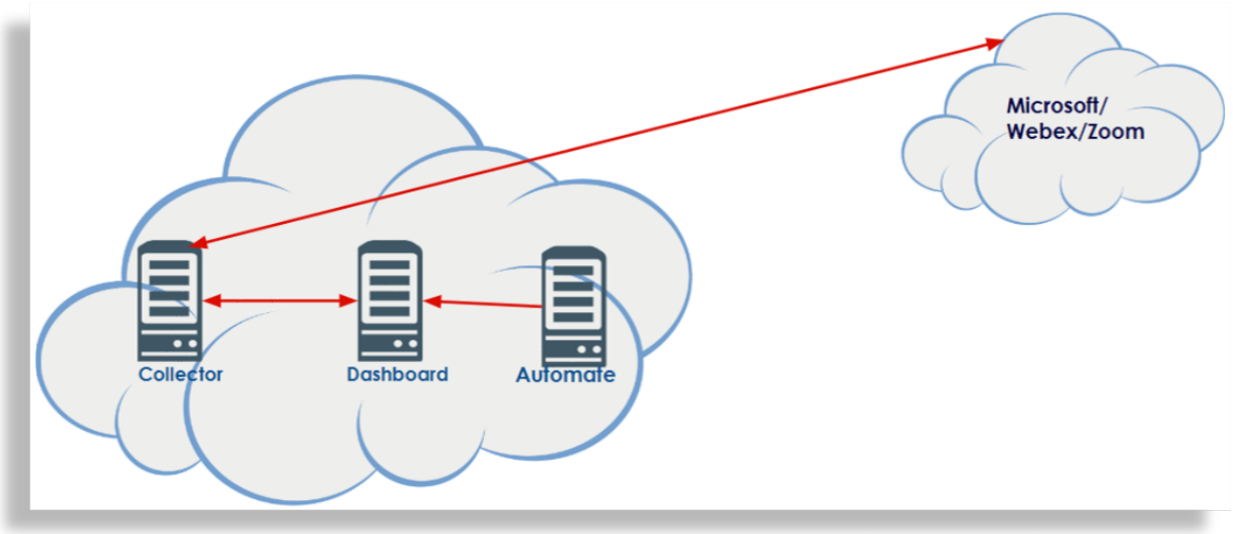
Standard Small Full Customer Cloud Deployment (Webhooks Replaced with Graph API)

The table provides a solution description and considerations for the following example Assurance deployment scenario: 'Standard Small Full Customer Cloud Deployment (Webhooks Replaced with Graph API)'

Solution	Considerations
• Single Collector hosted in Customer cloud • Single Dashboard hosted in Customer Cloud • VOSS Automate in Customer Cloud • No On Premise apps to monitor • VOSS Automate integrated with Dashboard • Other Cloud-based services via Arbitrator	• All monitoring /call records within Cloud • No On Premise • Cloud Provider • Size of use base / call records • Webhook replaced by Graph API

The image provides a graphical overview of the following example Assurance deployment scenario: 'Standard Small Full Customer Cloud Deployment (Webhooks Replaced with Graph API)'

Note: For port details, see *System Connectivity - Port Requirements*.



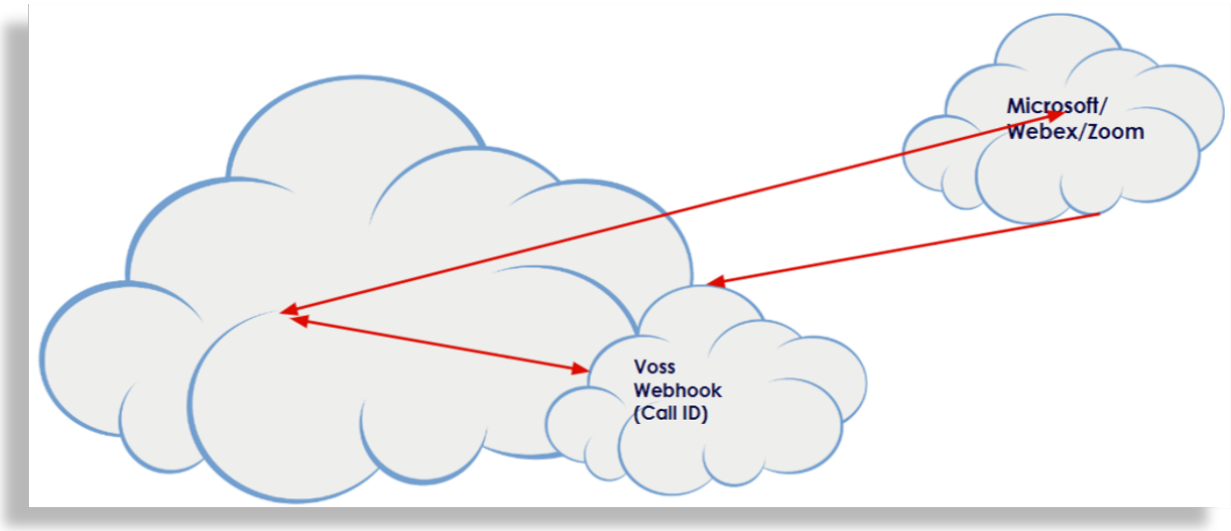
Standard Small Full VOSS Cloud Deployment

The table provides a solution description and considerations for the following example Assurance deployment scenario: 'Standard Small Full VOSS Cloud Deployment'

Solution	Considerations
• All apps hosted in VOSS Cloud • No On Premise apps to monitor	• All monitoring /call records within Cloud • No On Premise • Size of use base/call records

The image provides a graphical overview of the following example Assurance deployment scenario: 'Standard Small Full VOSS Cloud Deployment'

Note: For port details, see *System Connectivity - Port Requirements*.



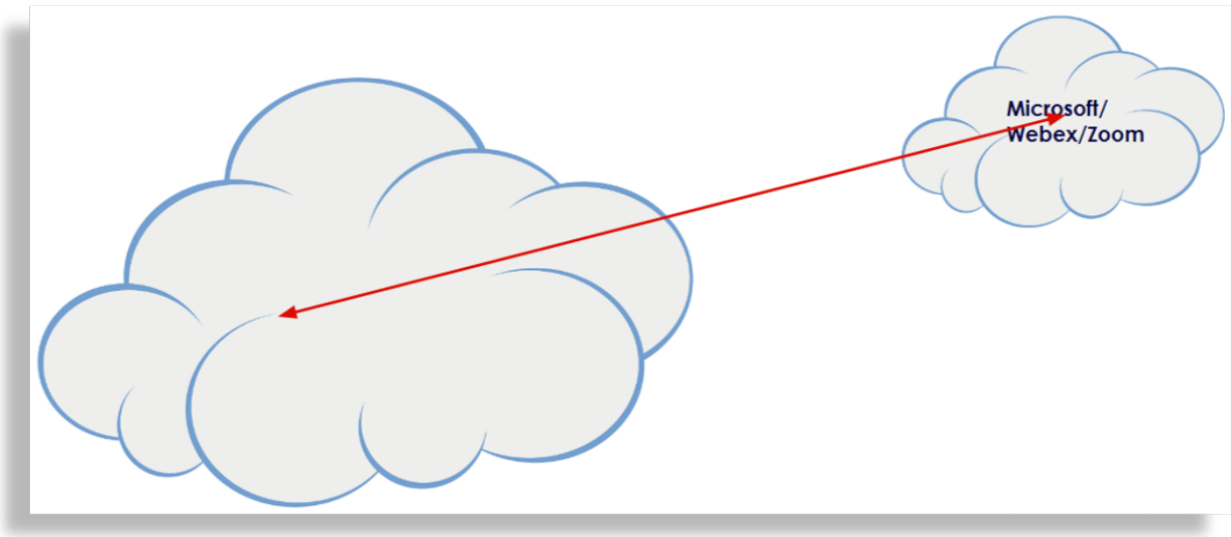
Standard Small Full VOSS Cloud Deployment (Webhooks Replaced with Graph API)

The table provides a solution description and considerations for the following example Assurance deployment scenario: 'Standard Small Full VOSS Cloud Deployment (Webhooks Replaced with Graph API)'

Solution	Considerations
• All apps hosted in VOSS Cloud • No On Premise apps to monitor	• All monitoring /call records within Cloud • No On Premise • Size of use base/call records • Webhook replaced by Graph API

The image provides a graphical overview of the following example Assurance deployment scenario: 'Standard Small Full VOSS Cloud Deployment (Webhooks Replaced with Graph API)'

Note: For port details, see *System Connectivity - Port Requirements*.



1.1.3. Standard Split Roles with Automate

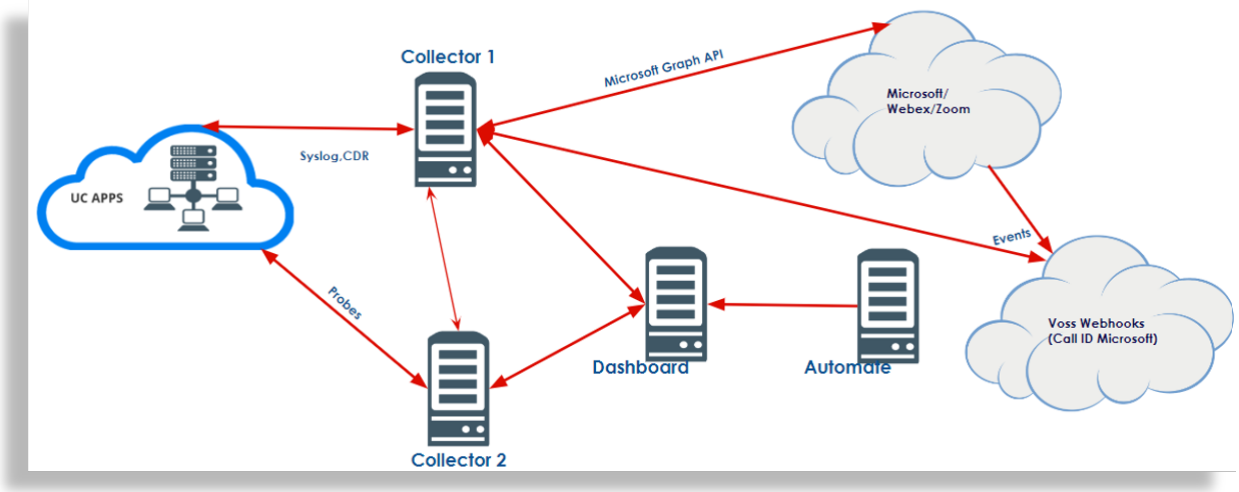
Standard Split Roles with Automate

The table provides a solution description and considerations for the following example Assurance deployment scenario: 'Standard Split Roles with Automate'

Solution	Considerations
• Dual Collectors • Single Dashboard • VOSS Automate • Collector 1 carries out syslog/CDR functions • Collector 2 carries out probe functions • VOSS Automate integrated with Dashboard • Other Cloud-based services via Arbitrator	• Dual Collector management • Limited data redundancy is available • Collectors Dashboard, etc., hosted On Premise • Ability to Air Gap if required • Roles split - due to size of estate, amount of calls, etc. • Collectors can be split over 2 Data centers

The image provides a graphical overview of the following example Assurance deployment scenario: 'Standard Split Roles with Automate'

Note: For port details, see *System Connectivity - Port Requirements*.



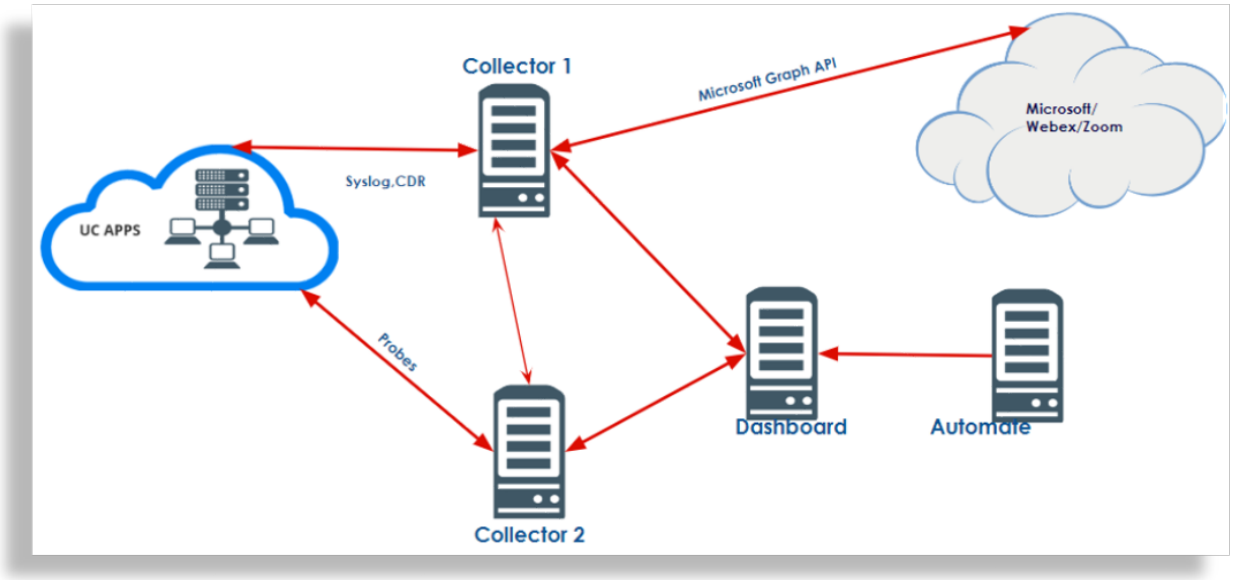
Standard Split Roles with Automate (Webhooks Replaced with Graph API)

The table provides a solution description and considerations for the following example Assurance deployment scenario: 'Standard Split Roles with Automate (Webhooks Replaced with Graph API)'

Solution	Considerations
• Dual Collectors • Single Dashboard • VOSS Automate • Collector 1 carries out syslog/CDR functions • Collector 2 carries out probe functions • VOSS Automate integrated with Dashboard • Other Cloud-based services via Arbitrator	• Dual Collector management • Limited data redundancy is available • Collectors Dashboard, etc., hosted On Premise • Ability to Air Gap if required • Roles split - due to size of estate, amount of calls, etc. • Collectors can be split over 2 Data centers • Webhooks replaced by Graph API

The image provides a graphical overview of the following example Assurance deployment scenario: 'Standard Split Roles with Automate (Webhooks Replaced with Graph API)'

Note: For port details, see *System Connectivity - Port Requirements*.



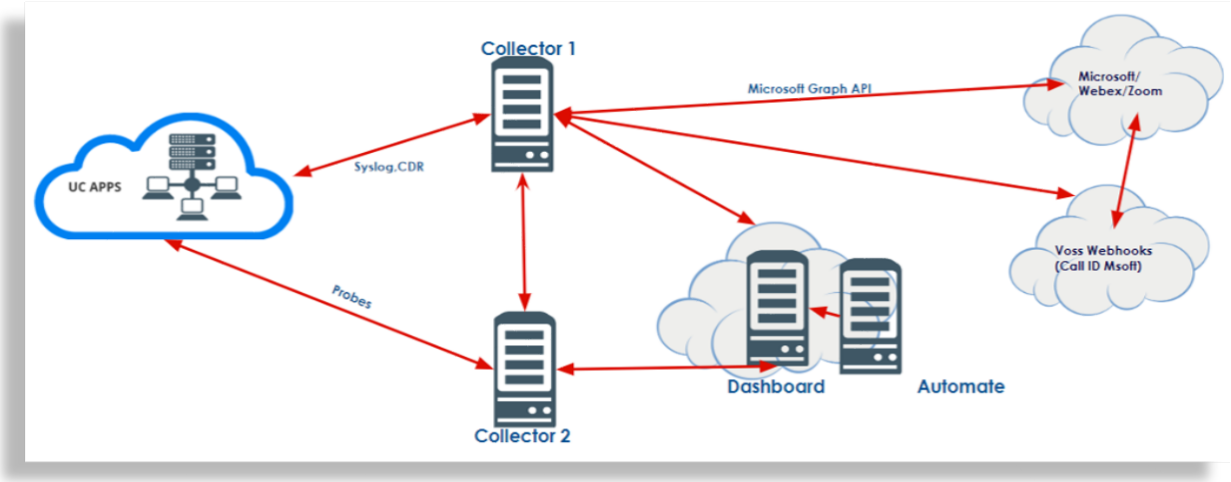
Standard Split Roles with Automate Hybrid

The table provides a solution description and considerations for the following example Assurance deployment scenario: 'Standard Split Roles with Automate Hybrid'

Solution	Considerations
• Dual Collectors • Single Dashboard hosted in Customer / VOSS Cloud • VOSS Automate • Collector 1 carries out syslog/CDR functions • Collector 2 carries out probe functions • VOSS Automate integrated with Dashboard • Other Cloud-based services via Arbitrator	• Dual Collectors management • Limited data redundancy is available • Collectors hosted On Premise • Roles split - due to size of estate, amount of calls, etc. • Collectors can be split over 2 Data centers

The image provides a graphical overview of the following example Assurance deployment scenario: 'Standard Split Roles with Automate Hybrid'

Note: For port details, see *System Connectivity - Port Requirements*.



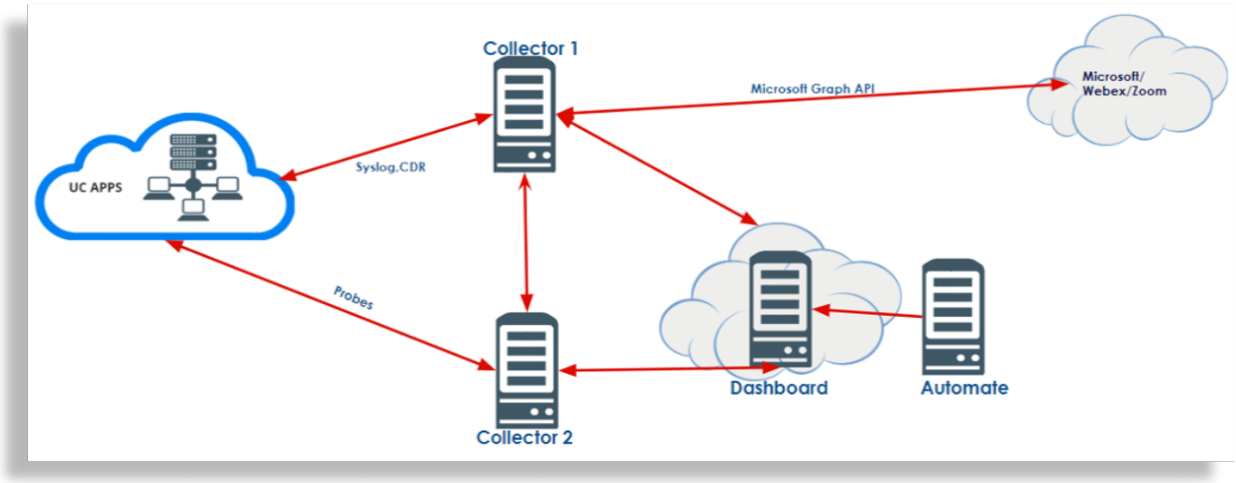
Standard Split Roles with Automate Hybrid (Webhooks Replaced with Graph API)

The table provides a solution description and considerations for the following example Assurance deployment scenario: 'Standard Split Roles with Automate Hybrid (Webhooks Replaced with Graph API)'

Solution	Considerations
• Dual Collectors • Single Dashboard hosted in Customer / VOSS Cloud • VOSS Automate • Collector 1 carries out syslog/CDR functions • Collector 2 carries out probe functions • VOSS Automate integrated with Dashboard • Other Cloud-based services via Arbitrator	• Dual Collectors management • Limited data redundancy is available • Collectors hosted On Premise • Roles split - due to size of estate, amount of calls, etc. • Collectors can be split over 2 Data centres • Webhooks replaced by Graph API

The image provides a graphical overview of the following example Assurance deployment scenario: 'Standard Split Roles with Automate Hybrid (Webhooks Replaced with Graph API)'

Note: For port details, see *System Connectivity - Port Requirements*.



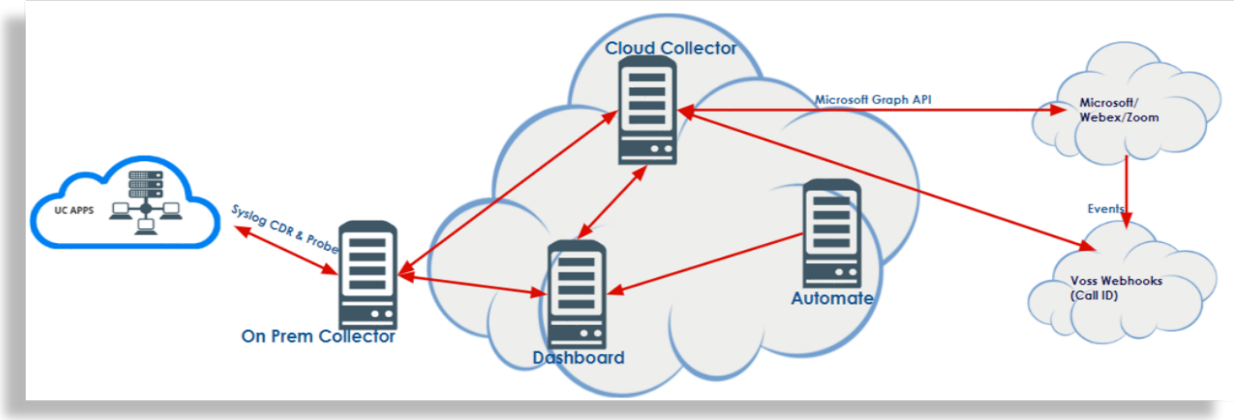
Standard Split Roles with Automate Insights Cloud

The table provides a solution description and considerations for the following example Assurance deployment scenario: 'Standard Split Roles with Automate Insights Cloud'

Solution	Considerations
• Dual Collectors 1 hosted in Customer / VOSS Cloud 1 On Premise • Single Dashboard hosted in Customer / VOSS Cloud • VOSS Automate hosted in Customer / VOSS Cloud • Collector 1 On Premise carries out syslog/CDR and probe functions • Collector 2 carries out Web (Msoft / Zoom, etc.) functions • VOSS Automate integrated with Dashboard	• Dual Collectors management • Single Dashboard hosted in Customer / VOSS Cloud • VOSS Automate hosted in Customer / VOSS Cloud • Some data redundancy is available • Designed for On Premise apps and larger Cloud apps

The image provides a graphical overview of the following example Assurance deployment scenario: 'Standard Split Roles with Automate Insights Cloud'

Note: For port details, see *System Connectivity - Port Requirements*.



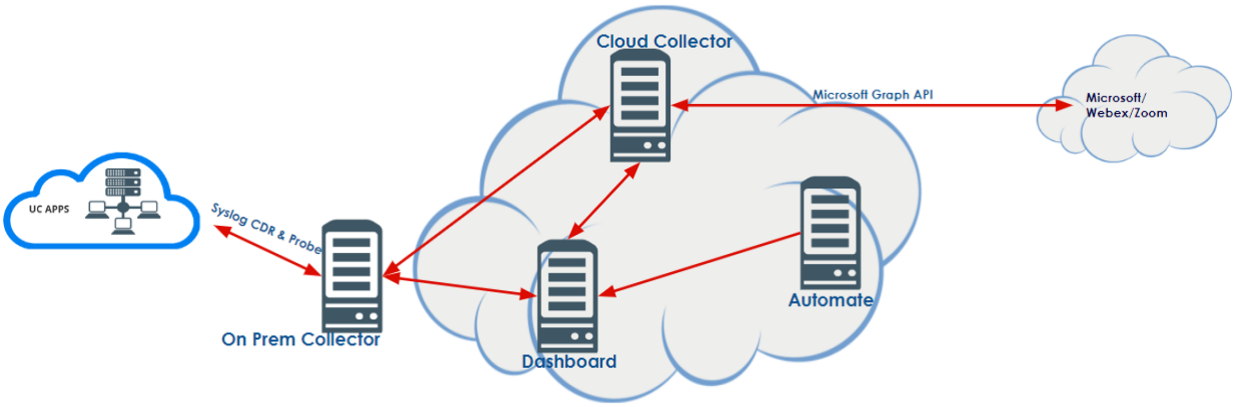
Standard Split Roles with Automate Insights Cloud (Webhooks Replaced with Graph API)

The table provides a solution description and considerations for the following example Assurance deployment scenario: 'Standard Split Roles with Automate Insights Cloud (Webhooks Replaced with Graph API)'

Solution	Considerations
• Dual Collectors 1 hosted in Customer / VOSS Cloud 1 On Premise • Single Dashboard hosted in Customer / VOSS Cloud • VOSS Automate hosted in Customer / VOSS Cloud • Collector 1 On Premise carries out syslog/CDR and probe functions • Collector 2 carries out Web (Msoft / Zoom etc) functions • VOSS Automate integrated with Dashboard	• Dual Collectors management • Single Dashboard hosted in Customer / VOSS Cloud • VOSS Automate hosted in Customer / VOSS Cloud • Some data redundancy is available • Designed for On Premise apps and larger Cloud Apps • Webhooks replaced by Graph API

The image provides a graphical overview of the following example Assurance deployment scenario: 'Standard Split Roles with Automate Insights Cloud (Webhooks Replaced with Graph API)'

Note: For port details, see *System Connectivity - Port Requirements*.



1.1.4. Dual DC Active/Active with Split Roles

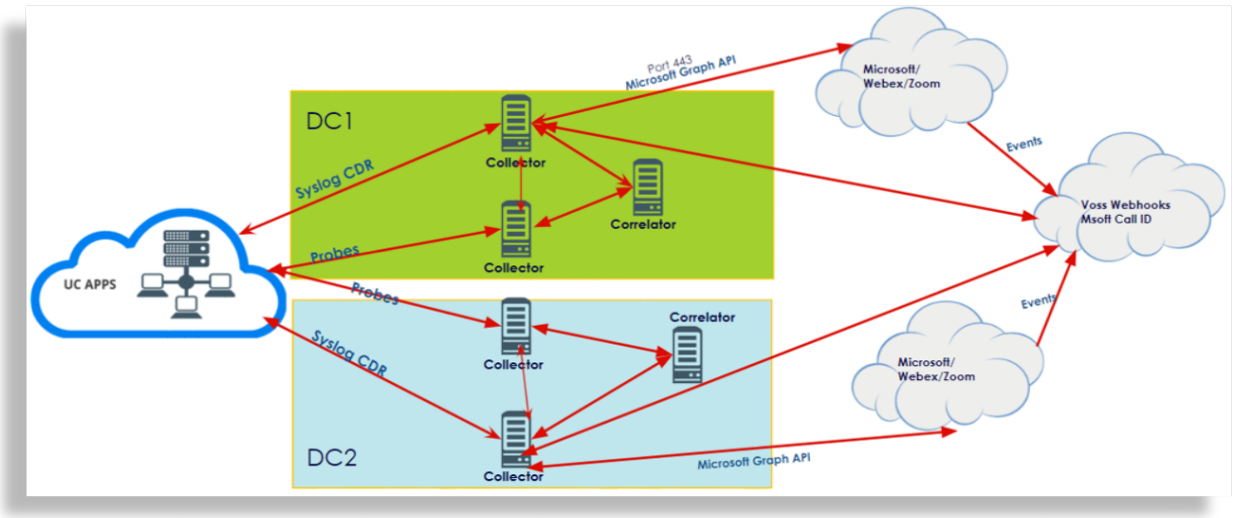
Dual DC Active/Active with Split Roles Collection and Consolidation

The table provides a solution description and considerations for the following example Assurance deployment scenario: 'Dual DC Active/Active with Split Roles Collection and Consolidation'

Solution	Considerations
• Data Redundancy • Multiple Collectors • Collector roles are split in both DCs • Correlation of CDR alerts and probes per DC • Cloud-based services can be configured on multiple Collectors • One consolidator per pair of Collectors	• Multiple Collector management (no clustering) • Roles split based on load from syslog probes and call details • Multi Geo Location • Sizing of user base /device base • Single or dual dashboards can be added for visualization

The image provides a graphical overview of the following example Assurance deployment scenario: 'Dual DC Active/Active with Split Roles Collection and Consolidation'

Note: For port details, see *System Connectivity - Port Requirements*.



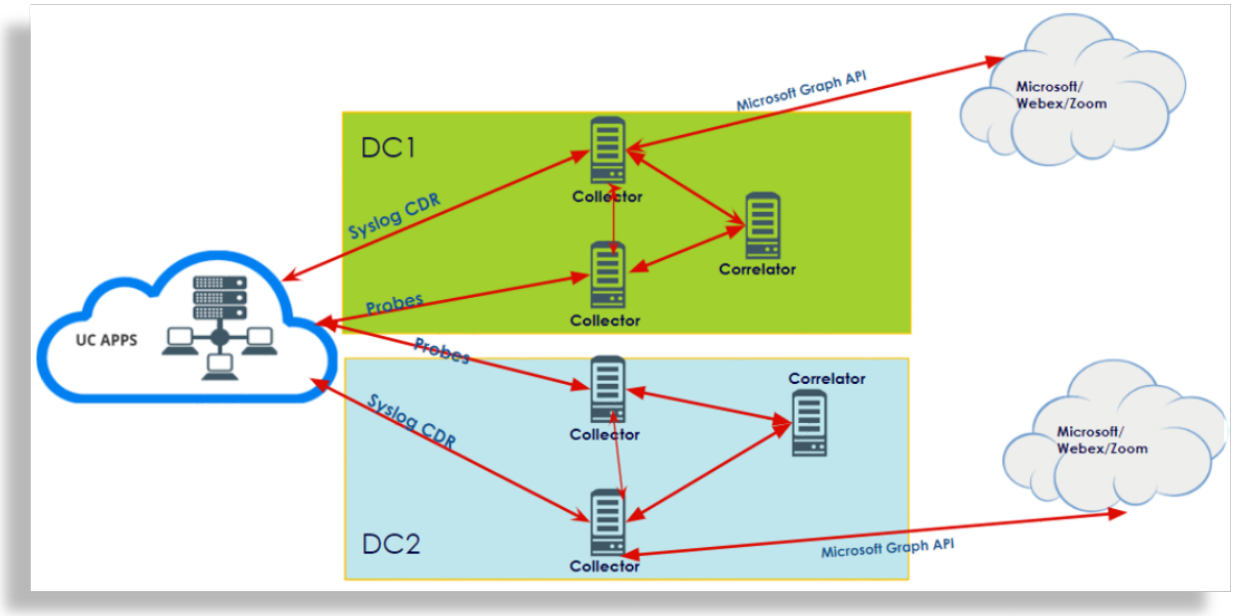
Dual DC Active/Active with Split Roles Collection and Consolidation (Webhooks Replaced with Graph API)

The table provides a solution description and considerations for the following example Assurance deployment scenario: 'Dual DC Active/Active with Split Roles Collection and Consolidation (Webhooks Replaced with Graph API)'

Solution	Considerations
• Data redundancy • Multiple Collectors • Collector roles are split in both DCs • Correlation of CDR alerts and probes per DC • Cloud-based services can be configured on multiple Collectors • One consolidator per pair of Collectors	• Multiple collector management (no clustering) • Roles split based on load from syslog Probes and Call Details • Multi Geo Location • Sizing of user base / device base • Single or dual dashboards can be added for visualization • Webhooks replaced by Graph API

The image provides a graphical overview of the following example Assurance deployment scenario: 'Dual DC Active/Active With Split Roles Collection & Consolidation (Webhooks Replaced with Graph API)'

Note: For port details, see *System Connectivity - Port Requirements*.



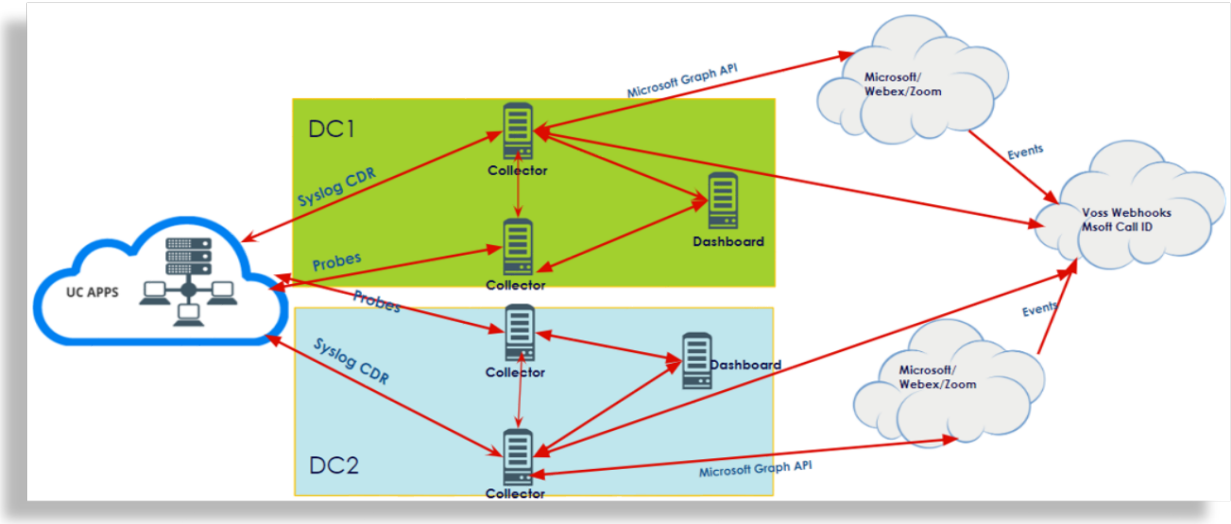
Dual DC Active/Active with Split Roles Collection and No Consolidation

The table provides a solution description and considerations for the following example Assurance deployment scenario: 'Dual DC Active/Active with Split Roles Collection and No Consolidation'

Solution	Considerations
• Data redundancy • Multiple Collectors • Collector roles are split in both DCs • Cloud-based services can be configured on multiple Collectors	• Multiple collector management (no clustering) • Roles split based on load from syslog probes and call details • Multi Geo Location • Sizing of user base / device base

The image provides a graphical overview of the following example Assurance deployment scenario: 'Dual DC Active/Active with Split Roles Collection and No Consolidation'

Note: For port details, see *System Connectivity - Port Requirements*.



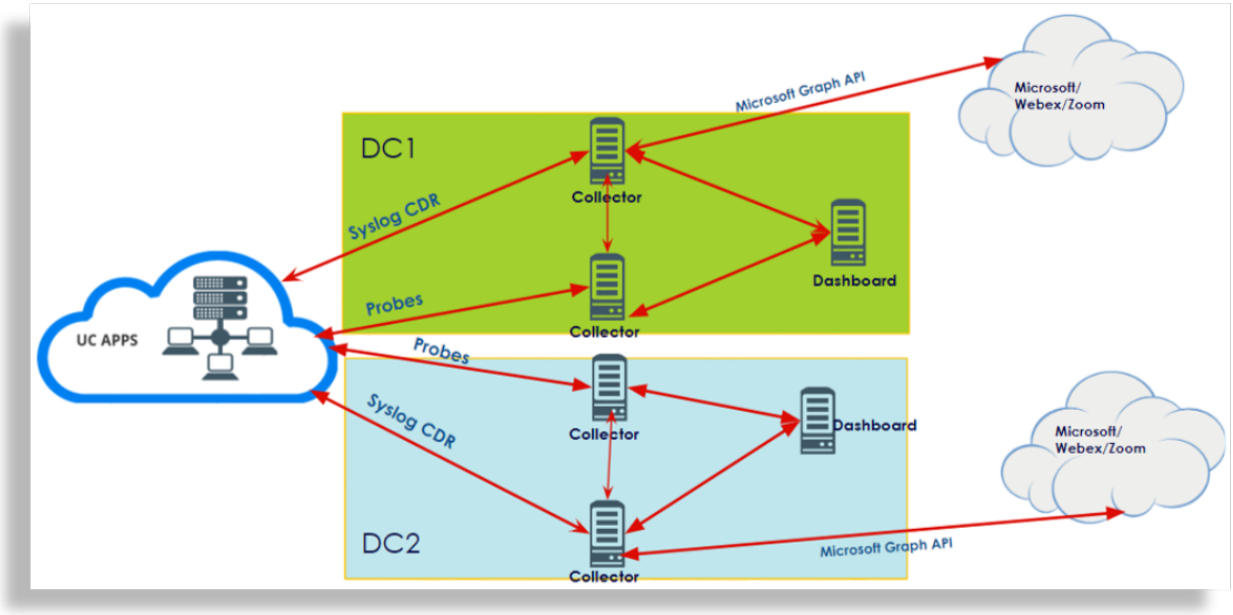
Dual DC Active/Active with Split Roles Collection and No Consolidation (Webhooks Replaced with Graph API)

The table provides a solution description and considerations for the following example Assurance deployment scenario: 'Dual DC Active/Active with Split Roles Collection and No Consolidation (Webhooks Replaced with Graph API)'

Solution	Considerations
• Data redundancy • Multiple Collectors • Collector roles are split in both DCs • Cloud-based services can be configured on multiple Collectors	• Multiple collector management (no clustering) • Roles split based on load from syslog probes and call details • Multi Geo Location • Sizing of user base / device base • Webhooks replaced by Graph API

The image provides a graphical overview of the following example Assurance deployment scenario: 'Dual DC Active/Active with Split Roles Collection and No Consolidation (Webhooks Replaced with Graph API)'

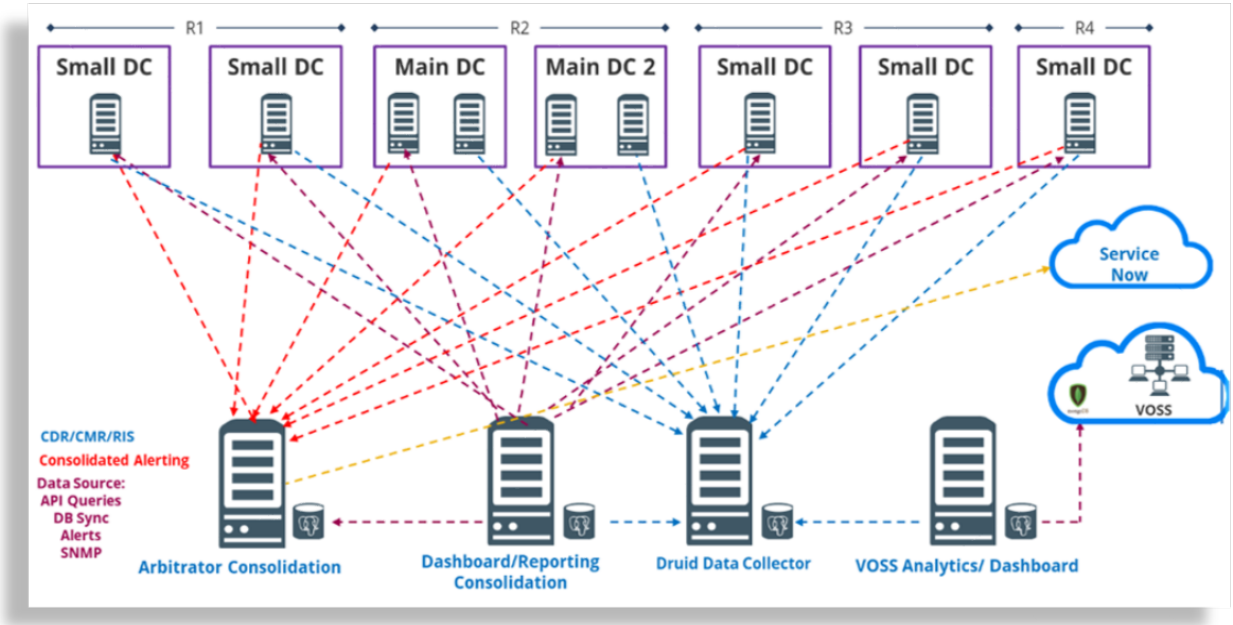
Note: For port details, see *System Connectivity - Port Requirements*.



1.1.5. Mega Deployment

The image provides a graphical overview of the following example Assurance deployment scenario: 'Mega Deployment'

Note: For port details, see *System Connectivity - Port Requirements*.



2. Ports

2.1. System Connectivity - Port Requirements

UC Monitoring System Connectivity – Port Requirements			
Source	**Destination**	**Port / protocol**	**Notes**
Monitored UC system	Correlation Server / Dashboard Server	514 tcp/udp, 22 tcp, 162 udp	syslog, snmp trap, CDR/CMR file transfer
Correlation Server	Monitored UC system	443 tcp, 8443 tcp, 22 tcp, 21 tcp, 161 udp	Correlation server AXL query, ssh and snmp query
Correlation Server / Dashboard Server	Correlation Server / Dashboard Server	5432, 5433, 5000, 60514, 64514, 64515, 65515, 65516, 64005, 64004, 62009, 62010 (all TCP)	Note: Intra-system communication and queries – Bi-directional
Correlation Server	Correlation Server	62002, 62003, 62004, 62005, 62006, 11501,30501, 30503, 40501, 40503 (all TCP)	Note: |Fabric TLS tunnel Connection Ports – Bi-directional between Customer systems and NOC systems for event forwarding
Correlation Server / Dashboard Server	Network Resources (NTP, DNS)	53, 123 UDP	Time and DNS
Client PC – GUI Interface and CLI Management Access	Correlation Server / Dashboard Server	443, 8443, 22, 80 TCP	User Interface Access
V4UC	Dashboard Server	27020	Database access
Correlation Server / Dashboard Server	AD	389 636 TCP UDP	Authentication
MS Teams	Arbitrator	443 tcp	GRAPH API
Arbitrator	Dashboard Server	443 tcp	GRAPH API