



Solution Guide :
Monitoring and Automation of
Dell EMC Integrated System
for
Microsoft Azure Stack Hub
with
mPLAT Suite Multi-Cloud Conductor

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INTRODUCTION

PURPOSE

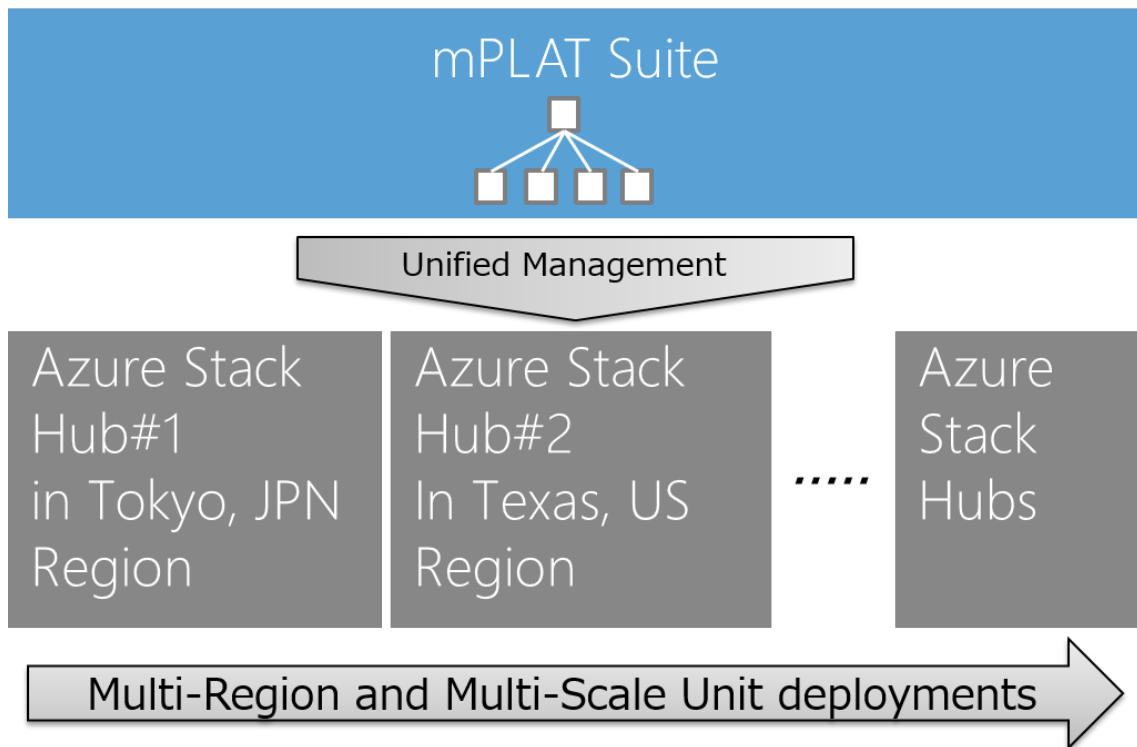
This Solution Guide explains how NRI's mPlat Suite Multi-Cloud Conductor can help enterprise users to efficiently manage and govern Azure Stack Hub deployments across multiple regions and systems.

INTENDED AUDIENCE

This document is intended for Azure Stack Hub administrators, and other IT professionals involved in Azure and Azure Stack Hub deployment, operation, and maintenance. At a minimum, an intermediate level of understanding about Public and Private Cloud is recommended.

INTENDED USE CASE

Currently, Azure Stack Hub does not provide holistic management across multiple regions or systems. Therefore, enterprise users of large-scale deployments of Azure Stack Hub, such as Managed Service Providers (MSP), are struggling with managing those deployments in a unified way.



SOLUTION OVERVIEW

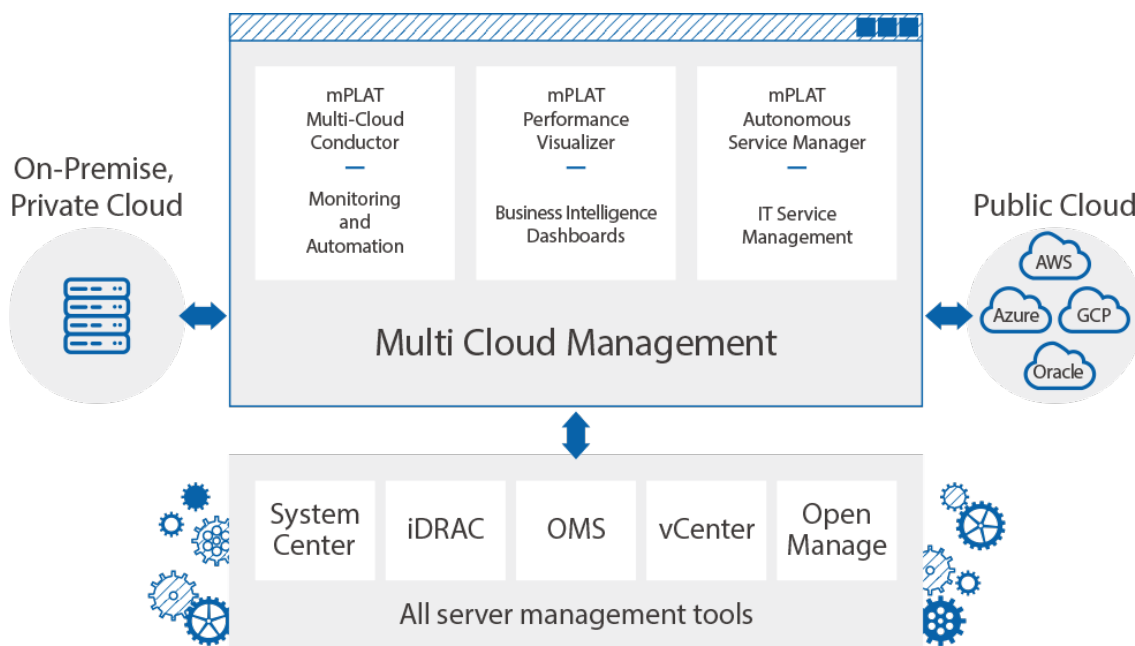
The mPLAT Suite

NRI offers a product called the mPLAT Suite that can manage multi-cloud platforms including public clouds such as AWS, Azure, and GCP, and private clouds such as Azure Stack Hub. In addition, it can streamline repetitive manual operations and workflows through runbook automation and essential IT service management. Moreover, the mPLAT Suite employs an overview dashboard that can integrate and visualize key information and cost from any IT asset across any cloud or on-premise server. This helps to optimize all IT assets and make better analytical decisions. These are key components to enable a successful digital transformation of most enterprises.

The mPLAT Suite includes the following products,

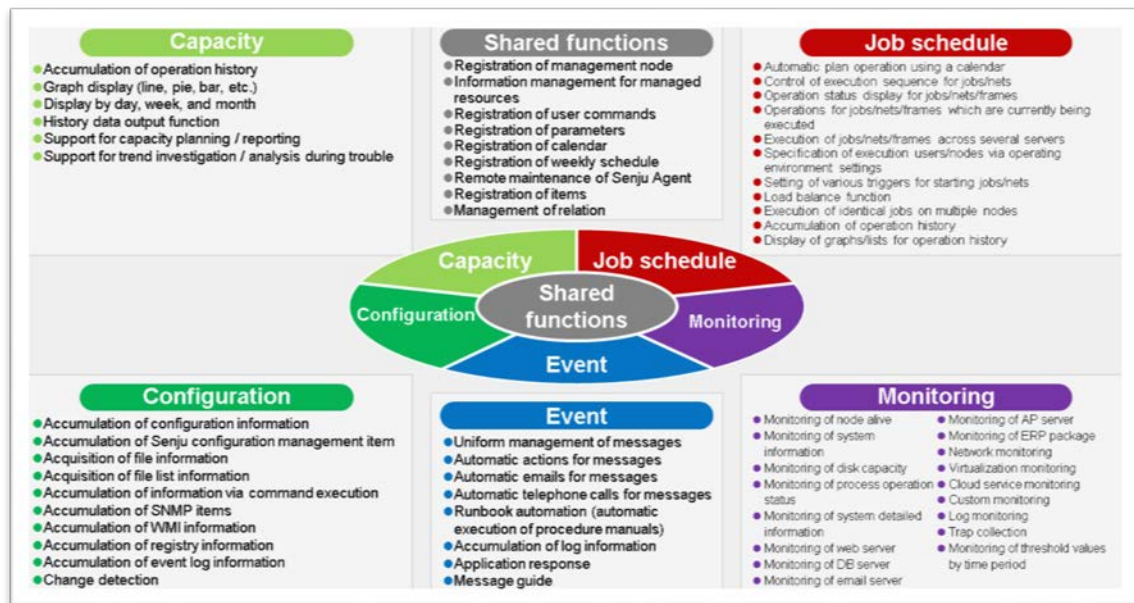
- mPLAT Multi-Cloud Conductor
- mPLAT Performance Visualizer (PV)
- mPLAT Autonomous Service Manager (ASM)
- mPLAT Cost Optimizer

See: [https:// mplat.nri.com](https://mplat.nri.com)



The mPLAT Suite Multi-Cloud Conductor

The mPLAT Suite Multi-Cloud Conductor integrates various on-premise infrastructure and cloud platforms such as Azure and Azure Stack Hub from Dell EMC to automate, manage, and deliver a holistic hybrid and multi-cloud management experience visualized with an overview dashboard.



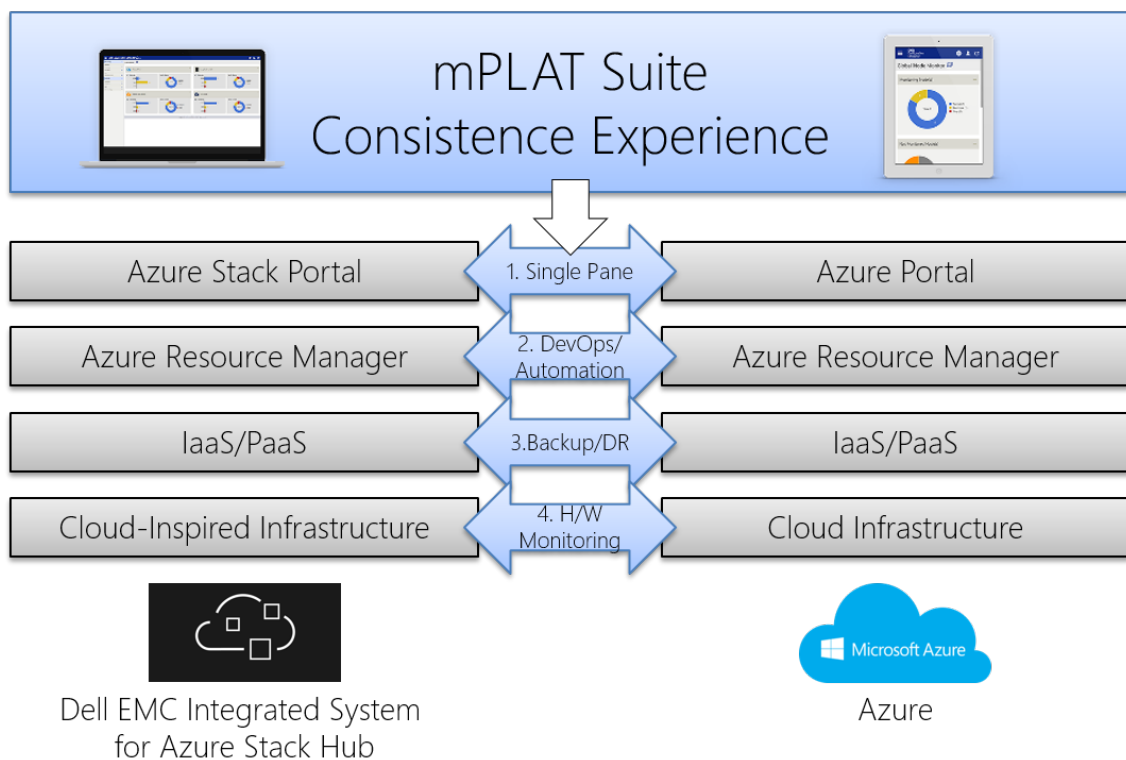
The Dell EMC Integrated System for Microsoft Azure Stack Hub

The Dell EMC Integrated System for Microsoft Azure Stack Hub is an on-premise hybrid cloud platform for delivering infrastructure and Platform-as-a-Service (PaaS) with a consistent Azure cloud experience on-premise or in the field. This solution is a fully engineered hybrid cloud platform that is built on the industry-leading Dell EMC hyperconverged architecture.

mPLAT Suite Multi-Cloud Conductor for Dell EMC Integrated System for Microsoft Azure Stack Hub

The mPLAT Suite Multi-Cloud Conductor for Azure Stack Hub is offered as a solution within Azure and the Azure Stack Hub admin portal providing visualization of VMs and other resources to users. This includes:

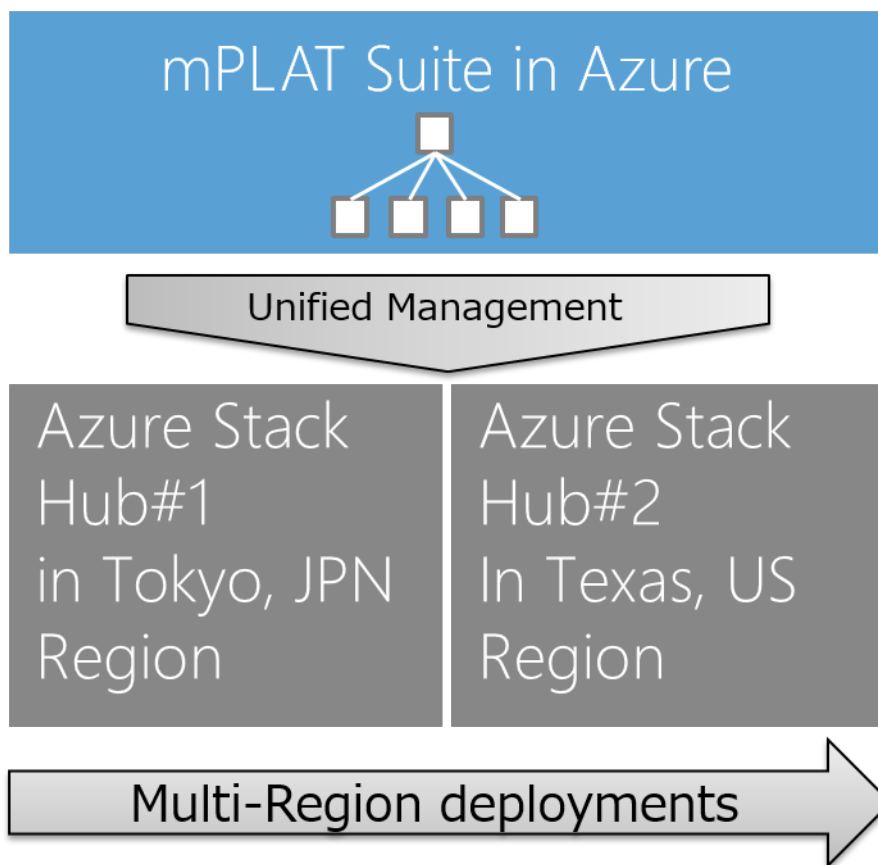
- An overview dashboard for Web, Mobile, and CLI
- Monitoring, Manage, Govern, and Provision of Multi-Region and Multi-Scale Unit for each Azure Stack Infrastructure
- Automation and job schedule by runbook with Job as a Code
- Identifies any application and infrastructure problem across the multi-cloud including Azure and Azure Stack Hub and resolves it automatically through automated runbook.



OPERATION GUIDE

Visualize multi-region and multi-scale units of Azure Stack Hub by using the mPLAT Suite Multi-Cloud Conductor

In this example, we assume that there are two regional deployments of Azure Stack Hub. One is in Tokyo, Japan, the other one is in Texas, U.S.A. The mPLAT Suite Multi-Cloud Conductor is in Azure, managing those two Azure Stack Hubs.



Monitoring Multi-Region Azure Stack Hub

The mPLAT Suite Multi-Cloud Conductor provides an overview dashboard in order to monitor all nodes on on-premise servers and the VMs in any cloud.

In this example, the mPLAT Suite Multi-Cloud Conductor monitors two Azure Stack Hub including any VMs.. From the Azure Stack Hub, the mPLAT Suite Multi-Cloud Conductor collects the following metrics:

Collecting Azure Stack Hub information in the mPLAT Suite Multi-Cloud Conductor:

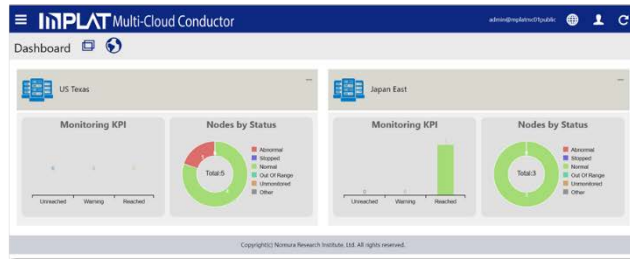
Service	Metric	Unit
Region	Alerts	Count
	Resource Provider	Status
	Updates	Status
Capacity	Physical Storage	%
	Physical Storage(Used)	TB
	Physical Storage(Max)	TB
	Physical Memory	%
	Physical Memory(Used)	TB
	Physical Memory(Max)	TB
	Public IPs	%
	Public IPs(Used)	IPs
	Public IPs(Max)	IPs
Storage Account	Storage Account	Status
Infra Role	Infra Role	Status
Scale Unit	Scale Unit Information	Status
	Node Information	Status
VNET	VNET Information	Status

Collecting Azure Stack Hub node (tenant) information in the mPLAT Suite Multi-Cloud Conductor:

Items	Metrics	Units	
Microsoft.Compute/virtualMachines	Percentage CPU	Percent	
Microsoft.Storage/storageAccounts	UsedCapacity	Bytes	
	Transactions	Count	
	Ingress	Bytes	
	Egress	Bytes	
	SuccessServerLatency	msec	
	SuccessE2ELatency	msec	
	Availability	Percent	
	Microsoft.Storage/storageAccounts/blobServices	BlobCapacity	Bytes
		BlobCount	Count
		ContainerCount	Count
Transactions		Count	
Ingress		Bytes	
Egress		Bytes	
SuccessServerLatency		msec	
SuccessE2ELatency		msec	
Availability		Percent	
Microsoft.Storage/storageAccounts/tableServices		TableCapacity	Bytes
	TableCount	Count	
	TableEntityCount	Count	
	Transactions	Count	
	Ingress	Bytes	
	Egress	Bytes	
	SuccessServerLatency	msec	
	SuccessE2ELatency	msec	
	Availability	Percent	
	Microsoft.Storage/storageAccounts/queueServices	QueueCapacity	Bytes
QueueCount		Count	
QueueMessageCount		Count	
Transactions		Count	
Ingress		Bytes	
Egress		Bytes	
SuccessServerLatency		msec	
SuccessE2ELatency		msec	
Availability		Percent	

After collecting the node information, the mPLAT Suite can visualize the health of each Azure Stack Hub either by region in a map view or by VM's or nodes in a list view.

Single Pane Dashboard



Get information from Multi-Region Azure Stack



Get information from VMs on each Azure Stack Hub



Global Node Monitor	Status	Node ID	Node Name	Production	CPU	Virtual Memory	Total Number of Resources	Ping Response	Normal
Global Node Monitor	OK	region0210	region0210	OK	24	5274	22	OK	1
Node Monitor	OK	region0210	region0210	OK	19	1720	84	OK	1
Global Node Monitor	OK	region0210	region0210	OK	21	2627	84	OK	1
Node Monitor	OK	region0210	region0210	OK	21	1927	84	OK	1

Map view example:

In the map view, we can see there are two deployments, one in the US and one in Japan. In the US, the RED circle shows an error status of the Azure Stack Hub. In Japan, the YELLOW circle shows a warning status.

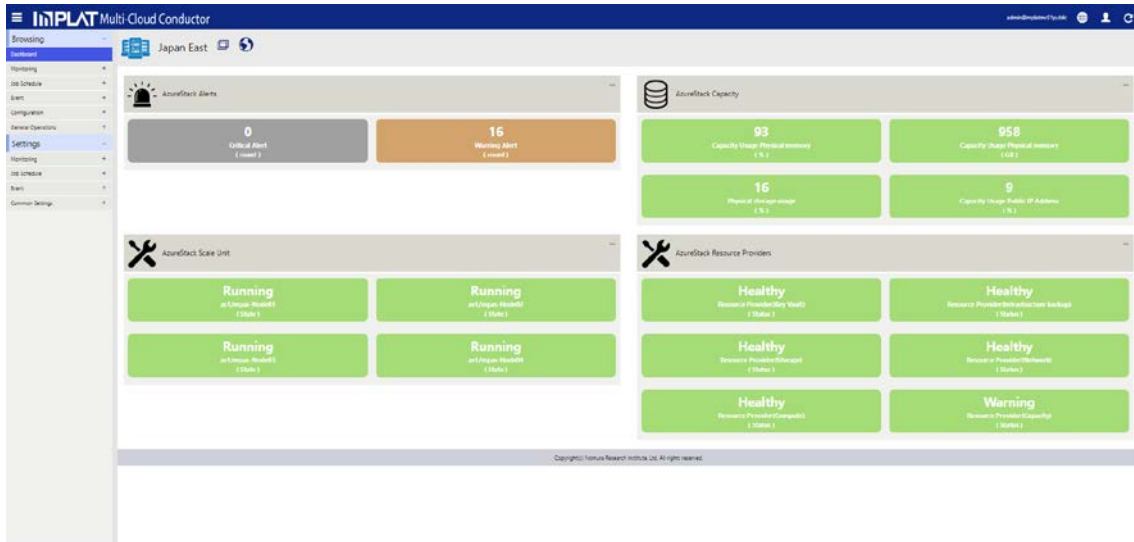


Here is another map view of this dashboard. In this example, the GREEN circle in the U.S. shows a healthy status of the Azure Stack Hub.

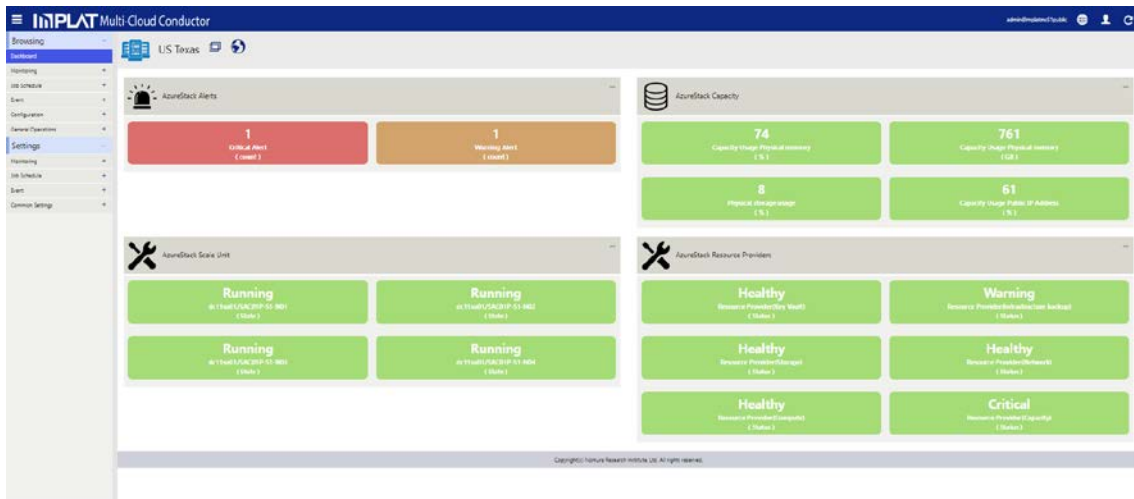


For a detailed status of each Azure Stack Hub, click on the circle in the map view. . This detailed view highlights the health by metric.

A view of the Azure Stack Infrastructure status (JPN)

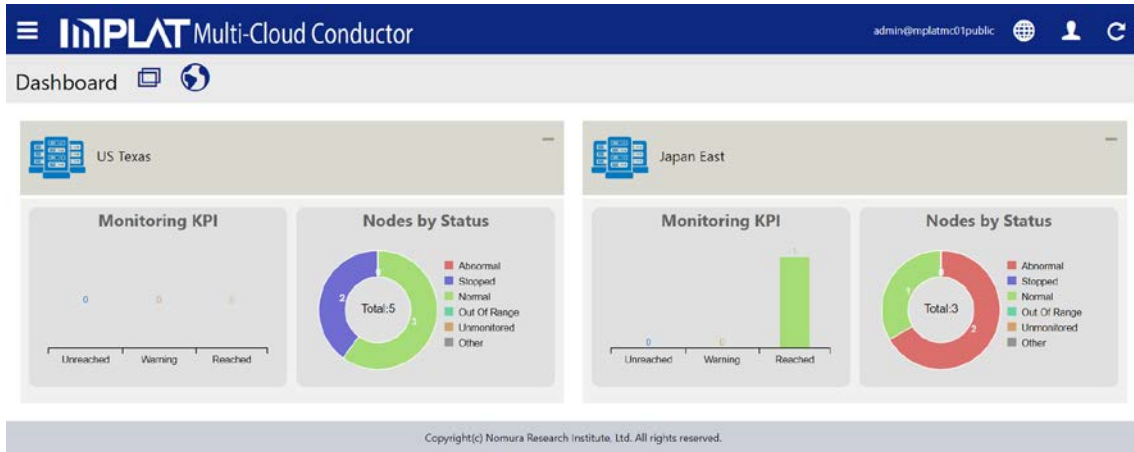


A view of the Azure Stack Infrastructure status (US)



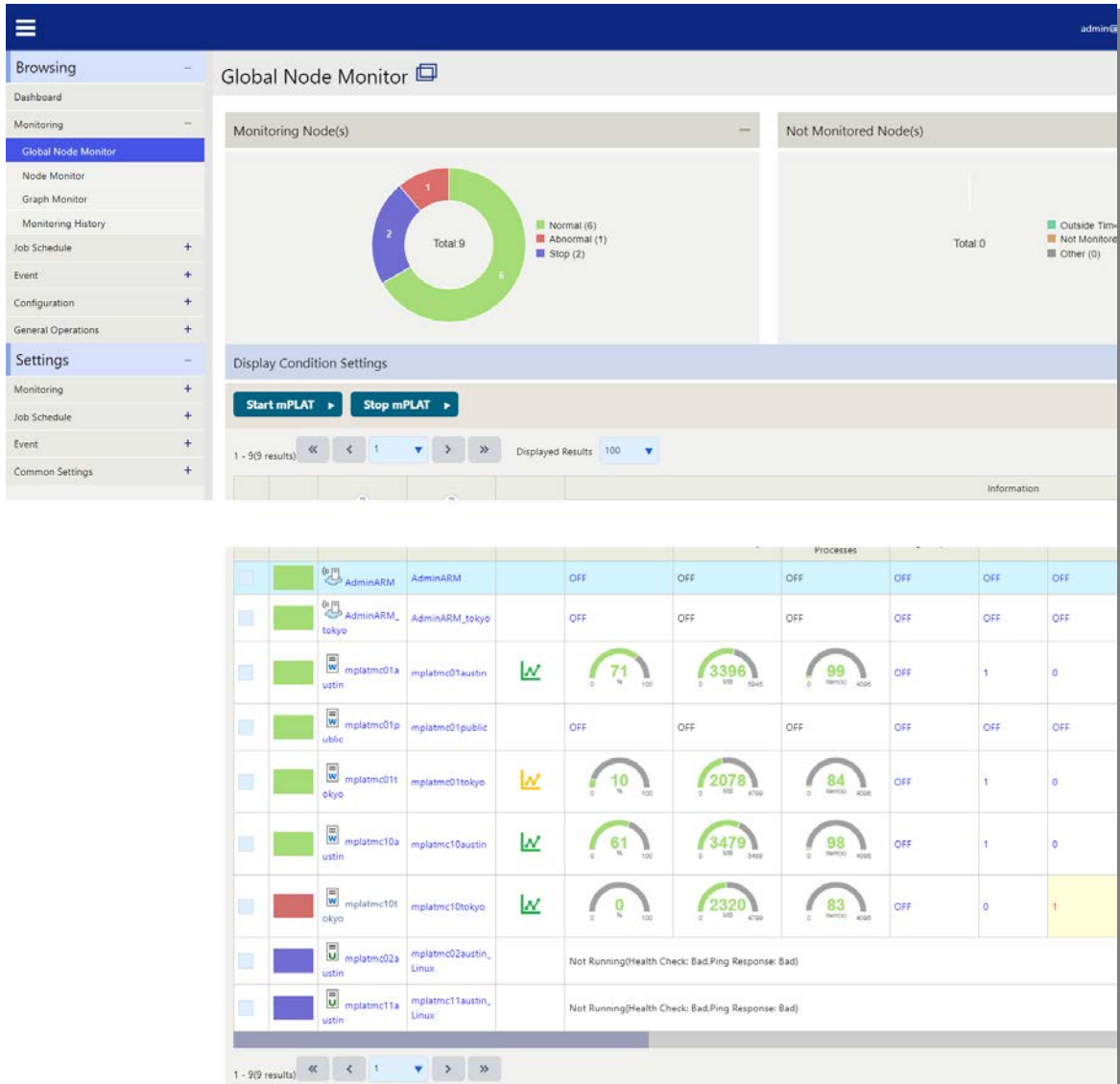
Status view by Region

In addition to the map view, the mPLAT Suite provides a status view by region. This shows the health condition in the “Nodes by Status” graph, as well as the event (incident) status in the “Monitoring KPI” graph.



Status view by Nodes (Global Node Monitor)

To check the status of each node, the mPLAT Suite Multi-Cloud Conductor provides a Global Node Monitor. In this view, you can check each node's metrics including CPU and Memory, and its status, e.g. "error" or "warning".



INSTALLATION and CONFIGURATION GUIDE

This section of the document details how the mPLAT Suite Multi-Cloud Conductor is installed on VMs in Azure or Azure Stack Hub .

INSTALL and STARTER GUIDE

For installation, see the STARTER GUIDE below. This guide shows how the mPLAT Suite Multi-Cloud Conductor is installed from Azure or the Azure Stack Hub Marketplace.

[https://mplat.nri.com/library/mPLAT_Suite_StarterGuide\(Azure_Marketplace\).pdf](https://mplat.nri.com/library/mPLAT_Suite_StarterGuide(Azure_Marketplace).pdf)

References

Dell EMC Integrated System for Microsoft Azure Stack Hub

<https://www.dell.com/technologies/infrastructure/azure-stack-hub/ready-solutions/dell-emc-cloud-for-microsoft-azure-stack-ss.pdf>

STARTER GUIDE for the mPLAT Suite Multi-Cloud Conductor

[https://mplat.nri.com/library/mPLAT_Suite_StarterGuide\(Azure_Marketplace\).pdf](https://mplat.nri.com/library/mPLAT_Suite_StarterGuide(Azure_Marketplace).pdf)

NRI

mPLAT Suite

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