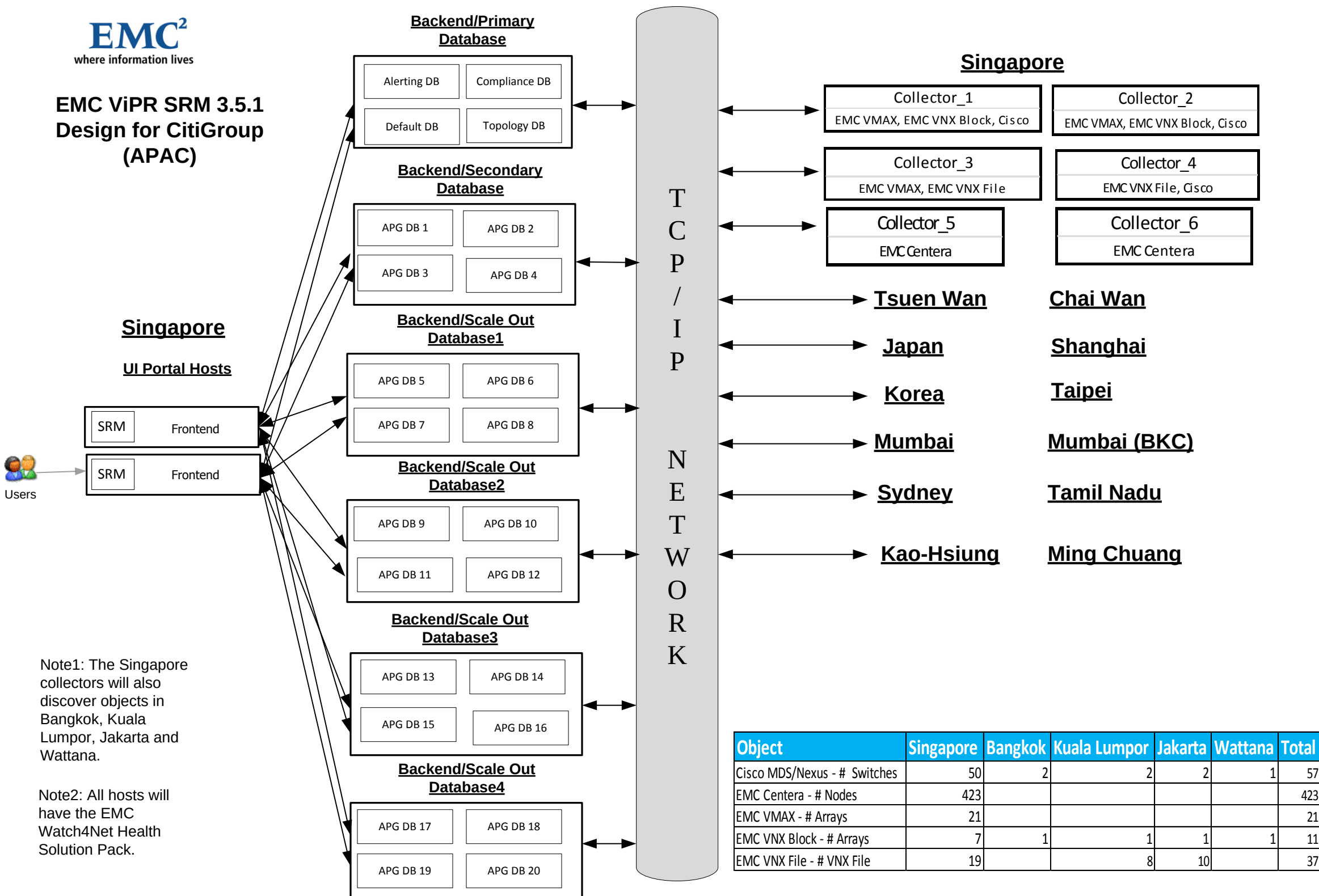


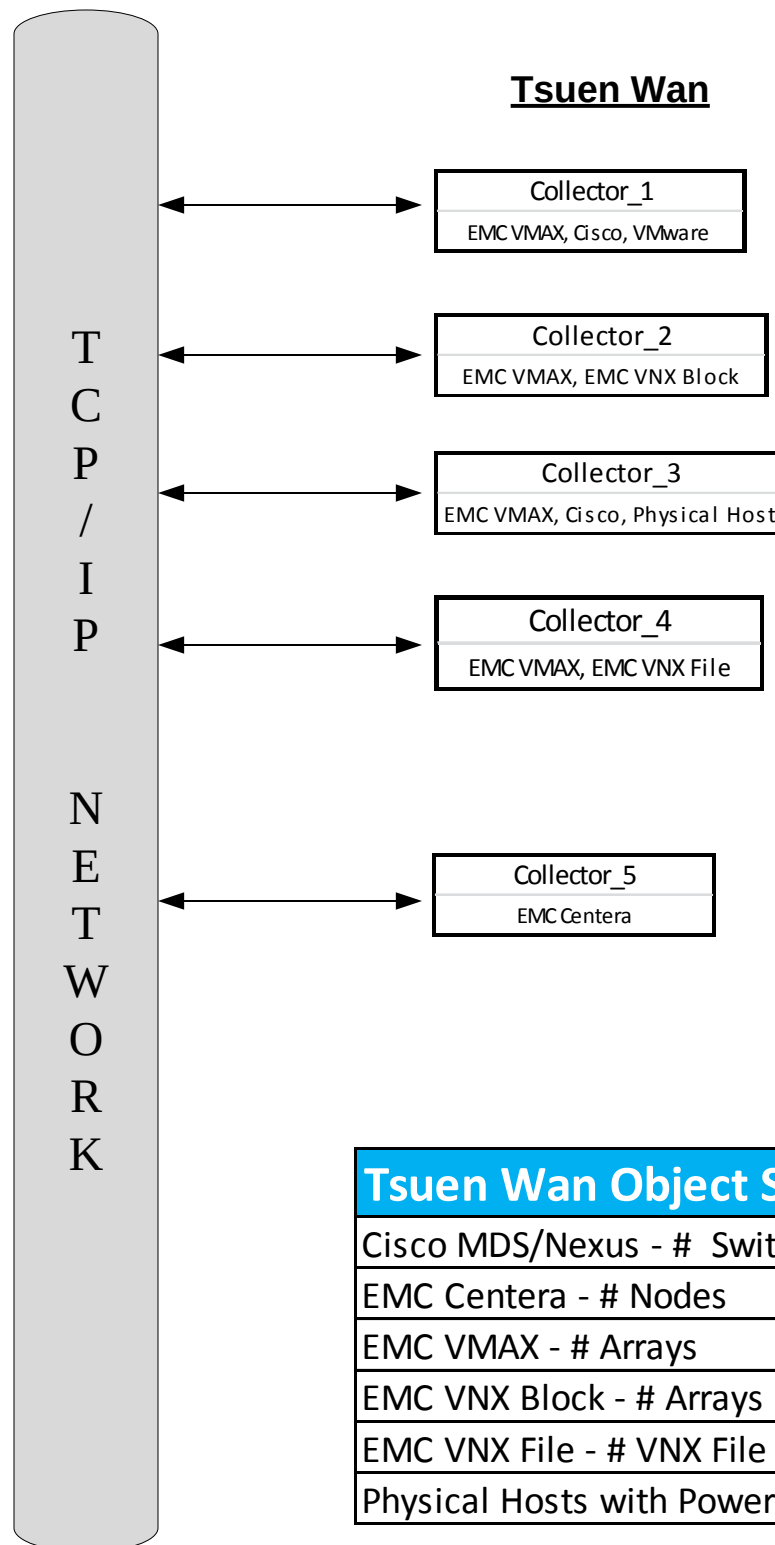


## EMC ViPR SRM 3.5.1 Design for CitiGroup (APAC)



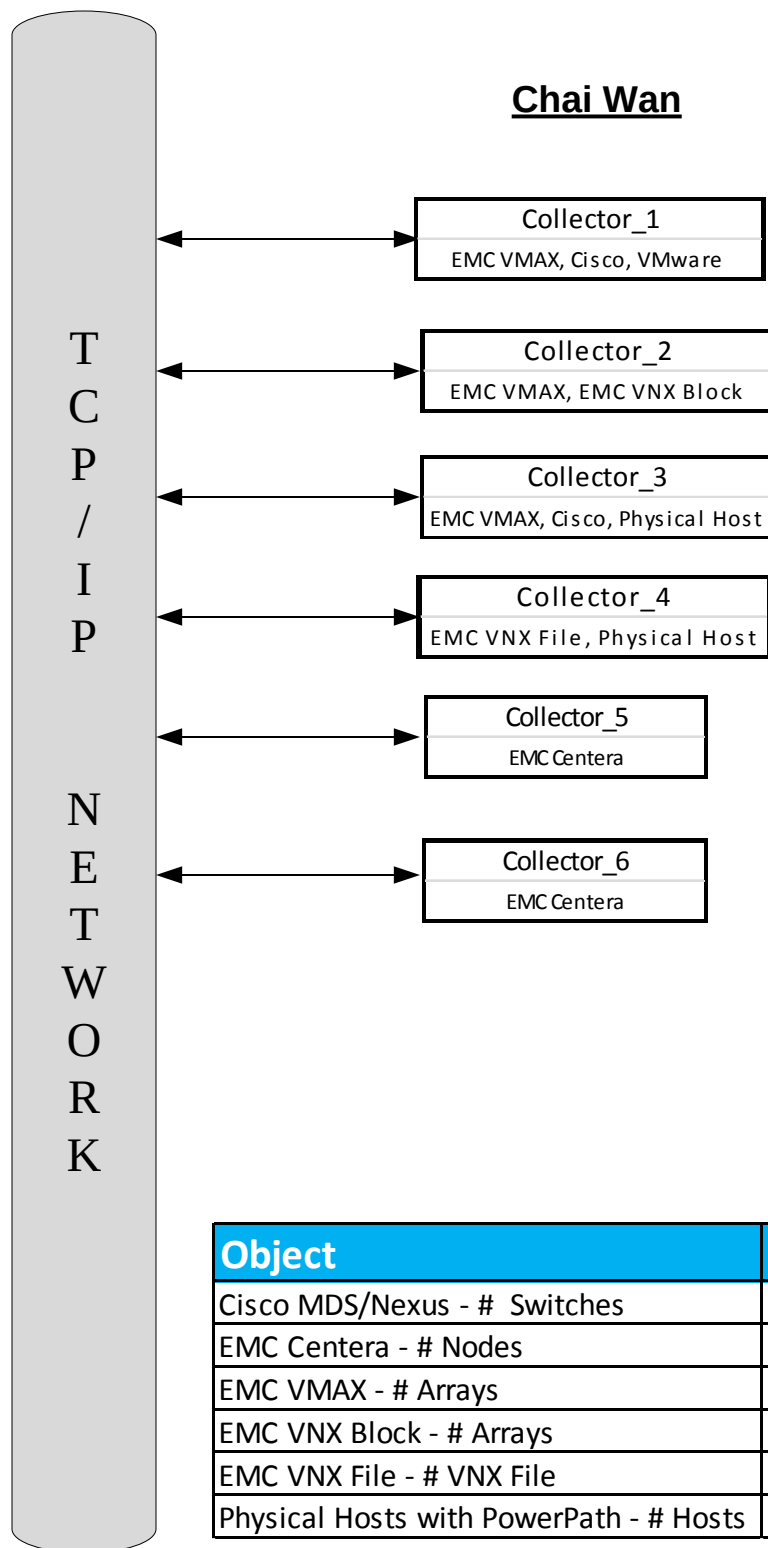
# EMC ViPR SRM 3.5.1 Design for CitiGroup (Tsuen Wan Collectors)

Note: All hosts will  
have the EMC  
Watch4Net Health  
Solution Pack



| Tsuen Wan Object Summary                | Count |
|-----------------------------------------|-------|
| Cisco MDS/Nexus - # Switches            | 22    |
| EMC Centera - # Nodes                   | 27    |
| EMC VMAX - # Arrays                     | 14    |
| EMC VNX Block - # Arrays                | 4     |
| EMC VNX File - # VNX File               | 9     |
| Physical Hosts with PowerPath - # Hosts | 190   |

## EMC ViPR SRM 3.5.1 Design for CitiGroup (Chai Wan Collectors)



Note1: The Chai Wan collectors will also discover objects in Hunghom

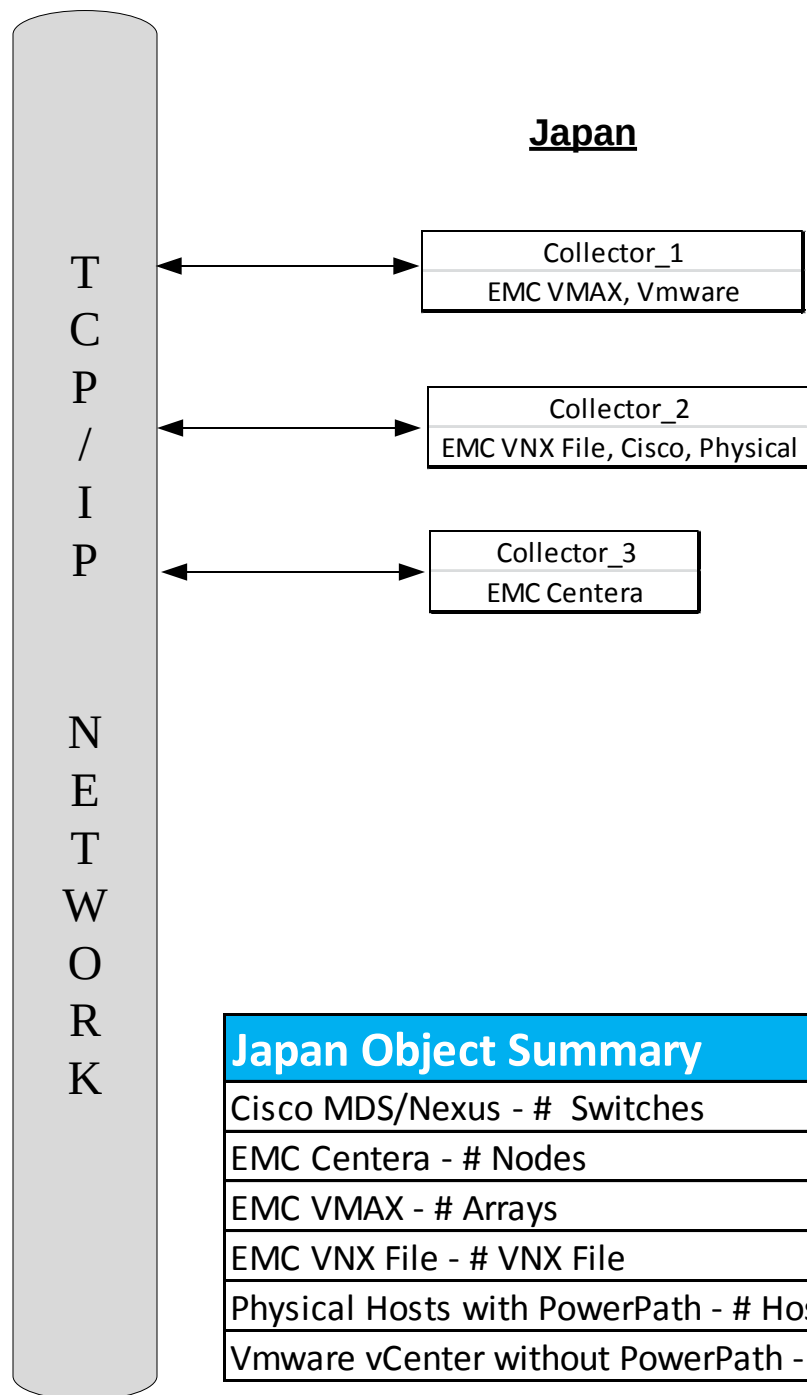
Note2: All hosts will have the EMC Watch4Net Health Solution Pack

| Object                                  | Chai Wan | Hunghom | Total |
|-----------------------------------------|----------|---------|-------|
| Cisco MDS/Nexus - # Switches            | 25       | 2       | 27    |
| EMC Centera - # Nodes                   | 316      |         | 316   |
| EMC VMAX - # Arrays                     | 9        |         | 9     |
| EMC VNX Block - # Arrays                | 4        |         | 4     |
| EMC VNX File - # VNX File               | 6        |         | 6     |
| Physical Hosts with PowerPath - # Hosts | 1032     |         | 1032  |



## EMC ViPR SRM 3.5.1 Design for CitiGroup (Japan Collectors)

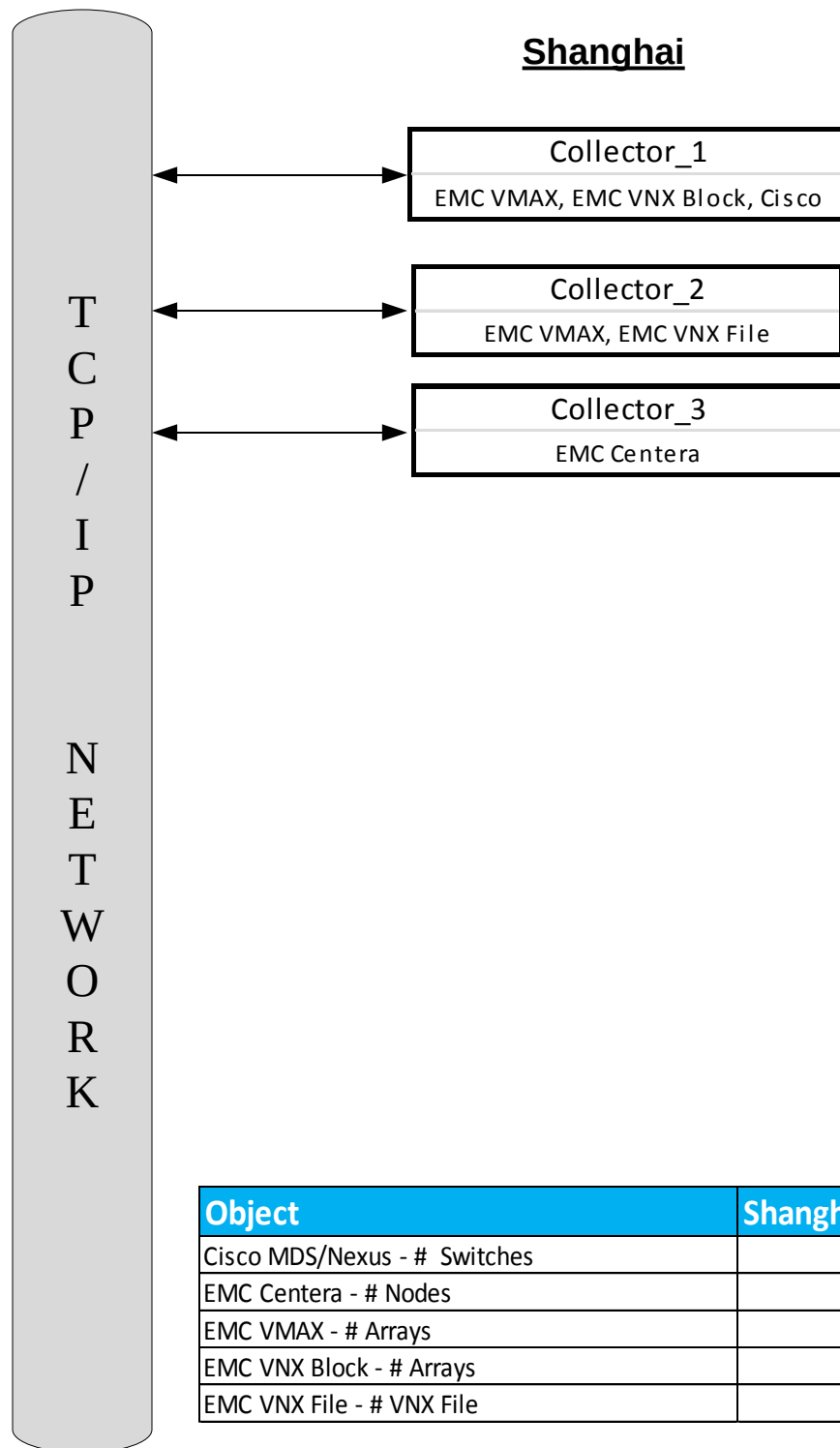
Note: All hosts will  
have the EMC  
Watch4Net Health  
Solution Pack



## EMC ViPR SRM 3.5.1 Design for CitiGroup (Shanghai Collectors)

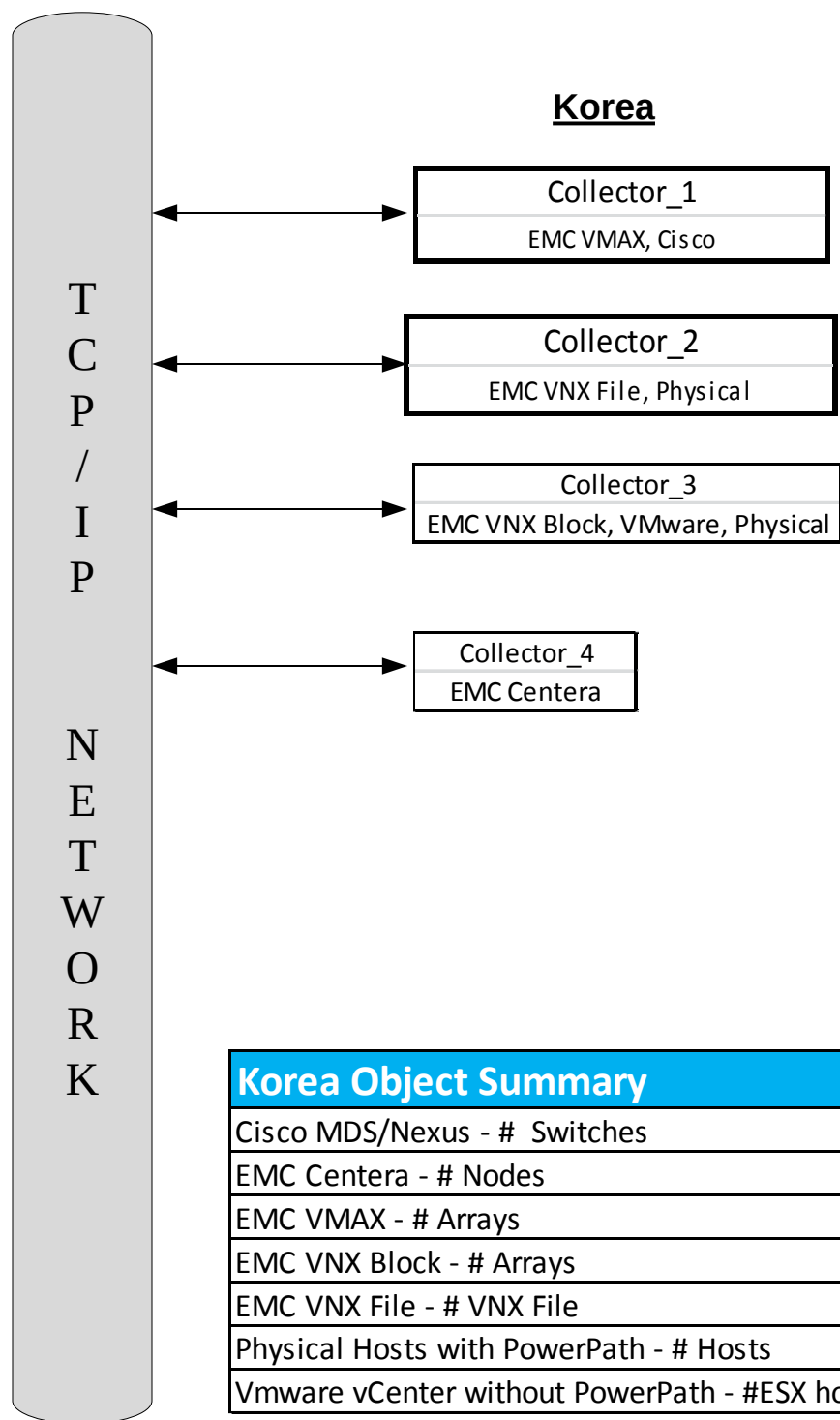
Note1: The Shanghai collectors will also discover objects in Beijing.

Note2: All hosts will have the EMC Watch4Net Health Solution Pack.





## EMC ViPR SRM 3.5.1 Design for CitiGroup (Korea Collectors)

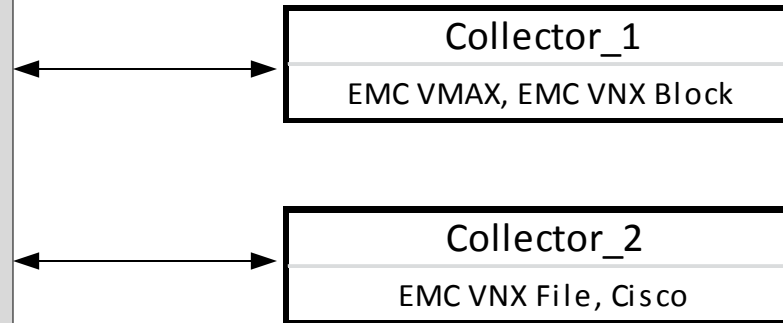


Note: All hosts will have the EMC Watch4Net Health Solution Pack.



TCP / IP

# NETWORK



Note2: All hosts will have the EMC Watch4Net Health Solution Pack.

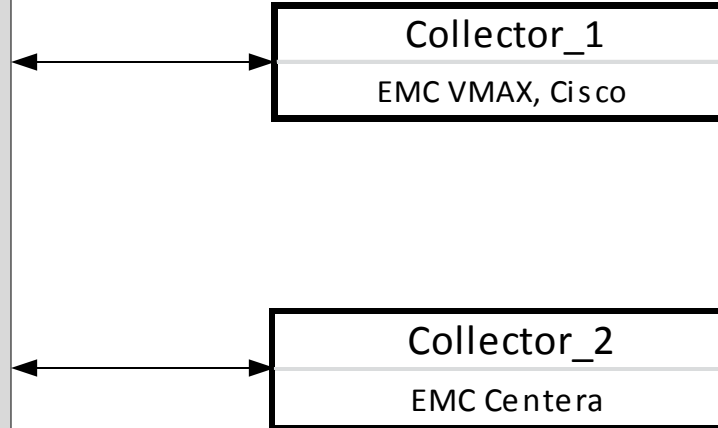
| Object                       | Mumbai | New Delhi | Total |
|------------------------------|--------|-----------|-------|
| Cisco MDS/Nexus - # Switches | 4      | 2         | 6     |
| EMC VMAX - # Arrays          | 1      |           | 1     |
| EMC VNX Block - # Arrays     | 1      | 1         | 2     |
| EMC VNX File - # VNX File    |        | 2         | 2     |



**EMC ViPR SRM 3.5.1  
Design for CitiGroup  
(Mumbai (BKC) Collectors)**

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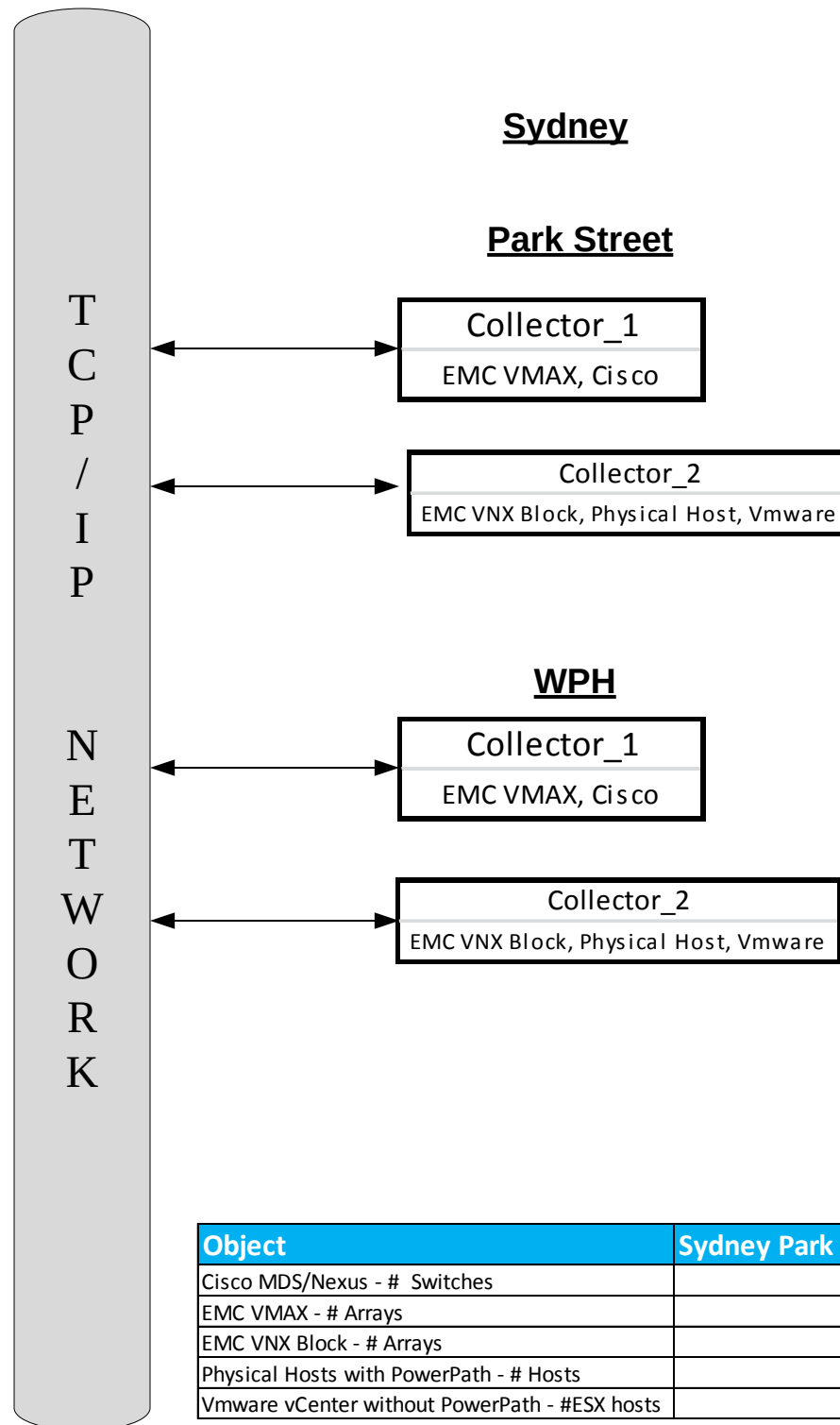
**Mumbai (BKC)**



Note: All hosts will have the EMC Watch4Net Health Solution Pack.

| Mumbai (BKC) Object Summary  | Count |
|------------------------------|-------|
| Cisco MDS/Nexus - # Switches | 2     |
| EMC Centera - # Nodes        | 14    |
| EMC VMAX - # Arrays          | 1     |

**EMC ViPR SRM 3.5.1  
Design for CitiGroup  
(Sydney)**



Note: All hosts will have the EMC Watch4Net Health Solution Pack.

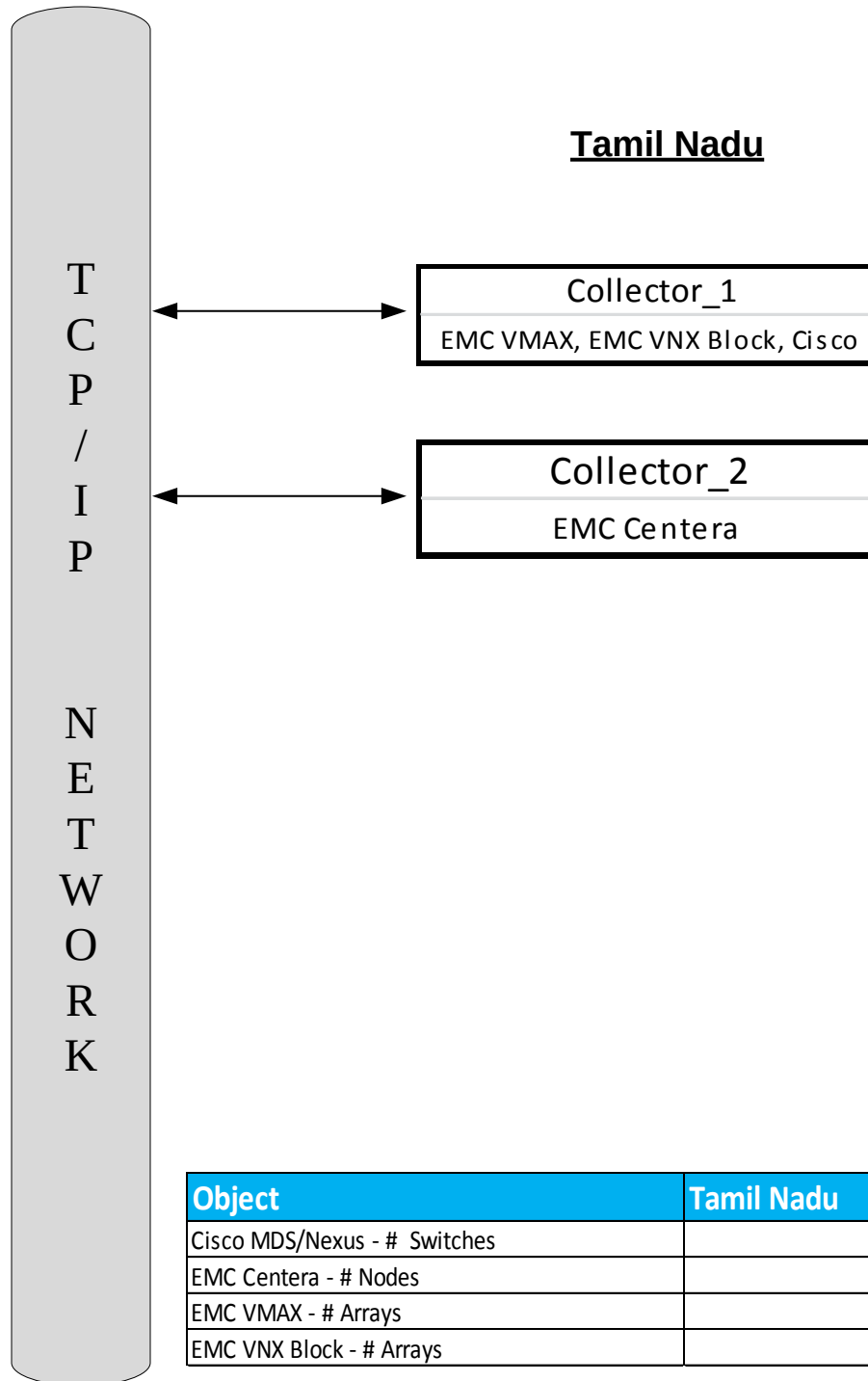
| Object                                        | Sydney Park St | Sydney WPH | Total |
|-----------------------------------------------|----------------|------------|-------|
| Cisco MDS/Nexus - # Switches                  | 2              | 2          | 4     |
| EMC VMAX - # Arrays                           | 1              | 1          | 2     |
| EMC VNX Block - # Arrays                      | 1              | 1          | 2     |
| Physical Hosts with PowerPath - # Hosts       | 54             | 21         | 75    |
| Vmware vCenter without PowerPath - #ESX hosts | 2              | 1          | 3     |



## EMC ViPR SRM 3.5.1 Design for CitiGroup (Tamil Nadu Collectors)

Note1: The Tamil Nadu collectors will also discover objects in Chennai.

Note2: All hosts will have the EMC Watch4Net Health Solution Pack.



### Tamil Nadu

Collector\_1

EMC VMAX, EMC VNX Block, Cisco

Collector\_2

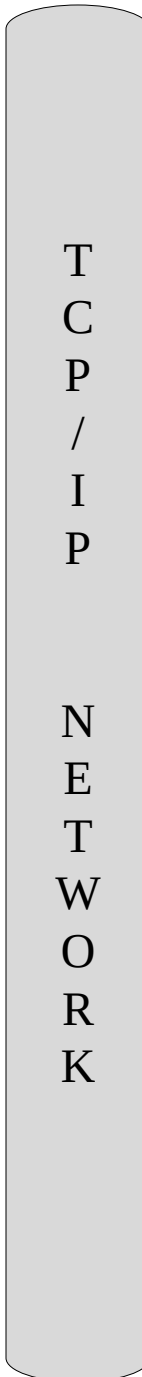
EMC Centera



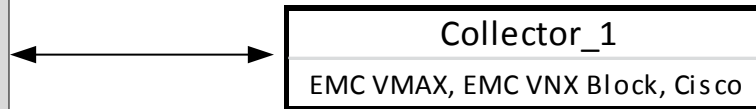
## EMC ViPR SRM 3.5.1 Design for CitiGroup (Kao Hsiung Collectors)

Note1: The Kao  
Hsiung collectors will  
also discover objects  
in Seoul.

Note2: All hosts will  
have the EMC  
Watch4Net Health  
Solution Pack.



### Kao Hsiung



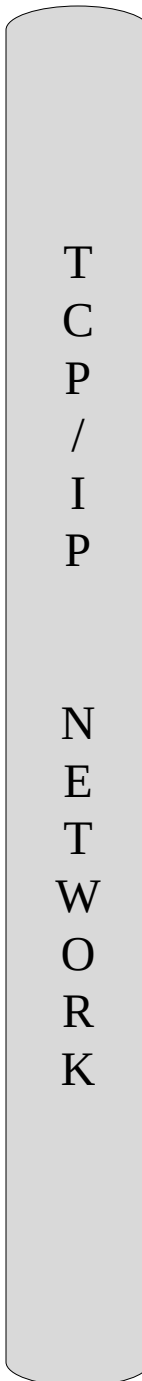
| Object                       | Kao Hsiung | Seoul | Total |
|------------------------------|------------|-------|-------|
| Cisco MDS/Nexus - # Switches | 4          | 2     | 6     |
| EMC VMAX - # Arrays          | 1          |       | 1     |
| EMC VNX Block - # Arrays     | 1          | 1     | 2     |



## EMC ViPR SRM 3.5.1 Design for CitiGroup (Ming Chuang Collectors)

Note1: The Ming Chuang collectors will also discover objects in Sung Zhu.

Note2: All hosts will have the EMC Watch4Net Health Solution Pack.

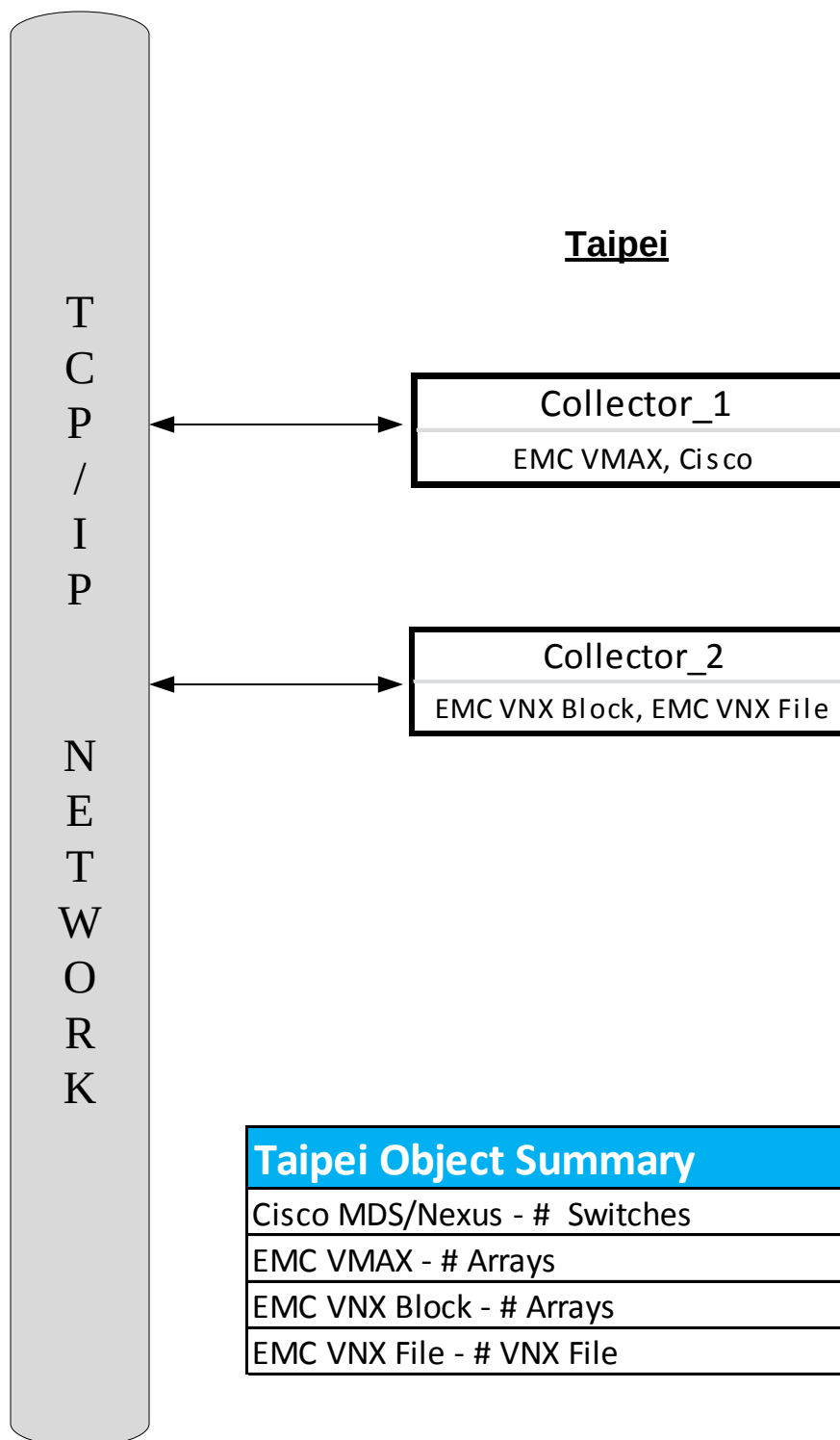


### Ming Chuang



| Object                       | Ming Chuang | Sung Zhu | Total |
|------------------------------|-------------|----------|-------|
| Cisco MDS/Nexus - # Switches | 2           | 2        | 4     |
| EMC VMAX - # Arrays          | 1           |          | 1     |

**EMC ViPR SRM 3.5.1  
Design for CitiGroup  
(Taipei Collectors)**



Note: All hosts will have the EMC Watch4Net Health Solution Pack.

| Taipei Object Summary        | Count |
|------------------------------|-------|
| Cisco MDS/Nexus - # Switches | 4     |
| EMC VMAX - # Arrays          | 1     |
| EMC VNX Block - # Arrays     | 1     |
| EMC VNX File - # VNX File    | 3     |

## SRM Sizing

| Solution Pack                                 | Count  | Total Metrics | Growth Factor | Projection |
|-----------------------------------------------|--------|---------------|---------------|------------|
| EMC VMAX - # Arrays                           | 65     | 41925         | 25            | 52407      |
| EMC VMAX - # Disks                            | 22534  | 247874        | 25            | 309843     |
| EMC VMAX - # Devices                          | 485519 | 10195899      | 25            | 12744874   |
| EMC VMAX - # Pools                            | 69     | 621           | 25            | 777        |
| EMC VMAX - # Directors                        | 2036   | 91620         | 25            | 114525     |
| EMC VNX Block - # Arrays                      | 31     | 18197         | 25            | 22747      |
| EMC VNX Block - # Disks                       | 1383   | 24894         | 25            | 31118      |
| EMC VNX Block - # LUNs                        | 2691   | 94185         | 25            | 117732     |
| EMC VNX Block - # Pools                       | 30     | 810           | 25            | 1013       |
| EMC VNX File - # VNX File                     | 73     | 113880        | 25            | 142350     |
| EMC VNX File - # FileSystem                   | 189    | 2646          | 25            | 3308       |
| EMC VNX File - # DataMovers                   | 161    | 7567          | 25            | 9459       |
| EMC Centera - # Systems                       | 10     | 320           | 25            | 400        |
| EMC Centera - # Storage Pools                 | 561    | 2805          | 25            | 3507       |
| EMC Centera - # Nodes                         | 906    | 5436          | 25            | 6795       |
| VMware vCenter - # ESX hosts                  | 51     | 5049          | 25            | 6312       |
| VMware vCenter - # Virtual Machines           | 600    | 26400         | 25            | 33000      |
| VMware vCenter - # RDMS/DataStores            | 568    | 8520          | 25            | 10650      |
| Physical Hosts with Powerpath - # Hosts       | 2163   | 116802        | 25            | 146003     |
| Physical Hosts with Powerpath - # FileSystems | 2163   | 8652          | 25            | 10815      |
| Physical Hosts with Powerpath - # Paths       | 2      | 18            | 25            | 23         |
| Cisco MDS/Nexus - Total number of Switches    | 174    | 147726        | 25            | 184658     |
| Cisco MDS/Nexus - # Ports and Interfaces      | 46286  | 4767458       | 25            | 5959323    |
| Metric Totals                                 |        | 15929304      |               | 19911639   |

# EMC SRM Infrastructure Requirements

## (1 of 2)

| VM Purpose         | Number of vCPU | Memory (GB) | OS Disk Space (GB) | Application Disk Space (GB) | Total Disk Space (GB) | Contains                                                | Location  | OS      |
|--------------------|----------------|-------------|--------------------|-----------------------------|-----------------------|---------------------------------------------------------|-----------|---------|
| Frontend_1         | 4 @3.0 GHZ     | 16          | 50                 | 70                          | 120                   | Front End 1                                             | Singapore | Linux   |
| Frontend_2         | 4 @3.0 GHZ     | 16          | 50                 | 70                          | 120                   | Front End 2                                             | Singapore | Linux   |
| Primary Backend    | 4 @3.0 GHZ     | 24          | 50                 | 724                         | 774                   | Compliance, Alerting, Topology, Default DB              | Singapore | Linux   |
| Secondary Backend  | 4 @3.0 GHZ     | 24          | 50                 | 1,847                       | 1,897                 | Data Base & Back End: DB1, DB2, DB3, DB4                | Singapore | Linux   |
| ScaleOut Backend_1 | 4 @3.0 GHZ     | 24          | 50                 | 1,847                       | 1,897                 | Data Base & Back End Scaleout_1: DB5, DB6, DB7, DB8     | Singapore | Linux   |
| ScaleOut Backend_2 | 4 @3.0 GHZ     | 24          | 50                 | 1,847                       | 1,897                 | Data Base & Back End Scaleout_2: DB9, DB10, DB11, DB12  | Singapore | Linux   |
| ScaleOut Backend_3 | 4 @3.0 GHZ     | 24          | 50                 | 1,847                       | 1,897                 | Data Base & Back End Scaleout_3: DB13, DB14, DB15, DB16 | Singapore | Linux   |
| ScaleOut Backend_4 | 4 @3.0 GHZ     | 24          | 50                 | 1,847                       | 1,897                 | Data Base & Back End Scaleout_4: DB17, DB18, DB19, DB20 | Singapore | Linux   |
| Collector_1        | 4 @2.6 GHZ     | 24          | 50                 | 150                         | 200                   | EMC VMAX, EMC VNX Block, Cisco                          | Singapore | Linux   |
| Collector_2        | 4 @2.6 GHZ     | 24          | 50                 | 150                         | 200                   | EMC VMAX, EMC VNX Block, Cisco                          | Singapore | Linux   |
| Collector_3        | 4 @2.6 GHZ     | 24          | 50                 | 150                         | 200                   | EMC VMAX, EMC VNX File                                  | Singapore | Linux   |
| Collector_4        | 4 @2.6 GHZ     | 24          | 50                 | 150                         | 200                   | EMC VNX File, Cisco                                     | Singapore | Linux   |
| Collector_5        | 2 @2.6 GHZ     | 16          | 50                 | 70                          | 120                   | EMC_Centera                                             | Singapore | Windows |
| Collector_6        | 2 @2.6 GHZ     | 16          | 50                 | 70                          | 120                   | EMC_Centera                                             | Singapore | Windows |
| Collector_1        | 4 @ 2.6 GHZ    | 24          | 50                 | 150                         | 200                   | EMC VMAX, Cisco, VMware                                 | Tsuen Wan | Linux   |
| Collector_2        | 4 @ 2.6 GHZ    | 24          | 50                 | 150                         | 200                   | EMC VMAX, EMC VNX Block                                 | Tsuen Wan | Linux   |
| Collector_3        | 4 @ 2.6 GHZ    | 24          | 50                 | 150                         | 200                   | EMC VMAX, Cisco, Physical Host                          | Tsuen Wan | Linux   |
| Collector_4        | 4 @ 2.6 GHZ    | 24          | 50                 | 150                         | 200                   | EMC VMAX, EMC VNX File                                  | Tsuen Wan | Linux   |
| Collector_5        | 2 @ 2.6 GHZ    | 8           | 50                 | 70                          | 120                   | EMC_Centera                                             | Tsuen Wan | Windows |
| Collector_1        | 4 @2.6 GHZ     | 24          | 50                 | 150                         | 200                   | EMC VMAX, Cisco, VMware                                 | Chai Wan  | Linux   |
| Collector_2        | 4 @2.6 GHZ     | 24          | 50                 | 150                         | 200                   | EMC VMAX, EMC VNX Block                                 | Chai Wan  | Linux   |
| Collector_3        | 4 @2.6 GHZ     | 24          | 50                 | 150                         | 200                   | EMC VMAX, Cisco, Physical Host                          | Chai Wan  | Linux   |
| Collector_4        | 4 @2.6 GHZ     | 24          | 50                 | 150                         | 200                   | EMC VNX File, Physical Host                             | Chai Wan  | Linux   |
| Collector_5        | 2 @2.6 GHZ     | 16          | 50                 | 70                          | 120                   | EMC_Centera                                             | Chai Wan  | Windows |
| Collector_6        | 2 @2.6 GHZ     | 16          | 50                 | 70                          | 120                   | EMC_Centera                                             | Chai Wan  | Windows |
| Collector_1        | 4 @2.6 GHZ     | 16          | 50                 | 150                         | 200                   | EMC VMAX, VMware                                        | Japan     | Linux   |
| Collector_2        | 4 @2.6 GHZ     | 16          | 50                 | 150                         | 200                   | EMC VNX File, Cisco, Physical Host                      | Japan     | Linux   |
| Collector_3        | 2 @2.6 GHZ     | 8           | 50                 | 70                          | 120                   | EMC_Centera                                             | Japan     | Windows |

## EMC SRM Infrastructure Requirements (2 of 2)

| VM Purpose  | Number of vCPU | Memory (GB) | OS Disk Space (GB) | Application Disk Space (GB) | Total Disk Space (GB) | Contains                             | Location      | OS      |
|-------------|----------------|-------------|--------------------|-----------------------------|-----------------------|--------------------------------------|---------------|---------|
| Collector_1 | 4 @2.6 GHz     | 16          | 50                 | 150                         | 200                   | EMC VMAX, EMC VNX Block, Cisco       | Shanghai      | Linux   |
| Collector_2 | 4 @2.6 GHz     | 16          | 50                 | 150                         | 200                   | EMC VMAX, EMC VNX File               | Shanghai      | Linux   |
| Collector_3 | 2 @2.6 GHz     | 8           | 50                 | 70                          | 120                   | EMC_Centera                          | Shanghai      | Windows |
| Collector_1 | 4@2.6 GHz      | 24          | 50                 | 150                         | 200                   | EMC VMAX, Cisco                      | Korea         | Linux   |
| Collector_2 | 4@2.6 GHz      | 16          | 50                 | 150                         | 200                   | EMC VNX File, Physical Host          | Korea         | Linux   |
| Collector_3 | 4@2.6 GHz      | 16          | 50                 | 150                         | 200                   | EMC VNX Block, Physical Host         | Korea         | Linux   |
| Collector_4 | 2 @2.6 GHz     | 8           | 50                 | 70                          | 120                   | EMC_Centera                          | Korea         | Windows |
| Collector_1 | 4@2.6 GHz      | 16          | 50                 | 150                         | 200                   | EMC VMAX, EMC VNX Block              | Mumbai        | Linux   |
| Collector_2 | 4@2.6 GHz      | 16          | 50                 | 150                         | 200                   | EMC VNX File, Cisco                  | Mumbai        | Linux   |
| Collector_1 | 4@2.6 GHz      | 16          | 50                 | 150                         | 200                   | EMC VMAX, Cisco                      | Mumbai (BKC)  | Linux   |
| Collector_2 | 2 @2.6 GHz     | 8           | 50                 | 70                          | 120                   | EMC_Centera                          | Mumbai (BKC)  | Windows |
| Collector_1 | 4@2.6 GHz      | 16          | 50                 | 150                         | 200                   | EMC VMAX, Cisco                      | Sydney (Park) | Linux   |
| Collector_2 | 4@2.6 GHz      | 16          | 50                 | 150                         | 200                   | EMC VNX Block, Physical Host, VMware | Sydney (Park) | Linux   |
| Collector_1 | 4@2.6 GHz      | 16          | 50                 | 150                         | 200                   | EMC VMAX, Cisco                      | Sydney (WPH)  | Linux   |
| Collector_2 | 4@2.6 GHz      | 16          | 50                 | 150                         | 200                   | EMC VNX Block, Physical Host, VMware | Sydney (WPH)  | Linux   |
| Collector_1 | 4@2.6 GHz      | 16          | 50                 | 150                         | 200                   | EMC VMAX, EMC VNX Block, Cisco       | Tamil Nadu    | Linux   |
| Collector_2 | 2 @2.6 GHz     | 8           | 50                 | 70                          | 120                   | EMC_Centera                          | Tamil Nadu    | Windows |
| Collector_1 | 4@2.6 GHz      | 16          | 50                 | 150                         | 200                   | EMC VMAX, EMC VNX Block, Cisco       | Kao Hsiung    | Linux   |
| Collector_1 | 4@2.6 GHz      | 16          | 50                 | 150                         | 200                   | EMC VMAX, Cisco                      | Ming Chuang   | Linux   |
| Collector_1 | 4@2.6 GHz      | 16          | 50                 | 150                         | 200                   | EMC VMAX, Cisco                      | Taipei        | Linux   |
| Collector_2 | 4@2.6 GHz      | 16          | 50                 | 150                         | 200                   | EMC VNX Block, EMC VNX File          | Taipei        | Linux   |

## EMC SRM Network Latency Requirements

| Components                                                          | Maximum Network Latency |
|---------------------------------------------------------------------|-------------------------|
| Between Frontend and Backend                                        | 5 ms                    |
| Between Backend and Collector                                       | 300 ms                  |
| Between VMAX Collector host and Solutions Enabler or Unisphere host | 20 ms <sup>2</sup>      |
| Between VNX Collector host and VNX provider host                    | 20 ms (2)               |
| Between RSA (Host) Collector and Host                               | 20 ms (2)               |
| Between VMware Collector and VCenter                                | 20 ms (2)               |
| Between SNMP collector and Brocade Switch                           | 100 ms                  |

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<sup>2</sup> If latency between the provider and the collector is more than 20 ms, consider increasing the polling interval or decreasing the number of configuration items per collector.

## SRM Firewall Ports

| Source                | Protocol | Ports                      | Direction             | Target                                      | Notes                   |
|-----------------------|----------|----------------------------|-----------------------|---------------------------------------------|-------------------------|
| *                     | TCP      | 58080                      | <--Bi-Directional --> | UI Portal Host                              | App access via Web      |
| UI Portal Host        | TCP      | 389                        | <--Bi-Directional --> | LDAP Host                                   | LDAP Authentication     |
| All Collector Hosts   | TCP      | 2020                       | Out -->               | Backend 1-Primary Database Host             | Load Balancer           |
| All Collector Hosts   | TCP      | 2001                       | <--Bi-Directional --> | Both Backend-Database Hosts                 | Control Interface       |
| All Collector Hosts   | TCP      | 2010                       | Out -->               | Backend 1-Primary Database Host             | Alerting                |
| VNX Collector Hosts   | TCP/UDP  | 2040                       | Out -->               | Backend 1-Primary Database Host             | VNX Alert Consolidation |
| All Collector Hosts   | TCP      | 48443                      | <--Bi-Directional --> | Backend 1-Primary Database Host             | TMS Service             |
| All Collector Hosts   | TCP      | 52001                      | <-- In                | UI Portal Host, Both Backend-Database Hosts | Event Processing        |
| All Collector Hosts   | TCP      | 52004                      | Out -->               | Backend 1-Primary Database Host             | Event Processing        |
| Generic RSC Collector | TCP      | 5985/5986                  | <--Bi-Directional --> | Windows Host to be discovered               | WS-MAN                  |
| Generic RSC Collector | TCP      | 22                         | <--Bi-Directional --> | UNIX Host to be discovered                  | ssh                     |
| Vmware Collector      | TCP      | 443                        | <--Bi-Directional --> | vCenter Host to be discovered               | https                   |
| Cisco Collector       | UDP      | 161                        | <--Bi-Directional --> | Cisco switches to be discovered             | SNMP                    |
| VNX File Collector    | TCP      | 80/443                     | <--Bi-Directional --> | VNX Control Stations                        | http/https              |
| VNX Block Collector   | TCP      | 22                         | <--Bi-Directional --> | VNX SPA/SPB                                 | ssh                     |
| VMAX Collector        | TCP      | 2707                       | <--Bi-Directional --> | Remote SYMAPI Servers                       | Remote SYMAPI Calls     |
| Centera Collector     | TCP      | 3218/3682/7069/8069        | <--Bi-Directional --> | Centera Nodes                               | SDK/Centera API Calls   |
| NetApp Collector      | TCP      | 22                         | <--Bi-Directional --> | NetApp Node                                 | ssh                     |
| HDS Collector         | TCP      | 5988/5989                  | <--Bi-Directional --> | HDS Array Host                              | SMI-S                   |
| HDS Collector         | TCP      | 1099/51099/2000/2001/51100 | <--Bi-Directional --> | HDS Array Host                              | Text Collector          |
| IBM XIV Collector     | TCP      | 5988/5989                  | <--Bi-Directional --> | IBM CIM Agent Host                          | IBM CIM                 |

## EMC Storage Prerequisites

|                                 |                                                                                                                         |  |  |  |  |  |  |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|
| <b>EMC VMAX SolutionPack</b>    |                                                                                                                         |  |  |  |  |  |  |
| <b>Support List:</b>            | DMX-3, DMX-4, DMX-4 950, VMAX, VMAX SE series                                                                           |  |  |  |  |  |  |
| <b>Requirements:</b>            | Solutions Enabler 7.6.2.8 or higher                                                                                     |  |  |  |  |  |  |
|                                 | Unisphere for VMAX 1.6.2 or higher (Unisphere for VMAX must be setup to collect performance data)                       |  |  |  |  |  |  |
|                                 | SMI-S Provider 4.6.2 for LUN Performance Metrics                                                                        |  |  |  |  |  |  |
|                                 | Symmetrix communications occur via GateKeepers. The two options available are outlined below)                           |  |  |  |  |  |  |
|                                 | (Remote Mode - Option 1) - Assign 2 additional gatekeepers to existing SYMAPI server.                                   |  |  |  |  |  |  |
|                                 | SRM will utilize the existing SYMAPI Server to communicate with the Symmetrix Devices via SYMCLI.                       |  |  |  |  |  |  |
|                                 | No additional software will need to be installed on the SYMAPI server.                                                  |  |  |  |  |  |  |
|                                 | In the event that the SYMAPI Server uses a "nethost" file, ensure the collector hostname or IP Address                  |  |  |  |  |  |  |
|                                 | is in it. For example, "vm-2981-564 *"                                                                                  |  |  |  |  |  |  |
|                                 | (Local Mode - Option 2) - Assign 2 additional gatekeepers to existing SYMAPI server.                                    |  |  |  |  |  |  |
|                                 | Install the VMAX Collector on the SYMAPI server. A unique server can also be used if desired.                           |  |  |  |  |  |  |
|                                 | If using ACL's - SRM will run the SYMCLI commands under a user called "apg".                                            |  |  |  |  |  |  |
|                                 | The "apg" user requires permissions to access the storapid daemon in the daemon_users file.                             |  |  |  |  |  |  |
| <b>Info Needed:</b>             | Array Serial Number, IP Address for Unisphere for VMAX Server, Unisphere Credentials, SYMCLI Credentials if using ACL's |  |  |  |  |  |  |
| <b>EMC VNX SolutionPack</b>     |                                                                                                                         |  |  |  |  |  |  |
| <b>Support List:</b>            | Flare Code 4.30; 5.31 or higher                                                                                         |  |  |  |  |  |  |
|                                 | Used with CLARiiON, VNX1 and VNX2 Models                                                                                |  |  |  |  |  |  |
|                                 | VNXe OE 3.0 (Block and File)                                                                                            |  |  |  |  |  |  |
|                                 | Used with second generation VNXe modules as of VNXe3200                                                                 |  |  |  |  |  |  |
|                                 | First generation VNXe models such as VNXe3100, VNXe3150 and VNXe3300 are not supported.                                 |  |  |  |  |  |  |
|                                 | DART 5.6 and 6.0; VNX OE for File 7.0 or later                                                                          |  |  |  |  |  |  |
|                                 | Used with Celerra, VNX1 and VNX2 models                                                                                 |  |  |  |  |  |  |
| <b>Requirements:</b>            | Naviseccli (The version should match the Flare code level.)                                                             |  |  |  |  |  |  |
|                                 | Performance Statistics need to be enabled on SPA & SPB                                                                  |  |  |  |  |  |  |
|                                 | User Account (service account) with read only privileges (Block & File Accounts)                                        |  |  |  |  |  |  |
| <b>Info Needed:</b>             | Array Serial Numbers, IP Addresses SPA, SPB, Control Station(s), Credentials                                            |  |  |  |  |  |  |
| <b>EMC Centera SolutionPack</b> |                                                                                                                         |  |  |  |  |  |  |
| <b>Support List:</b>            |                                                                                                                         |  |  |  |  |  |  |
| <b>Requirements:</b>            | Collector must be installed on Windows 2008, 2008R2                                                                     |  |  |  |  |  |  |
|                                 | Centera 4.3 must be installed on collector server                                                                       |  |  |  |  |  |  |
|                                 | User Account (Service Account) with monitor role privileges                                                             |  |  |  |  |  |  |
| <b>Info Needed:</b>             | Hostname or IP Address of Management Node, Credentials                                                                  |  |  |  |  |  |  |
| <b>EMC XtremIO SolutionPack</b> |                                                                                                                         |  |  |  |  |  |  |
| <b>Support List:</b>            | XtremIO 2.4 and later                                                                                                   |  |  |  |  |  |  |
| <b>Info Needed:</b>             | Unique friendly name for XIO array                                                                                      |  |  |  |  |  |  |
|                                 | Management IP Address or hostname                                                                                       |  |  |  |  |  |  |
|                                 | Username (Read-only account) and Password                                                                               |  |  |  |  |  |  |

## Third Party Storage Prerequisites

|                                  |                                                                                                                     |  |  |  |  |  |  |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|
| <b>IBM XIV SolutionPack</b>      |                                                                                                                     |  |  |  |  |  |  |
| <b>Support List:</b>             | IBM XIV                                                                                                             |  |  |  |  |  |  |
| <b>Requirements:</b>             | The XIV CIM Agent must be available (In v10.1.0 and higher, it is preinstalled & enabled on the admin module)       |  |  |  |  |  |  |
|                                  | User Account (Service Account).                                                                                     |  |  |  |  |  |  |
| <b>Info Needed:</b>              | (3) Management IP Addresses, Credentials                                                                            |  |  |  |  |  |  |
|                                  |                                                                                                                     |  |  |  |  |  |  |
| <b>Hitachi SolutionPack</b>      |                                                                                                                     |  |  |  |  |  |  |
| <b>Support List:</b>             | AMS200, AMS2100, USP and USP-V, HUS and VSP                                                                         |  |  |  |  |  |  |
| <b>Requirements:</b>             | Hitachi Command Suite 7.4.1 or higher (Full license; core license is not adequate.)                                 |  |  |  |  |  |  |
|                                  | CIM/WBEM features must be enabled in Hitachi Device Manager                                                         |  |  |  |  |  |  |
|                                  | User Account with admin privileges on the Hitachi Device Manager system                                             |  |  |  |  |  |  |
| <b>Info Needed:</b>              | Array name or IP Address for the Hitachi Device Manager, Credentials                                                |  |  |  |  |  |  |
|                                  |                                                                                                                     |  |  |  |  |  |  |
| <b>NetApp Filer SolutionPack</b> |                                                                                                                     |  |  |  |  |  |  |
| <b>Support List:</b>             | NetApp Filer 7-Mode on Ontap v7 or higher                                                                           |  |  |  |  |  |  |
|                                  | NetApp Filer Cluster-Mode on Ontap v8 or higher                                                                     |  |  |  |  |  |  |
|                                  | Note: The cluster management IP must be provided during C-Mode Filer discovery                                      |  |  |  |  |  |  |
| <b>Requirements:</b>             | SRM utilizes NetApp CLI via SSH to communicate to NetApp arrays. SSH v2 must be enabled                             |  |  |  |  |  |  |
|                                  | SSH connection to the NetApp devices with the following role : login-ssh, cli-stats*, cli-snap*, cli-aggr*          |  |  |  |  |  |  |
|                                  | cli-vol*, cli-disk*, cli-environment, cli-nfs*, cli-cifs* , cli-df, cli-sysconfig, cli-ifconfig, cli-version        |  |  |  |  |  |  |
|                                  | C-Mode requires admin privilege for user to run commands of type 'run -node *' and 'statistics samples delete W4N*' |  |  |  |  |  |  |
|                                  | A full list of the CLI Commands can be provided as needed for proper user account access creation                   |  |  |  |  |  |  |
|                                  | Polling must be done to the real NetApp Filer (not a vFiler)                                                        |  |  |  |  |  |  |
| <b>Info Needed:</b>              | NetApp filer Mode, Hostname, IP Address, Credentials                                                                |  |  |  |  |  |  |

## Cisco FC Switch Prerequisites

|                                            |                                                                                               |  |  |  |  |  |
|--------------------------------------------|-----------------------------------------------------------------------------------------------|--|--|--|--|--|
| <b>Cisco MDS/Nexus Switch SolutionPack</b> |                                                                                               |  |  |  |  |  |
| <b>Support List:</b>                       | Cisco MDS (9xxx)                                                                              |  |  |  |  |  |
|                                            | Cisco ONS (1520x)                                                                             |  |  |  |  |  |
|                                            | Cisco Nexus (5548, 1000V)                                                                     |  |  |  |  |  |
| <b>Requirements:</b>                       | Supported MIBS:                                                                               |  |  |  |  |  |
|                                            | CISCO-FLASH-MIB                                                                               |  |  |  |  |  |
|                                            | CISCO-NS-MIB                                                                                  |  |  |  |  |  |
|                                            | CISCO-DM-MIB                                                                                  |  |  |  |  |  |
|                                            | CISCO-ENTITY-SENSOR-MIB                                                                       |  |  |  |  |  |
|                                            | ENTITY-MIB                                                                                    |  |  |  |  |  |
|                                            | CISCO-FC-FE-MIB                                                                               |  |  |  |  |  |
|                                            | IF-MIB                                                                                        |  |  |  |  |  |
|                                            | CISCO-ENTITY-FRU-CONTROL-MIB                                                                  |  |  |  |  |  |
|                                            | CISCO-VSAN-MIB                                                                                |  |  |  |  |  |
|                                            | CISCO-ZS-MIB                                                                                  |  |  |  |  |  |
|                                            | CISCO-SYSTEM-EXT-MIB                                                                          |  |  |  |  |  |
|                                            | SNMPv2-MIB                                                                                    |  |  |  |  |  |
|                                            | CISCO-FCS-MIB                                                                                 |  |  |  |  |  |
|                                            | CISCO-FEATURE-CONTROL-MIB                                                                     |  |  |  |  |  |
|                                            | SNMP must be enabled/configured. SRM Supports v1 ,v2C and v3 (SHA auth & AES128 privacy only) |  |  |  |  |  |

## Host Prerequisites

|                                    |                                                                                                     |  |  |  |  |  |
|------------------------------------|-----------------------------------------------------------------------------------------------------|--|--|--|--|--|
| <b>VMware vCenter SolutionPack</b> |                                                                                                     |  |  |  |  |  |
| <b>Support List:</b>               | VMware vCenter Server 4.1 or higher                                                                 |  |  |  |  |  |
|                                    | Vmware ESX 4.1, 5.0, 5.1                                                                            |  |  |  |  |  |
| <b>Requirements:</b>               | vCenter User Account - Read Only Account with Browse Datastore and all Storage View privileges      |  |  |  |  |  |
|                                    | If PowerPath / VE is running and metrics are desired, PP /VE 5.8 or later is required               |  |  |  |  |  |
| <b>Info Needed:</b>                | vCenter Hostname or IP Address, Credentials                                                         |  |  |  |  |  |
|                                    |                                                                                                     |  |  |  |  |  |
| <b>EMC Physical Hosts</b>          |                                                                                                     |  |  |  |  |  |
| <b>Support List:</b>               | HPUX 11iv1 11.11, HPUX11iv2 11.23, HPUXiv3 11.31                                                    |  |  |  |  |  |
|                                    | IBM AIX 5.1, 5.2, 5.3, 6.1, 7.1                                                                     |  |  |  |  |  |
|                                    | Linux RHEL AS/ES 4.x, 5.x, 6.x                                                                      |  |  |  |  |  |
|                                    | Linux SUSE es9, ES9.3, ES10, ES11                                                                   |  |  |  |  |  |
|                                    | Solaris 9, 10, 11, SVM, VxVM, zfs                                                                   |  |  |  |  |  |
|                                    | Microsoft Windows 2003, 2003 R2 SP2, 2003 SP2                                                       |  |  |  |  |  |
|                                    | Microsoft Windows 2008 Core, 2008 SP1, 2008 SP2, 2008 R2                                            |  |  |  |  |  |
|                                    | Microsoft Windows 2012                                                                              |  |  |  |  |  |
|                                    | Standard, Enterprise and Datacenter editions                                                        |  |  |  |  |  |
| <b>Requirements:</b>               | Host Prerequisites: (PowerPath is only needed if PowerPath metrics are desired)                     |  |  |  |  |  |
|                                    | HPUX - PowerPath 5.2, INQ 7.6.1 or higher, perl interpreter 5.6.1 or higher                         |  |  |  |  |  |
|                                    | IBM AIX - PowerPath 5.7b194, INQ 7.6.1 or higher, perl interpreter 5.6.1 or higher                  |  |  |  |  |  |
|                                    | RHEL & SUSE Linux - PowerPath 5.7, INQ 7.6.1.0 or higher, perl interpreter 5.6.1 or higher          |  |  |  |  |  |
|                                    | Solaris - PowerPath 5.5 P02 HF02, INQ 7.6.1.0 or higher, perl interpreter 5.6.1 or higher           |  |  |  |  |  |
|                                    | Windows - PowerPath 5.7, Powershell 2.0, INQ 7.6.1.0 (Optional)                                     |  |  |  |  |  |
|                                    | Linux / Unix host connections will utilize SSH. A user account with sudo access is required         |  |  |  |  |  |
|                                    | Sudo user needs root privileges to run the following commands: inq, powermt, sar, mpstat, vgdisplay |  |  |  |  |  |
|                                    | vxdisk (Solaris)                                                                                    |  |  |  |  |  |
|                                    | dmidecode, vgs, lvdisplay (Linux)                                                                   |  |  |  |  |  |
|                                    | Windows hosts connections will utilize WinRM & PowerShell. PowerShell 2.0 or higher is required     |  |  |  |  |  |
|                                    | WinRM Execution Policy should be set to unrestricted :set-executionpolicy unrestricted              |  |  |  |  |  |
| <b>Info Needed:</b>                | HostName or IP Address, OS Version, Credentials                                                     |  |  |  |  |  |

## Application Prerequisites

[illegible]