

## TYRONE SERVER MANAGEMENT

# Tyrone®

 **ProServe**  
Formerly known as TSM

### **TYRONE ProServe (FULL-FEATURED SERVER MANAGEMENT SOLUTION)**

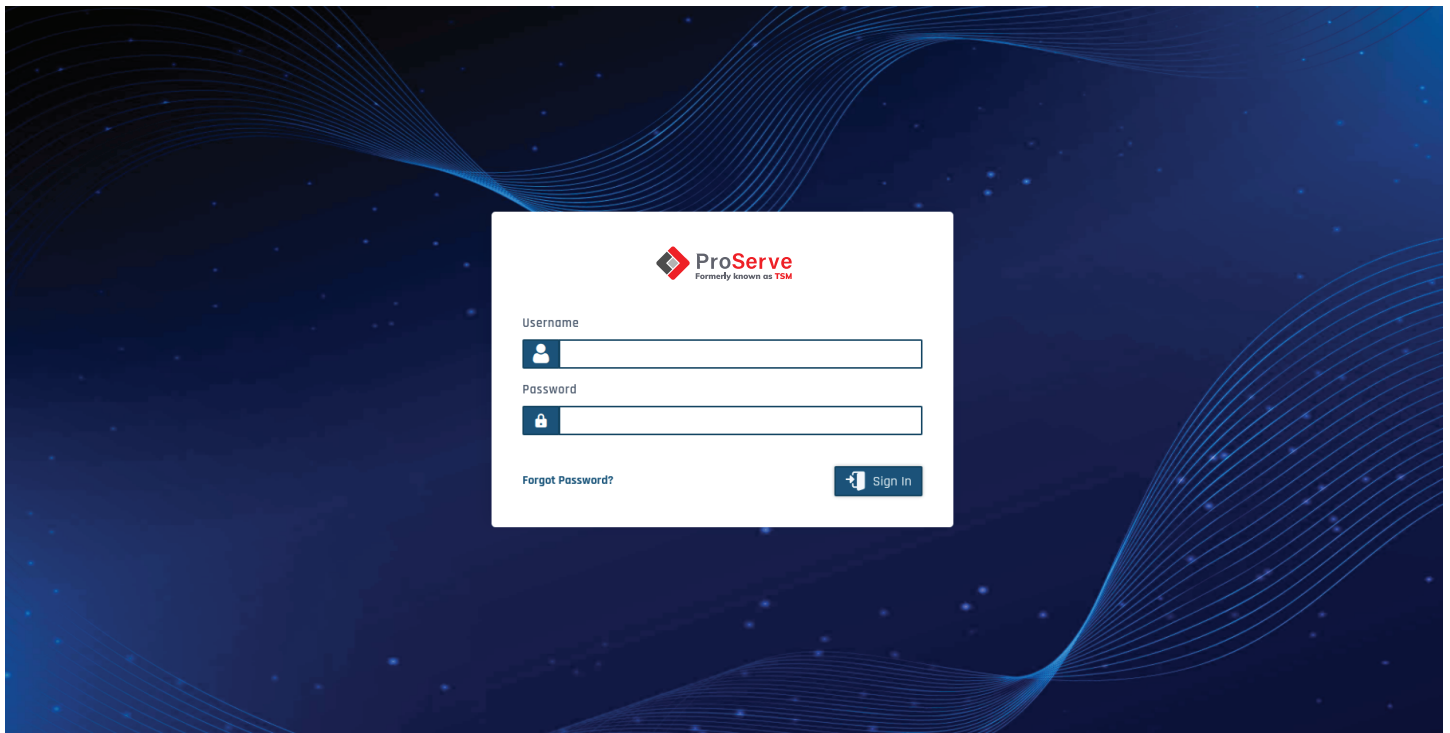
**Tyrone ProServe** is a suite of scalable and secure systems management solution. It allows IT managers to get remote access of Servers with BMC implementing IPMI and Agent based Management Applications. It allows users to monitor server system's health and to manage critical events of remote systems via GUI, CLI and API's

Key features of **Tyrone ProServe** includes

- IPMI 2.0 Support
- Redfish Support
- GUI, CLI, API's to control IPMI functions
- iKVM (Keyboard, Video, and Mouse)
- Virtual Media Redirection
- 3rd Party Authentication
- BIOS & Firmware update, OS Deployment
- System Management Architecture for Server Management (SMASH) Support

The high level architecture includes:

- Tyrone ProServe management
- Management console
- Network Connectivity LAN/WAN
- BMC Interface via IPMI/LAN Port



Tyrone ProServe detailed Specifications and Features:

## 1. Discovery and Group Management

Automatically discover provisioned servers within the IP range via out-of-band (agent free/IPMI) and in-band (agent managed) connections. IT managers can then group the discovered servers based on profile.

Host Discovery Wizard [ Step 1 out of 3 ]

Username \* Password \*

Discovery Type \* **IP RANGE** NETWORK RANGE

Start IP \* End IP \*

Format: 0.0.0.0 Format: 0.0.0.0

**Begin Discovery**

Host Discovery Wizard [ Step 1 out of 3 ]

Username \* Password \*

Discovery Type \* IP RANGE **NETWORK RANGE**

Network\* \*

Format: 0.0.0.0/0

**Begin Discovery**

- Supports configuration of systems at DC and DR in High Availability model

**Authentication** High Availability Configure NTP Configure Email Configure SNMP Manage Alerts Manage Tags RBAC Manage Template

### Authentication

Configure Authentication Source

Authentication Source \* **LOCAL** **LDAP** AAA

FQDN Server \* DNS Server \*

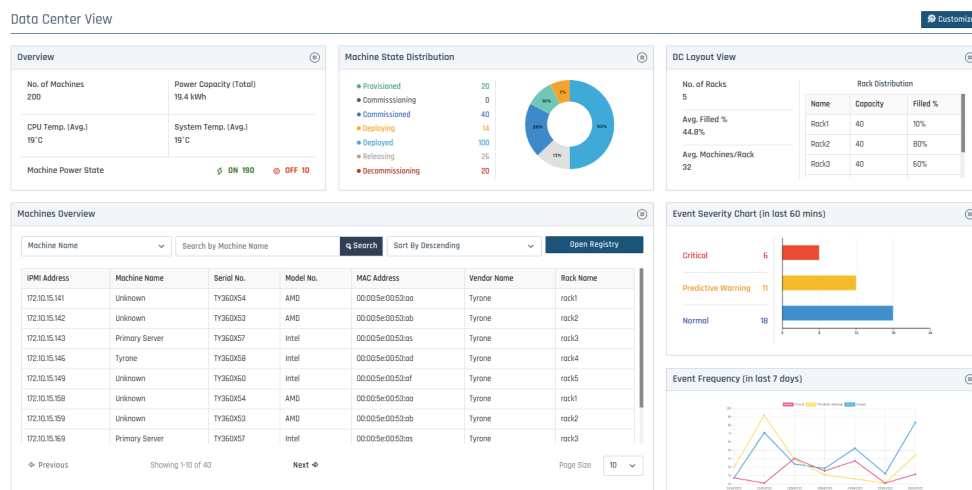
Format: <hostname>.<second-level-domain>.<top-level-domain> Format: 0.0.0.0

Username \* Password \*

Type your username Type your password

**Configure**

- Remote accessibility to multiple servers simultaneously for management (scalable to manage upto six thousands servers)



## Asset Tracking and Management

Tracking of hardware assets and firmware versions of all managed servers via out-of-band (agent free/IPMI) and in-band (agent managed) connections

- Asset Tagging based on user assign attributes
- Self Service portal for comissioning /decommissioning, provisioning / deprovisioning capabilities

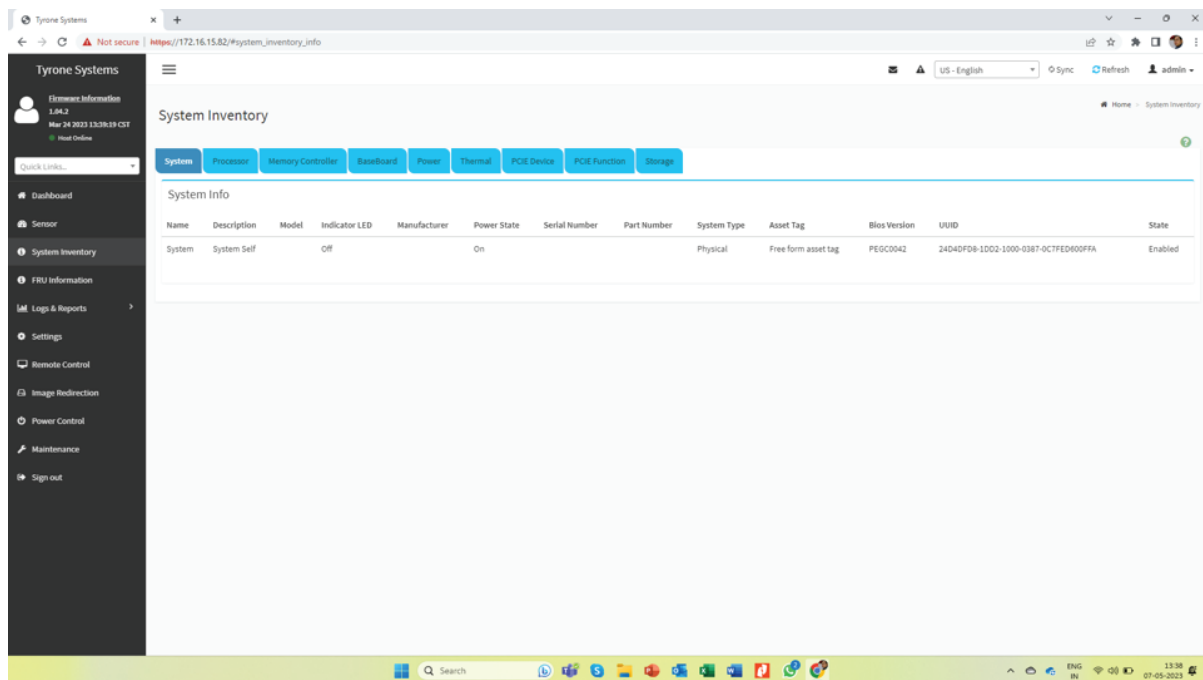
The screenshot shows the ProServe Settings page. The left sidebar contains navigation links: Dashboard, Host Discovery, Assets Management, Analytics, Logs, and Settings. The main content area is titled 'Settings' and has a sub-header 'Manage Tags'. Below this, there are tabs for Authentication, High Availability, Configure NTP, Configure Email, Configure SNMP, Manage Alerts, Manage Tags (selected), RBAC, and Manage Template. The 'Manage Tags' section is divided into two panels. The left panel, 'Create Tag', has input fields for 'Tag Name' and 'Color', and a 'Create Tag' button. The right panel, 'Tags List', shows a table with columns 'Tag Name' and 'Assigned Machine'. The table lists three tags: 'Primary' (assigned to 30), 'Secondary' (assigned to 30), and 'Warning' (assigned to 30). A 'Delete tags' button is in the top right corner of the table.

- Graphical overview of host's resources

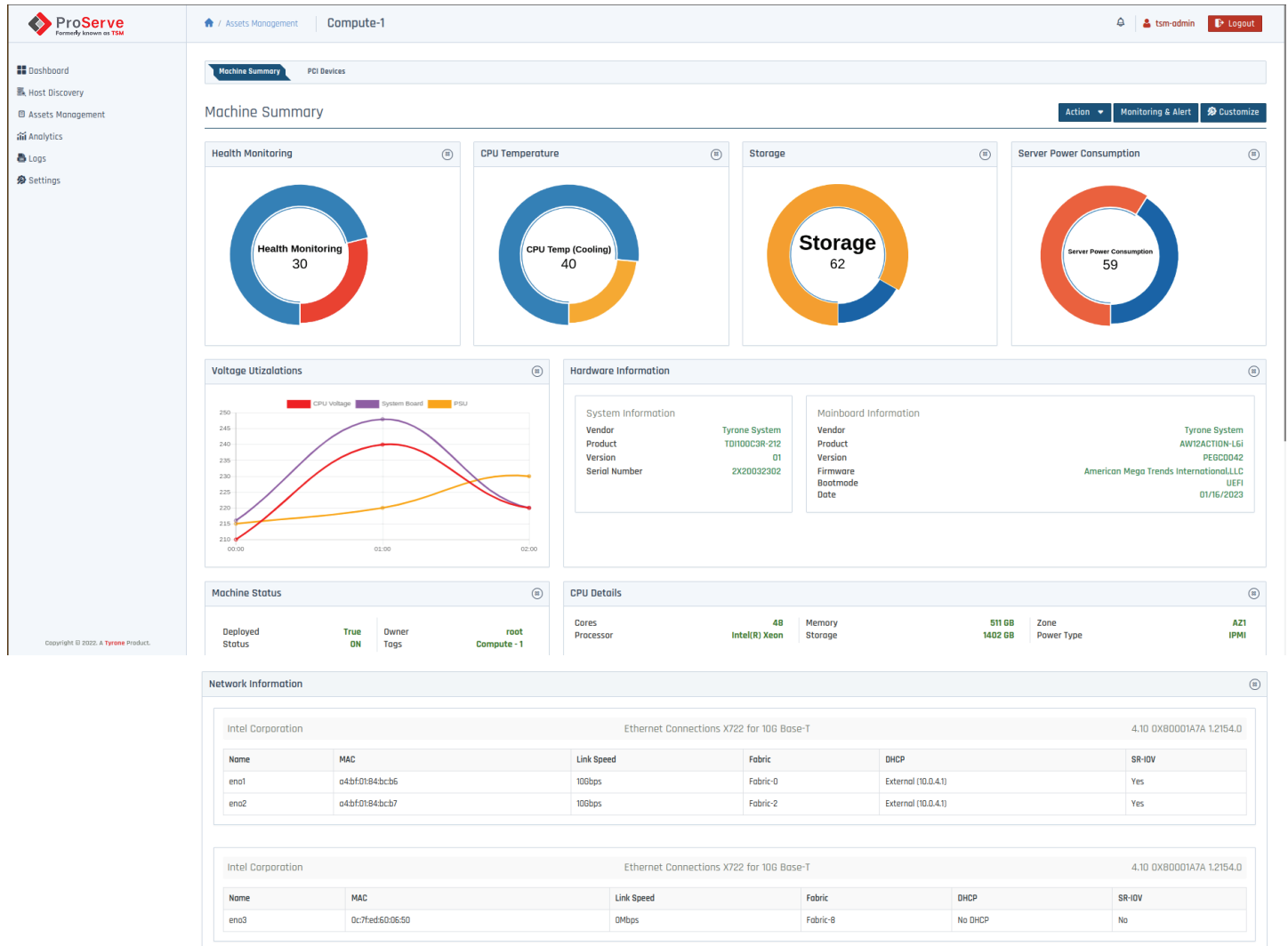
The screenshot shows the ProServe Assets Management page for 'Compute-1'. The left sidebar is the same as the previous screenshot. The main content area is titled 'Assets Management' and has a sub-header 'Compute-1'. Below this, there are tabs for Machine Summary (selected) and PCI Devices. The 'Machine Summary' section has a sub-header 'Machine Summary' and a 'Monitoring & Alert' button. Below this, there are four circular gauges: 'Health Monitoring' (30), 'CPU Temp (Cooling)' (40), 'Storage' (62), and 'Server Power Consumption' (59). Below the gauges, there are two panels: 'Voltage Utilizations' and 'Hardware Information'. The 'Voltage Utilizations' panel shows a line graph for CPU Voltage, System Board, and PSU. The 'Hardware Information' panel shows system and mainboard details. At the bottom, there are two panels: 'Machine Status' and 'CPU Details'. The 'Machine Status' panel shows 'Deployed Status' as 'True ON' and 'Owner Tags' as 'root Compute - 1'. The 'CPU Details' panel shows 'Cores Processor' as '48 Intel(R) Xeon', 'Memory Storage' as '511 GB 1402 GB', and 'Zone Power Type' as 'AZ1 IPMI'.



- Inventory details of host system like Processors, Memory, Storage, Networking, and other components



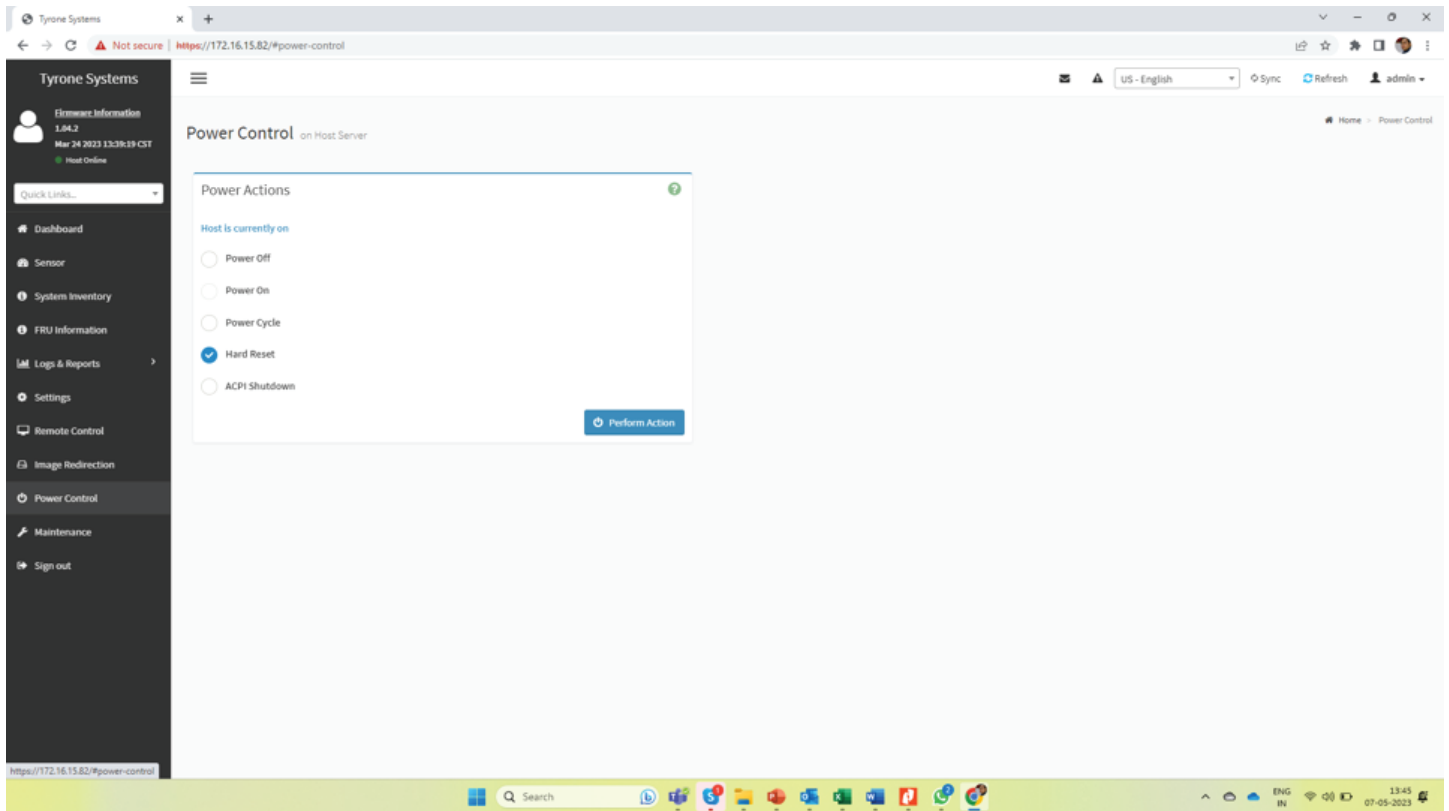
- View System information (firmware versions, server health, diagnostic information, Power statistics etc.)



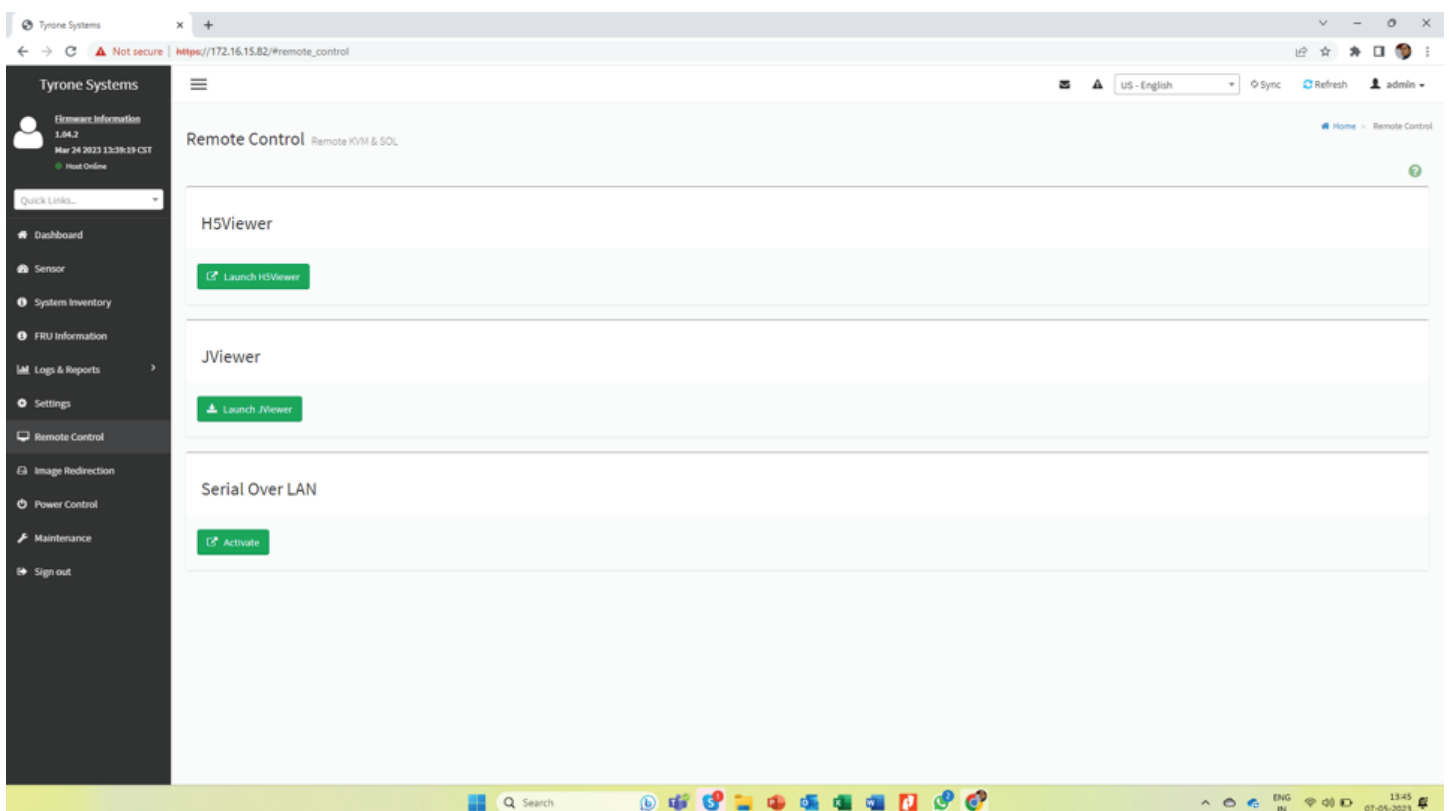
## 2. Remote Management, Configuration, Provisioning

Remote Management of multiple servers simultaneously for management tasks such as BIOS / firmware / driver update, scheduling, configuration and provisioning etc.

- Power Management (Power ON/Power Off)



- Remotely connection via the iKVM



- Out-of-band BIOS/BMC/Firmware Update
- Life cycle management thru single unified platform and with capabilities of discovery, commissioning, deploying and retiring Servers
- Patch management for drivers, softwares update
- Provisioning with OS image (Ubuntu, CentOS, Windows, RHEL etc.) for profile creation and deployment with the press of a button
- Cloning of Servers based on common Hardware Prole based deployment (simultaneous on multiple systems) and Batch processing using user defined scripts based on Admin policies for updates and deployment and provide user specific templates to carry out simultaneous operations
- Batch processing of using user defined scripts based on Admin policies for updates and deployment
- Provisioning of Power Policies, Prole import/export

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Assets Management

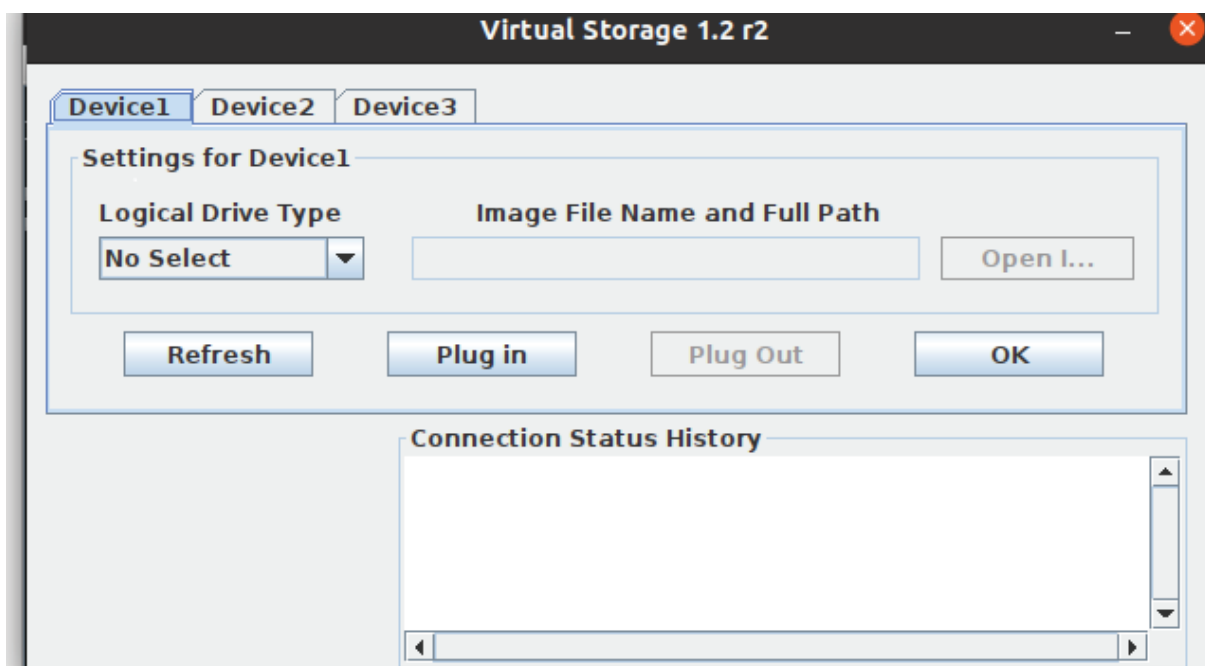
Assets Management

Machine Name Search by Machine Name Search Sort By Descending Action

	IPMI Address	Machine Name	Serial No.	Model No.	MAC Address	Vendor Name	Rack Name	Tags	Power State	Machine State
<input type="checkbox"/>	172.10.15.141	Compute-1	TY36DX54	AMD	00:00:5e:00:53:a0	Tyrone	rack1	14	ON	Commissioned
<input type="checkbox"/>	172.10.15.142	Unknown	TY36DX53	AMD	00:00:5e:00:53:ab	Tyrone	rack2	14	OFF	Deploying
<input type="checkbox"/>	172.10.15.143	Primary Server	TY36DX57	Intel	00:00:5e:00:53:as	Tyrone	rack3	14	ON	Deployed
<input type="checkbox"/>	172.10.15.146	Tyrone	TY36DX58	Intel	00:00:5e:00:53:ad	Tyrone	rack4	14	ON	Deployed
<input type="checkbox"/>	172.10.15.149	Unknown	TY36DX60	Intel	00:00:5e:00:53:af	Tyrone	rack5	14	ON	Deployed
<input type="checkbox"/>	172.10.15.158	Unknown	TY36DX54	AMD	00:00:5e:00:53:a0	Tyrone	rack1	14	ON	Deployed
<input type="checkbox"/>	172.10.15.159	Unknown	TY36DX53	AMD	00:00:5e:00:53:ab	Tyrone	rack2	14	OFF	Commissioned
<input type="checkbox"/>	172.10.15.169	Primary Server	TY36DX57	Intel	00:00:5e:00:53:as	Tyrone	rack3	14	ON	Releasing
<input type="checkbox"/>	172.10.15.178	Unknown	TY36DX58	Intel	00:00:5e:00:53:ad	Tyrone	rack4	14	ON	Commissioned
<input type="checkbox"/>	172.10.15.165	Tyrone	TY36DX60	Intel	00:00:5e:00:53:af	Tyrone	rack5	14	ON	Commissioned

Previous Showing 1-10 of 40 Next Page Size 10

- Image redirection



- Configurations can be saved as template and can be reused.

The screenshot displays the ProServe Settings interface, specifically the Role Base Access Control (RBAC) section. The left sidebar contains navigation links: Dashboard, Host Discovery, Assets Management, Analytics, Logs, and Settings. The main content area is titled 'Settings' and includes a sub-header 'Role Base Access Control'. Below this, there are four panels:

- Create Role:** A form to create a new role. It includes a 'Name' field, a 'Select Permissions' dropdown (showing options like Host Discovery, Commission Machine, Decommission, etc.), and an 'Add Role' button.
- Role List:** A table listing existing roles. It includes a search bar, a 'Sort By Descending' dropdown, and a 'Delete Role' button. The table has columns for Role, Assigned Users, Assigned Machine, Permissions Granted, and Actions.
- Assign Role:** A form to assign a role to a user. It includes 'Select User' and 'Select Role' dropdowns, 'Select Machine' and 'Select Tag' dropdowns, and an 'Add Role' button.
- User Assignment List:** A table listing users assigned to roles. It includes a search bar, a 'Sort By Descending' dropdown, and a 'Remove Assignment' button. The table has columns for Username, Role, Assigned Machine, Assigned Tags, and Actions.

- IP address management with DHCP and DNS for Configuration and Management of Network

The screenshot displays the Tyrone Systems Network Settings page. The left sidebar contains navigation links: Dashboard, Sensor, System Inventory, FRU Information, Logs & Reports, Settings, Remote Control, Image Redirection, Power Control, Maintenance, and Sign out. The main content area is titled 'Network Settings' and includes a sub-header 'Network Settings'. Below this, there are five panels:

- Network IP Settings:** A panel for configuring network IP settings.
- Network Bond Configuration:** A panel for configuring network bond settings.
- Network Link Configuration:** A panel for configuring network link settings.
- DNS Configuration:** A panel for configuring DNS settings.
- Sideband Interface (NIC-SI):** A panel for configuring sideband interface settings.

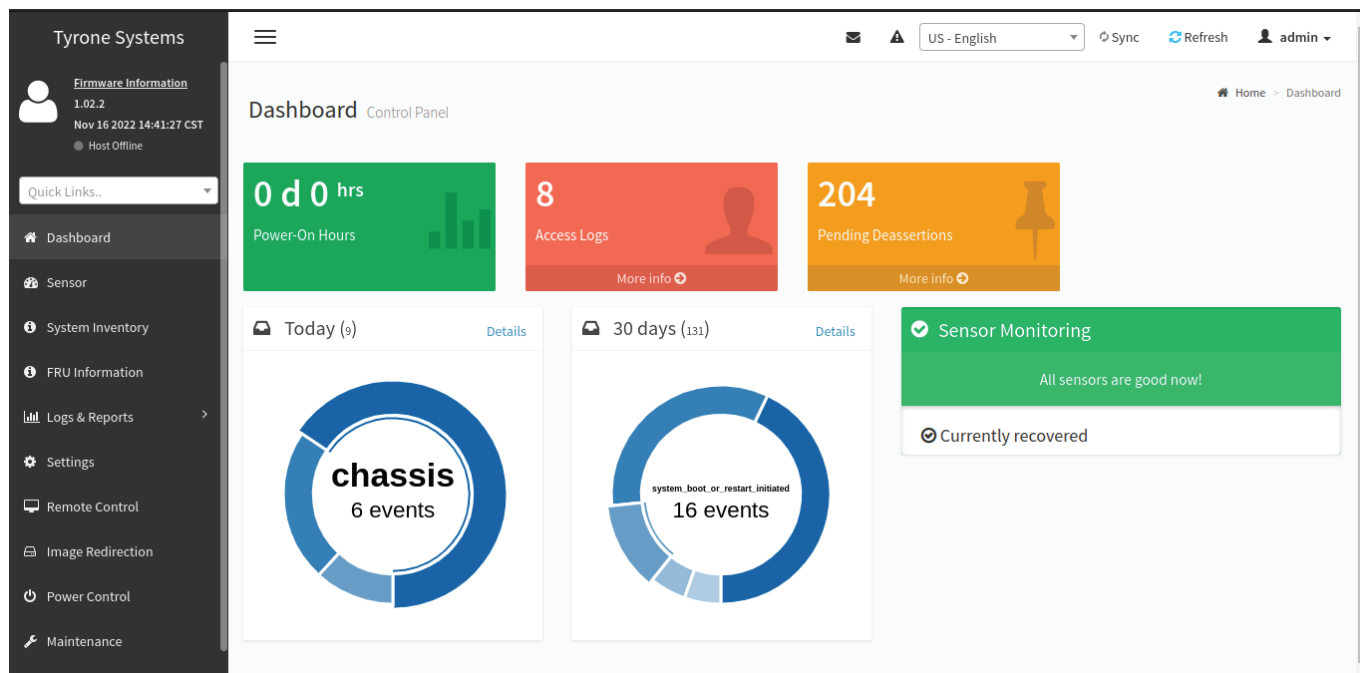
- Configurations can be saved as template and can be reused.

### 3. Real Time Monitoring and Analytics

Server health management with real-time subcomponent monitoring, error detection, proactive health management, and server firmware synchronization to ensure performance and stability of a system.

- Monitor server and sub-component health in real time and act on alerts
- Health status of critical components like Processors, Memory, Storage, Networking, and other parameters such as system cooling, temperature etc., blink LED to identify server
- Check the firmware version of Tyrone Servers and identify outliers
- Comprehensive Inventory Management





Tyrone Systems | Not secure | https://172.16.15.62/#system\_inventory\_info

Quick Links: Dashboard, Sensor, System Inventory, FRU Information, Logs & Reports, Settings, Remote Control, Image Redirection, Power Control, Maintenance, Sign out

System | Processor | Memory Controller | BaseBoard | Power | **Thermal** | PCIe Device | PCIe Function | Storage

### Fan Info

Name	Member id	Physical Context	State	Reading(RPM)	UF	UC	UNC	LNC	LC	LF
FAN1	16	Fan	Enabled	8200.000000	NA	NA	NA	NA	800	500
FAN2	17	Fan	Enabled	7900.000000	NA	NA	NA	NA	800	500
FAN3	18	Fan	Enabled	8200.000000	NA	NA	NA	NA	800	500
FAN4	19	Fan	Enabled	7800.000000	NA	NA	NA	NA	800	500
FAN5	20	Fan	Enabled	8200.000000	NA	NA	NA	NA	800	500
FAN6	21	Fan	Enabled	7900.000000	NA	NA	NA	NA	800	500
FAN7	22	Fan	Enabled	8300.000000	NA	NA	NA	NA	800	500
FAN8	23	Fan	Enabled	8200.000000	NA	NA	NA	NA	800	500

### Temperature Info

Name	Member id	Physical Context	State	Reading(Celsius)	UF	UC	UNC	LNC	LC	LF
CPU0_Temp	32	Intake	Enabled	50.000000	96	93	NA	NA	NA	NA
CPU1_Temp	33	Intake	Enabled	41.000000	96	93	NA	NA	NA	NA
CPU0_VR	36	Intake	Enabled	40.000000	110	105	NA	NA	NA	NA
CPU1_VR	37	Intake	Enabled	27.000000	110	105	NA	NA	NA	NA
Inlet	38	Intake	Enabled	25.000000	75	70	NA	NA	NA	NA
PCH	41	Intake	Enabled	51.000000	104	99	NA	NA	NA	NA
Ambient	42	Intake	Enabled	46.000000	85	80	NA	NA	NA	NA
BMC	43	Intake	Enabled	46.000000	90	85	NA	NA	NA	NA
X550	44	Intake	Enabled	47.000000	123	118	NA	NA	NA	NA
CPU0_DIMMAD	48	Intake	Absent	NA	90	85	NA	NA	NA	NA

**FRU Field Replaceable Units**

Available FRU Devices

FRU Device ID: [Search]

FRU Device Name: FRU

Chassis Information Area Format Version	1
Chassis Type	Main Server Chassis
Chassis Part Number	132CH-R1600
Chassis Serial Number	519-22100200100039

Board Information Area Format Version	1
Language	English
Manufacture Date Time	Sat May 6 11:32:00 2023
Board Manufacturer	TyroneSystems
Board Product Name	AW120X-L6i
Board Serial Number	ASB030120426
Board Part Number	AW120X-L6i

Product Information Area Format Version	1
Language	English
Product Manufacturer	TyroneSystems
Product Name	Camariro
Product Part Number	TD100C3R-212
Product Version	01
Product Serial Number	2X2208623050
Asset Tag	SOE3003562102

- Enhanced Capacity Planning
- Automatic Under-utilized Server Identification by analysing historical utilization and power data
- Data Center Layout Management by power budget enforcement, power capping etc.
- Predictive detection of unhealthy devices in Servers (Processor, MBD, Memory, Fan, Power Supply, Storage, Voltage / Sensor Reading) (of multiple components) with alerts, anomaly detection, Server failure Indication and alerts
- Telemetry data for analytics

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**Analytics**

Server Analytics (Data Center View)

CPU Temperature (in a day)

Total Power Consumption

System Temperature (in a day)

Fault Records

Event Severity Chart (in last 60 mins)

Event Frequency (in last 7 days)

## 4. Notifications, Alerts, Reporting & Servicing

Monitoring of data center health, power, and thermals in real time and providing alerts and notifications

- Alerts based on custom power & thermal events
- Centralized reporting tools that provide comprehensive details inventory reporting etc.
- Event logs (with monitoring and extraction) based on real time events / health reporting,
- Offers Self Service portal for firmware and patch deployments.).
- Provision for integration of status monitoring of tickets generated and warranty details.

The screenshot shows the ProServe web interface. The top navigation bar includes 'Settings' and a user profile 'tsm-admin' with a 'Logout' button. The left sidebar lists various system management options. The main content area is titled 'Manage Alert' and contains a 'Setup Alert Notification' table. This table lists different event types and their associated alert configurations.

Type	Event	Severity	<input type="checkbox"/> Email	<input type="checkbox"/> SNMP	<input type="checkbox"/> IPMI
System	Health check failed	Warning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
System	Auto system reset	Warning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
User	Bandwidth threshold	Unknown	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
System	Deployment failed	Warning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

An 'Apply' button is located at the bottom right of the table.

The screenshot displays the 'Event Log' section of the Tyrone Systems web application. The interface includes a sidebar with navigation options like 'Dashboard', 'Sensor', 'System Inventory', and 'Logs & Reports'. The main area shows a list of sensor event logs with filters for date and type. Below the list is a chart titled 'Event Logs Statistics' and a detailed view of specific events.

**Event Log: 28 out of 28 event entries**

- May 2023
- ID: 28 ChassisIntrusion sensor of type physical\_security logged a general chassis intrusion (a day ago)
- ID: 27 sensor of type system\_event logged a pef action (a day ago)
- ID: 26 sensor of type system\_event logged a pef action (a day ago)
- ID: 25 sensor of type system\_event logged a pef action (a day ago)
- ID: 24 FAN2 sensor of type fan logged a lower critical going low (a day ago)
- ID: 23 FAN2 sensor of type fan logged a lower non-reversible online low (a day ago)

**System Logs**

Log Records

Time of Event	IPMI Address	Machine Name	Log Messages
12/05/2023	172.27.152.89	Tyrone	(root) CMD (run-parts /etc/cron.hourly)
12/05/2023	172.27.152.89	Skyus	Out of memory: Kill process 1234 (firefox) score 5678 or sacrifice child
12/05/2023	174.27.142.23	Unknown	Starting Network Manager...
12/05/2023	171.27.122.90	Skyus	Failed password for user john from 192.168.0.100 port 1234 ssh2
12/05/2023	172.27.152.82	Tyrone	Your request has been processed successfully.
12/05/2023	172.27.152.30	Tyrone	systemd[1]: Starting Network Manager...
12/05/2023	172.27.153.85	Unknown	Your request has been processed successfully.
12/05/2023	172.27.152.89	Skyus	Failed password for user john from 192.168.0.100 port 1234 ssh2

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**Maintenance**

- Backup Configuration
- Firmware Image Location
- Firmware Information
- Firmware Update
- Preserve Configuration
- Restore Configuration
- Restore Factory Defaults
- System Administrator
- POST Code
- BMC Reset

## 5. Miscellaneous

ProServe provides various miscellaneous features and can be customized as per user requirements by providing below enumerated features :

- Secure SED Management, Auto Lock with Local Key Management, Instant Secure Erase with coherent controller management utility, RAID Management & Virtual Disks Creation
- Intuitive web console that provides features with provision for inventory & health alerts
- RESTful APIs for Integrate with other solutions, Provides SDK based on programming language like Python or similar. Custom scripts configurations.
- Highly Customizable dashboard (user de-fined with flexible name and widgets), Multiplatform Support, Industry Standard Protocols and underlying tools

- Alert if select component(s) populated are not in OEM Hardware System Compatibility list

The screenshot shows the ProServe Assets Management interface. A modal dialog titled "Release OS" is open, asking "Secure Erase the disk" with "NO" and "YES" buttons. The "YES" button is highlighted. Below the dialog is a table of assets with columns: Machine Name, IPMI Address, Machine Name, Serial, Vendor Name, Rack Name, Tags, Power State, and Action. The table lists 10 assets, including "Compute-1", "Primary Server", and "Unknown". The "Action" column shows various options like "Lock Machine", "KVM Over HTML", "Commission", "Decommission", "Rollback OS", "Release OS", "Power ON", "Power OFF", and "Assignment".

Machine Name	IPMI Address	Machine Name	Serial	Vendor Name	Rack Name	Tags	Power State	Action
Compute-1	172.10.15.141	Compute-1	TY36DX54	Tyrone	rack1	14	ON	Lock Machine
Unknown	172.10.15.142	Unknown	TY36DX53	Tyrone	rack2	14	OFF	KVM Over HTML
Primary Server	172.10.15.143	Primary Server	TY36DX57	Tyrone	rack3	14	ON	Commission
Tyrone	172.10.15.146	Tyrone	TY36DX58	Tyrone	rack4	14	ON	Decommission
Unknown	172.10.15.149	Unknown	TY36DX50	Tyrone	rack5	14	ON	Rollback OS
Unknown	172.10.15.158	Unknown	TY36DX54	Tyrone	rack1	14	ON	Release OS
Unknown	172.10.15.159	Unknown	TY36DX53	Tyrone	rack2	14	OFF	Power ON
Primary Server	172.10.15.169	Primary Server	TY36DX57	Tyrone	rack3	14	ON	Power OFF
Unknown	172.10.15.178	Unknown	TY36DX58	Tyrone	rack4	14	ON	Assignment
Tyrone	172.10.15.165	Tyrone	TY36DX50	Tyrone	rack5	14	ON	Commission

The screenshot shows the Tyrone Systems System Inventory interface. The "Storage" tab is selected, displaying a table of storage drive information. The table has columns: Name, Serial Number, Manufacturer, Protocol, Model, Revision, Encryption Status, Media Type, and State. The table lists 10 storage drives, including NVMe and SATA drives from Samsung and Seagate.

Name	Serial Number	Manufacturer	Protocol	Model	Revision	Encryption Status	Media Type	State
NVMe_DeviceC_N5D1	56CKN07B07238	N/A	NVMe	SAMSUNG MZQL277EHLA-00A07	NVMe Spec v1.4	Unlocked	SSD	Enabled
NVMe_DeviceD_N5D1	56CKN07B07590	N/A	NVMe	SAMSUNG MZQL277EHLA-00A07	NVMe Spec v1.4	Unlocked	SSD	Enabled
SATA_DeviceB_Port0	56PENL0TC14003F	N/A	SATA	Samsung SSD 870 EVO 500GB	V50TB2Q6	Unlocked	SSD	Enabled
SCSI_Target9_LUN0	N/A	SEAGATE	NA	4006	I200	Unlocked	NA	Enabled
SCSI_Target9_LUN200	N/A	SEAGATE	NA	4006	I200	Unlocked	NA	Enabled
SCSI_Target9_LUN300	N/A	SEAGATE	NA	4006	I200	Unlocked	NA	Enabled
SCSI_Target9_LUN400	N/A	SEAGATE	NA	4006	I200	Unlocked	NA	Enabled
SCSI_Target9_LUN500	N/A	SEAGATE	NA	4006	I200	Unlocked	NA	Enabled
SCSI_Target9_LUN600	N/A	SEAGATE	NA	4006	I200	Unlocked	NA	Enabled
SCSI_Target9_LUN700	N/A	SEAGATE	NA	4006	I200	Unlocked	NA	Enabled



**Manage Template**

**Create Policy Template**

Template Name \*

Choose Operating System \* Ubuntu LTS

Enable CLI ☐ Enable SSH ☐ Enable Web Server ☐

Create RAID Configuration \* NO YES

Choose RAID Combination \* RAID 0 RAID 1 RAID 5 RAID 6

[Create Template](#)

**Template List**

Machine Name  Search by Machine Name [Search](#) Sort By Descending

<input type="checkbox"/>	Template Name	Operating System	Enable CLI	Enable SSH	Enable Web Server	RAID Type
<input type="checkbox"/>	Template1	Ubuntu 22.04	No	Yes	No	RAID 5

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- Dynamic enable/disable of ports (USB etc.) remotely

**USB Configuration**

Select a BIOS Variable USB Front Ports Enable

BIOS Variable Value 0x1 (Enabled)

Setup Page Advanced/USB Configuration/USB Front Ports Enable

Key Value	BIOS Variable Description	Value	SavedValue	ID
USB Front Ports Enable	Enable or disable the USB Front Ports	0x1 (Enabled)	0x1 (Enabled)	0
USB Rear Ports Enable	Enable or disable the USB Rear Ports	0x1 (Enabled)	0x1 (Enabled)	1
USB Internal Ports Enable	Enable or disable the USB Internal and BMC Ports	0x1 (Enabled)	0x1 (Enabled)	2

## 6. Secure Authentication

Tyrone ProServe provides secure management using various authentication measures for secure Server Management. Such examples of measures include:

- HTTPS
- LDAP
- NTP
- Active Directory
- SMTP
- SNMP
- Radius
- SSH

**Authentication**

**Configure Authentication Source**

Authentication Source \* LOCAL LDAP AAA

RADIUS Server Name \*

Encryption \* ☐ Backup RADIUS \* ☐ Enable Backup RADIUS Support

Auth Method \* FAP CHAP

IP Address \*  Port \*

Shared Secret \*  Confirm Secret \*

Retry Policy  Max Number of Retries \*

[Configure](#)

## 7. Technical information

Tyrone ProServe uses industry standard protocols, Interface mechanism and user interface which enable user to perform System Management with ease and provides facility to customize, integrate in multi platforms. Such details are covered vide a comprehensive list comprising of:

### a. Hardware Protocols:

- IPMI (2.0)
- Redfish
- HTTPS
- SSH/CLI
- SNMP

### b. Management Interface:

- BMC, IPMI 2.0, IPMI over LAN,
- Serial over LAN
- Out of Band Management
- Agent based Management
- iKVM
- Virtual Media
- Redfish & SMASH Support

### c. User Interface:

- REST APIs,
- HTML5 GUI
- JAVA
- CLI / PowerShell

# TSM Product datasheet doesn't cover all features, there may be extensive features happened to be part of the TSM but have not reflected here. For such details kindly contact local Tyrone representative.