

State of Ohio Private Cloud Provisioning Servers



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1 Provisioning Servers

The procedures in this document cover Provisioning servers on all platforms.

1.1 Action or Event that Requires the Procedure

Requests can be from any of several roles. The procedure to build a new server begins with either:

- A request from the Customer Service Center (CSC) through the ticketing system
- A request through the ServiceNow Service Catalog
- Or a verbal or email request from management

A Server Administrator (SA) will review the request and determine if all requirements to begin the build have been met. If the user is unable to utilize ServiceNow to enter the server build request, a spreadsheet will be provided by the SA to assist the customer in requirements gathering.

For larger projects, or builds on a new network segment, a Technical Team (TT) may be required to review the request. The Technical Team can consist of representatives from Network, Security, Database, Shared Hosting, and other areas as required by the particular request. The Technical Team can also be thought of as additional or other service lines.

The TT either rejects or approves the request. No official paperwork indicating approval is required from the TT.

After the TT meeting to approve:

- A member of the TT documents the request in the ticket already entered in the CSC system.
- Or, if the request was verbal or through email, a member of the TT submits a project ticket through the CSC.

Notes:

- A ticket must be submitted through the CSC before work can begin.
- A ticket can be auto-created or created by Tier 1.

Roles participating in the server build update the ticket in the CSC system as the tasks are completed.

1.2 Goal of the Procedure

At a high level, the goal of the procedure is to produce consistent and repeatable results when building a new server.

Specifically, the goals of the procedure are to:

- Build the sever to the Requester's specifications

- Install all necessary tools
- Update all attributes and Source of Authority repositories
- Complete all related tasks as determined by the TT

Source of Authority includes various sources used to record server information, including the IBM Endpoint Manager (IEM) server contacts field in the IEM Console and the ServiceNow Configuration Management DataBase (CMDB).

- Meets the requirements of a “finished server” as defined by Ohio DAS
- Meets the finish-by date needed by the agency

1.3 Physical Asset Tracking

All assets need to be tracked throughout their lifecycle. A brief overview is provided here.

Asset Lifecycle Flow

1. Device arrives at initial location (SOCC in most, if not all cases)
2. Device is asset tagged with a DAS or Agency asset tag
3. An asset tracking spreadsheet is filled out and submitted to the Asset Management team
 - From this spreadsheet, an entry in the Asset Management DataBase (AMDB) is created with the provided information
4. The asset is then placed in a temporary location or the rack location
 - The AMDB is updated to reflect any change in location
5. The asset is moved to production status
6. The asset has completed the current purpose and moved to post-production status
7. The asset moves through the decommissioning process
 - The AMDB is updated to reflect any change in location
8. The asset is either saved for repurposing or begins the disposal process

Asset and Configuration Item Status Summary

In Stock – New Equipment that has been received and is awaiting deployment

In Storage – Equipment that has gone through a partial lifecycle and is available

In Use – Equipment that is currently in use

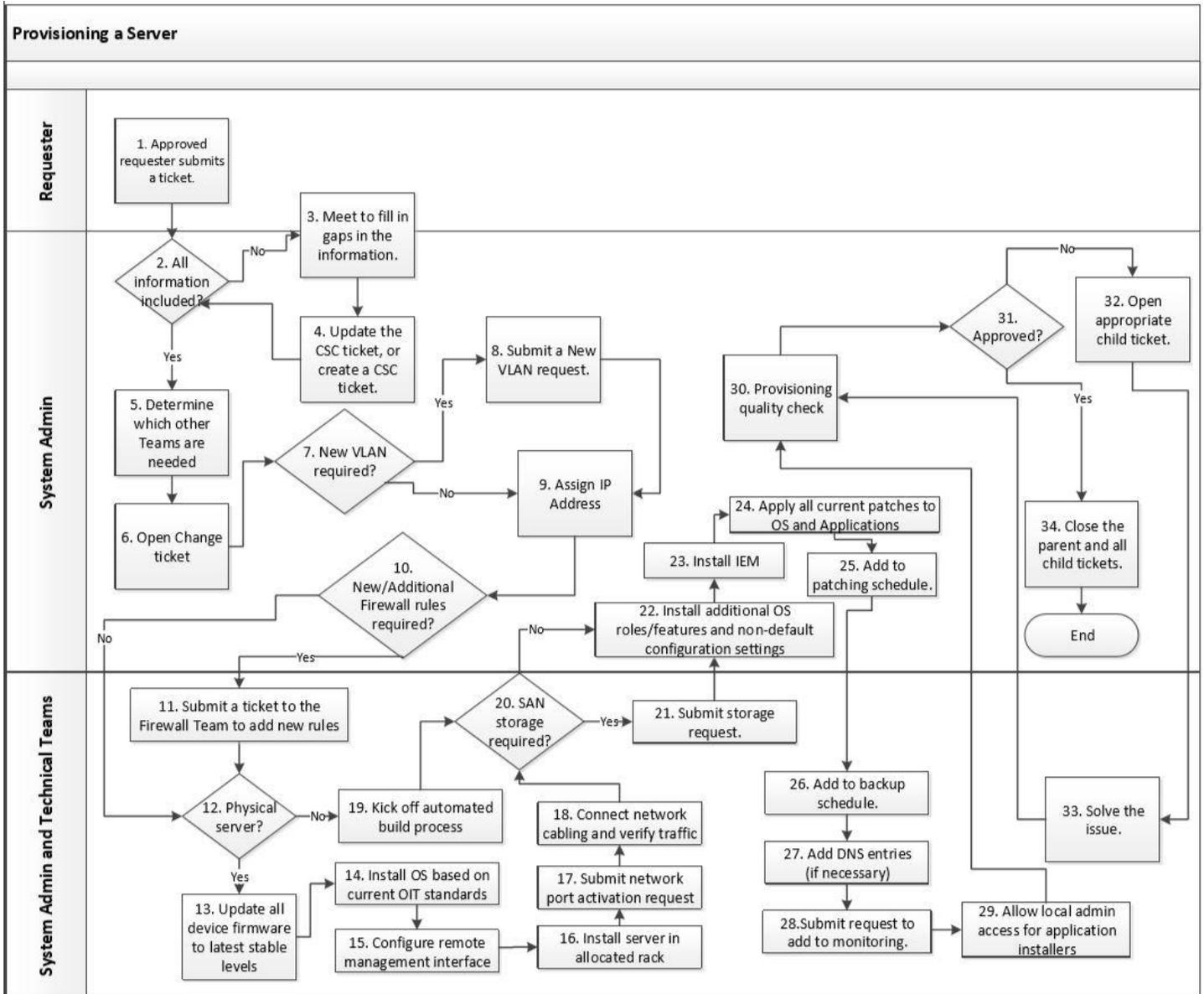
Retired – Equipment that is no longer in the lifecycle and has been removed from use and will not be repurposed

*Options presented are a reflection of currently used statuses provided by the Asset Management team at the time of publication.

2 Provisioning: Procedure Flow and Narrative

2.1 Provisioning a Server Flow

The following flow illustrates the interactions between the Requester and OIT personnel.



2.2 Provisioning a Server Narrative

The following table describes the steps for completing a request to activate a server.

Table 1: Provisioning a Server

Role	Step	
Requester	1	Submit a ticket. Tickets are submitted through the CSC or through a verbal or email request to OIT. Note: Work cannot begin until a ticket is submitted through the CSC.
System Admin	2	All information included? Review the ticket or request to verify that all the information needed is provided. <ul style="list-style-type: none"> ○ If more information is needed, go to step 0. ○ If all needed information is included, go to step 0.
Requester System Admin	3	<ul style="list-style-type: none"> • Meet to fill in gaps in information.
System Admin	4	Update the CSC ticket, or create a CSC ticket. Use the information from the meeting with the Requester to: <ul style="list-style-type: none"> ○ Update the CSC ticket, if one was submitted. ○ Create a CSC ticket, if it was a verbal or email request.
	5	Determine Technical Teams for the Discovery phase.
	6	Open up a change ticket and appropriate change tasks.
	7	<ul style="list-style-type: none"> • Is a new VLAN required? <ul style="list-style-type: none"> ○ If yes, go to step 8. ○ If no, go to step 9.
	8	<ul style="list-style-type: none"> • Open up a new incident ticket and attach a new VLAN request template.
	9	<ul style="list-style-type: none"> • Open a CTASK to assign an IP address in the requested VLAN
	10	<ul style="list-style-type: none"> • Are new or additional firewall rules required for this server or VLAN? <ul style="list-style-type: none"> ○ If yes, go to step Error! Reference source not found.. ○ If no, go to step 12.
Technical Teams	11	Submit a firewall request with the appropriate rules. For a new VLAN, there is a private cloud migration template that should cover most, if not all, of the rules required for the new VLAN.
	12	<ul style="list-style-type: none"> • Is this a physical server build? <ul style="list-style-type: none"> ○ If yes, go to step 13. ○ If no, go to step 19.

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Role	Step	
	13	<p>Update all device firmware to the latest stable versions</p> <p>This may include:</p> <ul style="list-style-type: none"> ○ BIOS ○ Remote management interface (iLO/DRAC/RSA/etc) ○ Ethernet/Fiber cards ○ I/O cards ○ Other devices with flash-able ROM
	14	<ul style="list-style-type: none"> • Install appropriate operating system based on current OIT standards. Documentation outlining the base OS build can be provided upon request and may reside in repositories available to OIT customers
	15	<ul style="list-style-type: none"> • Configure the remote management interface. All physical servers managed by OIT must have a remote management interface to allow features such as power cycling and remote console access. For traditional servers, this will be provided by the vendor's version of a remote management interface. For blade servers, this will be facilitated through the chassis that contains the blade server.
	16	<p>Physically install the server in the assigned rack space and ensure the Asset Management DataBase (AMDB) is updated with the correct information. This may require a CTASK to be opened with an attached asset transfer spreadsheet.</p>
	17	<p>Submit a network port activation request. Network cables are not connected at this point in order to avoid potential port issues.</p>
	18	<ul style="list-style-type: none"> • Connect network cables and work with the network team to verify traffic. • Go to step 20
	19	<ul style="list-style-type: none"> • Kick off the automated build process for Virtual Machines. This process utilizes automation and templates to produce a semi-customized VM that conforms to OIT standards.
	20	<ul style="list-style-type: none"> • Is SAN storage required? <ul style="list-style-type: none"> ○ If yes, go to step 21. ○ If no, go to step 22.
	21	<ul style="list-style-type: none"> • Submit a storage request to the storage team.
System Admin	22	<ul style="list-style-type: none"> • Install any additional OS roles, features, and/or non-default configuration settings required for the server build.
	23	<ul style="list-style-type: none"> • Install IBM Endpoint Manager (IEM) <p>This is the tool used by OIT for patching, configuration management, and many other OS management tasks.</p>

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Role	Step	
	24	<ul style="list-style-type: none"> Apply all current patches to the OS and default applications. The VM template is patched monthly, but adding additional roles or features may require additional updates. All physical servers require patching. <ul style="list-style-type: none"> This step is where additional tools are also installed and verified, such as: ITM, TADDM, TAD4D, SEA, McAfee (ePO), Qualys (qRadar), and Avecto <p>*Agencies that require an agency-specific McAfee Framework: DRC, TAX, JFS, BWC, and DOT</p>
	25	<ul style="list-style-type: none"> Add the server to a patching schedule. Current standards require a round, day, and time
	26	<ul style="list-style-type: none"> Add the server to a backup schedule if required. Current standards are None, 30, 60, and 90 days. Exceptions can be made upon request if needed.
	27	<ul style="list-style-type: none"> Add DNS entries if necessary. <ul style="list-style-type: none"> Windows domain-joined servers do this automatically Additional records may be required, depending on requirements Unix/Linux systems may need manual entries created
	28	<ul style="list-style-type: none"> Submit a request to have the server added to monitoring.
	29	<ul style="list-style-type: none"> Add requested users/groups to the local admin group in order to install applications. Add requested users/groups as remote desktop users if necessary <p>Note: Local Admin access can be removed at any time at the discretion of OIT</p>
	30	<ul style="list-style-type: none"> A Quality Check (QC) is performed by a second Administrator to ensure that the server has been built to OIT standards and also meets the requirements of the request.
	31	<ul style="list-style-type: none"> Does the server meet all requirements? <ul style="list-style-type: none"> If yes, go to step 34. If no, go to step 32.
	32	<ul style="list-style-type: none"> Open a ticket to the required team to resolve any issues.
Technical Teams	33	<ul style="list-style-type: none"> Solve the issues raised in the ticket.
System Admin	34	<ul style="list-style-type: none"> Close the parent ticket and any child tickets.
End		

3 State of Ohio Gold Images

The contents in this section highlight the configuration of the listed server platform for a base installation before any additional configuration

3.1 Windows Servers

1 CPU
2 GB RAM
50 GB C:
1 GB D:
E: CD ROM

System managed page file
Floppy drive removed
VMware Tools
“Interactive logon: Do not display last user name” – Enabled
IPv6 disabled
Windows firewall disabled
All patches within one month
Administrator account renamed with dummy account created for enhanced security
Custom background displaying server name, OS, CPUs, RAM, IP, and domain

Patching and Monitoring tools installed:
IEM
ITM
TADDM
McAfee Framework

Additional Applications:
AVECTO

3.2 Linux Servers

To be provided

3.3 Unix Servers

To be provided

4 Server Build Checklist

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Server Build Validation Check Sheet

Server Name:	
Server Builder:	
Auditor Name:	
Date of Audit:	

4.1 Server Specifications

	Requested Value	Validated?
CPU Count		<input type="checkbox"/>
Memory		<input type="checkbox"/>
OS Drive		<input type="checkbox"/>
Data drive formatted as GPT		<input type="checkbox"/>
Additional Drives	1: 2:	<input type="checkbox"/>
Additional Roles/Features		<input type="checkbox"/>
IP Address		<input type="checkbox"/>
Domain		<input type="checkbox"/>

4.2 Administrative Data

	Validated?
IPv6 unchecked?	<input type="checkbox"/>
DNS Servers	<input type="checkbox"/>
DNS Entries exist	<input type="checkbox"/>
IEM installed and reporting	<input type="checkbox"/>
Local Admin account renamed and password reset	<input type="checkbox"/>
TADDM account exists	<input type="checkbox"/>
ALE installed	<input type="checkbox"/>
McAfee installed	<input type="checkbox"/>
IBM tools installed	<input type="checkbox"/>
Server in CMDB	<input type="checkbox"/>
Server in patching schedule	<input type="checkbox"/>
Server in backup schedule	<input type="checkbox"/>
IBM service request exists for new server	<input type="checkbox"/>
AD object in correct folder	<input type="checkbox"/>
RDP enabled	<input type="checkbox"/>
Firewall disabled	<input type="checkbox"/>
Windows update disabled	<input type="checkbox"/>

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OS Activated	<input type="checkbox"/>
Date/Time/Time zone correct	<input type="checkbox"/>
Page file: System managed	<input type="checkbox"/>
Service Accounts created/added	<input type="checkbox"/>

4.3 Additional Data – Virtual Server

	Validated?	N/A
Correct virtual environment	<input type="checkbox"/>	<input type="checkbox"/>
Correct storage tier	<input type="checkbox"/>	<input type="checkbox"/>

4.4 Additional Data – Physical Server

	Validated?	N/A
Asset spreadsheet	<input type="checkbox"/>	<input type="checkbox"/>
Racked	<input type="checkbox"/>	<input type="checkbox"/>
Cabled	<input type="checkbox"/>	<input type="checkbox"/>
NIC Team set up	<input type="checkbox"/>	<input type="checkbox"/>

4.5 Coordination with Additional Service Groups

	Validated?	N/A
ISP confirmation	<input type="checkbox"/>	<input type="checkbox"/>
UNS confirmation - Network	<input type="checkbox"/>	<input type="checkbox"/>
UNS confirmation - Firewall	<input type="checkbox"/>	<input type="checkbox"/>
SQL validation	<input type="checkbox"/>	<input type="checkbox"/>